

North Dakota Electronics Standards

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North Dakota Department of Career and Technical Education

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Crosswalks

What is an academic crosswalk?

An academic crosswalk shows the connections between Career and Technical Education standards and state academic standards developed by the North Dakota Department of Public Instruction.

What academic areas are crosswalked with CTE standards?

The state academic areas that are crosswalked include: English/Language Arts, Mathematics, Science, Social Studies, and Health.

What is the purpose of an academic crosswalk?

When Career and Technical Education teachers teach ND CTE standards, they also reinforce academic standards in areas such as English/Language Arts, Mathematics, Science, Social Studies, and Health. The crosswalk, competency by competency, specifies the academic standards that are reinforced when the CTE teachers teach the standards.

How do I use the crosswalk?

The crosswalk is primarily a reference document. CTE teachers use the crosswalk when they are asked to identify the state academic standards they are reinforcing when they teach CTE standards.

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Standard 1: INTRODUCTION TO ELECTRICITY
Topic 1: Electrical Theory
Competency 1.1.1: Describe atomic structure, the components of the atom, their charges and importance to electronics technology

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Competency 1.1.1: Describe atomic structure, the components of the atom, their charges and importance to electronics technology

Competency 1.1.1: Describe atomic structure, the components of the atom, their charges and importance to electronics technology
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English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7/11.2.6 Access prior knowledge to interpret meaning
- 9.4.5/12.4.4 Use critical listening skills; i.e., reflection
- 10.1.4 Use relevant information
- 10.4.3 Formulate questions in response to a verbal message
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No existing North Dakota Mathematics standard

Science

- 6.1.1 Construct a model to represent concepts, features, or phenomena in the real world (e.g., solar system, earth's interior)
- 6.1.2 Identify systems that are composed of subsystems (e.g., solar system, cell, ecosystems.)
- 6.1.3 Explain the connection between cause and effect in a system
- 7.2.1 Communicate the results of scientific investigations using an appropriate format (e.g., journals, lab reports, diagrams, presentations, discussions)
- 8.3.3 Interpret the effect of balanced and unbalanced forces on the motion of an object (e.g.,

convection currents, orbital motion, tides)

Science (continued)

- 8.3.4 Explain how all objects exert gravitational force and this force is affected by the distance between the masses of the objects
- 9-10.3.3 Identify the Law of Conservation of Matter in physical and chemical changes
- 9-10.3.4 Construct a model of an atom (e.g., protons, neutrons, electrons, nucleus, electron cloud)
- 11-12.1.4 Explain the relationship between form and function (e.g., atoms and ions, enzymes, aerodynamics)
- 11-12.1.5 Explain how classification can be based on the relationship between form and function (e.g., polar vs. nonpolar molecules, structure of periodic table , DNA vs. RNA)

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

Standard 1: INTRODUCTION TO ELECTRICITY
Topic 1: Electrical Theory
Competency 1.1.2: List uses for magnetism in electronics technology

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 11.1.4 Verify the quality, accuracy, and usefulness of information
- 11.1.5 Synthesize information in a logical sequence
- 11.2.6 Apply prior knowledge of content to interpret meaning of text

Mathematics

- No existing North Dakota Mathematics standard

Science

- 8.2.2 Use evidence to generate descriptions, explanations, predictions, and models
- 8.2.4 Design and conduct a scientific investigation (e.g., making systematic observations, making accurate measurements, identifying and controlling variables)
- 9-10.1.2 Describe the interaction of components within a system (e.g., interactions between living and nonliving components of an ecosystem, interaction between organelles of a cell)
- 9-10.1.3 Explain how a system can be dynamic yet may remain in equilibrium (e.g., water cycle, rock cycle, population)
- 11-12.3.8 Identify the principles and relationships influencing forces and motion (e.g., gravitational force, vectors, velocity, friction)
- 11-12.3.13 Explain how magnetic forces relate to electric forces

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

Standard 1: INTRODUCTION TO ELECTRICITY
Topic 1: Electrical Theory
Competency 1.1.3: Explain basic uses for electricity

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details

English/Language Arts (continued)

- 10.1.4 Use relevant information
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- 6.3.3 Identify different forms of energy (e.g., chemical, mechanical, heat, sound)
- 6.3.4 Identify sources of energy (e.g., sun, wind, moving water, nuclear, fossil fuels, food)
- 9-10.3.8 Describe the relationships between kinetic and potential energy in basic transformations (e.g., physical and chemical changes)
- 9-10.6.2 Explain how scientific principles have been used to create common technologies (e.g., household appliances, automotive parts, agricultural equipment, textiles, fabrics, computers, Internet resources, CD-ROMs)
- 9-10-6.3 Explain how emerging technologies (e.g., genetic manipulation, biofuels, and hydrogen fuels) may impact society and the environment
- 11-12.3.9 Explain the relationship among thermal energy, temperature, and the motion of particles

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

Standard 1: INTRODUCTION TO ELECTRICITY
Topic 1: Electrical Theory
Competency 1.1.4: Describe the basic methods of using electricity to operate a motor and how mechanical motion causes a generator to produce electrical current

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension

6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension

English/Language Arts (continued)

- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.1.4 Verify the quality, accuracy, and usefulness of information
- 11.1.5 Synthesize information in a logical sequence
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- 7.3.1 Explain how forms of energy can be transferred. (e.g., photosynthesis, metabolism, battery)
- 8.3.3 Interpret the effect of balanced and unbalanced forces on the motion of an object (e.g., convection currents, orbital motion, tides)
- 11-12.1.13 Explain how a system can be dynamic yet may remain in equilibrium (e.g., balance of forces, Le Chatelier's Principle, acid base systems)
- 11-12.3.13 Explain how magnetic forces relate to electric forces

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health Standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

Standard 1: INTRODUCTION TO ELECTRICITY
Topic 1: Electrical Theory
Competency 1.1.5: Explain the differences between current, voltage and resistance

Topic 1: Electrical Theory
Competency 1.1.5: Explain the differences between current, voltage and resistance

Competency 1.1.5: Explain the differences between current, voltage and resistance
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English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.1.4 Verify the quality, accuracy, and usefulness of information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- 6.1.9 Use order of operations; i.e., multiplication, division, addition and subtraction, to simplify numeric expressions
- 6.1.10 Multiply and divide decimals
- 6.1.11 Add, subtract, multiply, and divide fractions
- 6.1.12 Express an exponent in standard form
- 6.1.14 Estimate the results of problems involving whole numbers, fractions, and decimals
- 6.3.6 Make predictions based on trends identified in tables and graphs
- 6.4.2 Select an appropriate unit of measure; e.g., What unit do you use to measure a person's height?
- 6.4.3 Convert unit measurements within the same system (metric and standard)
- 6.5.2 Use a variable to represent an unknown quantity
- 7.1.1 Use ratios and proportions to represent relationships
- 7.1.4 Use integers to represent and compare quantities
- 7.1.6 Use order of operations (i.e., parentheses and operations) to simplify numeric expressions

- 7.1.7 Add, subtract, multiply, and divide fractions and terminating decimals
- 7.1.8 Solve real-world problems using integers, fractions, decimals, and percents

Mathematics (continued)

- 7.1.9 Estimate the results of problems involving fractions, decimals, and percents
- 7.1.10 Use proportions to solve problems
- 7.4.2 Convert unit measurements within the same system (metric and standard) when solving problems
- 8.1.2 Solve real-world problems involving ration, proportion, and percent
- 8.1.4 Represent large and small numbers using scientific notation
- 8.1.6 Apply the order of operations to simplify numeric expressions and solve problems
- 8.1.7 Add, subtract, multiply, and divide integers
- 8.1.8 Select and use a computational technique (e.g., mental calculation, paper-and-pencil, technology) to solve problems
- 8.1.9 Determine when an estimate is sufficient and an exact answer is needed in problem situations
- 8.4.1 Select an appropriate degree of precision when using measurements for calculations
- 8.5.3 Apply the order of operations and the commutative, associative, and distributive properties to simplify algebraic expressions
- 9-10.1.1 Express numbers between one-billionth and one billion in fraction, decimal, and verbal form; express numbers of all magnitudes in scientific notation
- 9-10.1.5 Use the order of operations and properties of exponents to simplify an algebraic expression
- 9-10.1.6 Analyze the effects of multiplication, division, raising to a power, and extracting a root on the magnitudes of quantities; e.g., when will the square root of a number be greater than the number itself, or what will happen to the magnitude of a number when you multiply it by a negative number?
- 9-10.1.7 Apply basic properties of exponents to simplify algebraic expressions; i.e., power of a product, power of a power, products and quotients of powers, zero and negative exponents
- 9-10.1.8 Apply estimation skills to predict realistic solutions to problems
- 9-10.1.9 Select and use a computational technique (i.e., mental calculation, paper-and-pencil, or technology) to solve problems involving real numbers
- 9-10.1.10 Explain the reasonableness of a problem's solution and the process used to obtain it
- 9-10.4.1 Select appropriate units and scales for problem situations involving measurement
- 11-12.1.7 Add, subtract, and multiply complex numbers

Science

- 9-10.1.2 Describe the interaction of components within a system (e.g., interactions between living and nonliving components of an ecosystem, interaction between organelles of a cell)
- 9-10.6.1 Use appropriate technologies and techniques to solve a problem (e.g., computer-assisted tools, Internet, research skills)
- 11-12.6.1 Select and use appropriate technologies, tools, and techniques to solve a problem (e.g., computer-assisted tools, Internet, research skills, CBL, graphing calculators)

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

Standard 1: INTRODUCTION TO ELECTRICITY
Topic 1: Electrical Theory
Competency 1.1.6: List different types of resistive materials and how resistors are used in electronics

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- 6.3.1 Organize materials according to similar properties (e.g., physical, chemical)
- 9-10.3.1 Classify elements according to similar properties. (e.g., metal, nonmetal, solids, liquids, gases)
- 11-12.3.1 Explain how the structure of an atom, isotope, or ion relates to its properties

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

Standard 1: INTRODUCTION TO ELECTRICITY
Topic 1: Electrical Theory
Competency 1.1.7: Show the different purposes for capacitors and list common types and construction

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- 8.3.3 Interpret the effect of balanced and unbalanced forces on the motion of an object (e.g., convection currents, orbital motion, tides)
- 9-10.3.8 Describe the relationships between kinetic and potential energy in basic transformations (e.g., physical and chemical changes)
- 11-12.1.3 Explain how a system can be dynamic yet may remain in equilibrium (e.g., balance of forces, Le Chatelier's Principle, acid base systems)
- 11-12.1.4 Explain the relationship between form and function (e.g., atoms and ions, enzymes, aerodynamics)
- 11-12.1.5 Explain how classification can be based on the relationship between form and function (e.g., polar vs. nonpolar molecules, structure of periodic table , DNA vs. RNA)

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

Standard 1: INTRODUCTION TO ELECTRICITY
Topic 1: Electrical Theory
Competency 1.1.8: Explain how inductance relates to magnetism and describe coil construction, cores and usages

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.1.4 Verify the quality, accuracy, and usefulness of information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- 11-12.1.3 Explain how a system can be dynamic yet may remain in equilibrium (e.g., balance of forces, Le Chatelier’s Principle, acid base systems)
- 11-12.1.4 Explain the relationship between form and function (e.g., atoms and ions, enzymes, aerodynamics)
- 11-12.3.13 Explain how magnetic forces relate to electric forces

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

Standard 1: INTRODUCTION TO ELECTRICITY
Topic 1: Electrical Theory
Competency 1.1.9: Show a comparison between reactance and resistance and describe current/voltage relationships

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.1.4 Verify the quality, accuracy, and usefulness of information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- 6.1.9 Use order of operations; i.e., multiplication, division, addition and subtraction, to simplify numeric expressions
- 6.1.10 Multiply and divide decimals
- 6.1.11 Add, subtract, multiply, and divide fractions
- 6.1.12 Express an exponent in standard form
- 6.1.14 Estimate the results of problems involving whole numbers, fractions, and decimals
- 6.3.6 Make predictions based on trends identified in tables and graphs
- 6.4.2 Select an appropriate unit of measure; e.g., What unit do you use to measure a person's

height?

6.4.3 Convert unit measurements within the same system (metric and standard)

Mathematics (continued)

6.5.1 Identify and describe patterns represented by tables, graphs, and sequences

6.5.2 Use a variable to represent an unknown quantity

7.1.1 Use ratios and proportions to represent relationships

7.1.4 Use integers to represent and compare quantities

7.1.6 Use order of operations (i.e., parentheses and operations) to simplify numeric expressions

7.1.7 Add, subtract, multiply, and divide fractions and terminating decimals

7.1.8 Solve real-world problems using integers, fractions, decimals, and percents

7.1.9 Estimate the results of problems involving fractions, decimals, and percents

7.1.10 Use proportions to solve problems

7.4.2 Convert unit measurements within the same system (metric and standard) when solving problems

7.5.6 Graph change over time; e.g., growth, distance, population

8.1.2 Solve real-world problems involving ration, proportion, and percent

8.1.4 Represent large and small numbers using scientific notation

8.1.6 Apply the order of operations to simplify numeric expressions and solve problems

8.1.7 Add, subtract, multiply, and divide integers

8.1.8 Select and use a computational technique (e.g., mental calculation, paper-and-pencil, technology) to solve problems

8.1.9 Determine when an estimate is sufficient and an exact answer is needed in problem situations

8.4.1 Select an appropriate degree of precision when using measurements for calculations

8.5.3 Apply the order of operations and the commutative, associative, and distributive properties to simplify algebraic expressions

8.5.6 Solve problems involving rates; i.e., speed equals distance divided by time (miles per hour)

9-10.1.1 Express numbers between one-billionth and one billion in fraction, decimal, and verbal form; express numbers of all magnitudes in scientific notation

9-10.1.5 Use the order of operations and properties of exponents to simplify an algebraic expression

9-10.1.6 Analyze the effects of multiplication, division, raising to a power, and extracting a root on the magnitudes of quantities; e.g., when will the square root of a number be greater than the number itself, or what will happen to the magnitude of a number when you multiply it by a negative number?

9-10.1.7 Apply basic properties of exponents to simplify algebraic expressions; i.e., power of a product, power of a power, products and quotients of powers, zero and negative exponents

9-10.1.8 Apply estimation skills to predict realistic solutions to problems

9-10.1.9 Select and use a computational technique (i.e., mental calculation, paper-and-pencil, or technology) to solve problems involving real numbers

9-10.1.10 Explain the reasonableness of a problem's solution and the process used to obtain it

9-10.4.1 Select appropriate units and scales for problem situations involving measurement

11-12.1.3 Use imaginary numbers to express square roots of negative numbers

11-12.1.7 Add, subtract, and multiply complex numbers

Science

- 9-10.6.1 Use appropriate technologies and techniques to solve a problem (e.g., computer-assisted tools, Internet, research skills)
- 11-12.1.3 Explain how a system can be dynamic yet may remain in equilibrium (e.g., balance of forces, Le Chatelier's Principle, acid base systems)

Social Studies

- 9-12.1.1 Interpret and evaluate various visual representations (e.g. charts, graphs, timelines, graphic organizers, maps, flow charts) of data

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

Standard 1: INTRODUCTION TO ELECTRICITY
Topic 1: Electrical Theory
Competency 1.1.10: Compare impedance with reactance and resistance and explain the causes and effects of impedance

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.1.4 Verify the quality, accuracy, and usefulness of information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance

meaning

12.2.2 Critique details, facts, and concepts from nonfiction genres

English/Language Arts (continued)

12.2.8 Use technical language/jargon to decipher meaning

Mathematics

6.1.9 Use order of operations; i.e., multiplication, division, addition and subtraction, to simplify numeric expressions

6.1.10 Multiply and divide decimals

6.1.11 Add, subtract, multiply, and divide fractions

6.1.12 Express an exponent in standard form

6.1.14 Estimate the results of problems involving whole numbers, fractions, and decimals

6.3.6 Make predictions based on trends identified in tables and graphs

6.4.2 Select an appropriate unit of measure; e.g., What unit do you use to measure a person's height?

6.4.3 Convert unit measurements within the same system (metric and standard)

6.5.1 Identify and describe patterns represented by tables, graphs, and sequences

6.5.2 Use a variable to represent an unknown quantity

7.1.1 Use ratios and proportions to represent relationships

7.1.4 Use integers to represent and compare quantities

7.1.6 Use order of operations (i.e., parentheses and operations) to simplify numeric expressions

7.1.7 Add, subtract, multiply, and divide fractions and terminating decimals

7.1.8 Solve real-world problems using integers, fractions, decimals, and percents

7.1.9 Estimate the results of problems involving fractions, decimals, and percents

7.1.10 Use proportions to solve problems

7.4.2 Convert unit measurements within the same system (metric and standard) when solving problems

7.5.6 Graph change over time; e.g., growth, distance, population

8.1.2 Solve real-world problems involving ration, proportion, and percent

8.1.4 Represent large and small numbers using scientific notation

8.1.6 Apply the order of operations to simplify numeric expressions and solve problems

8.1.7 Add, subtract, multiply, and divide integers

8.1.8 Select and use a computational technique (e.g., mental calculation, paper-and-pencil, technology) to solve problems

8.1.9 Determine when an estimate is sufficient and an exact answer is needed in problem situations

8.4.1 Select an appropriate degree of precision when using measurements for calculations

8.5.3 Apply the order of operations and the commutative, associative, and distributive properties to simplify algebraic expressions

8.5.6 Solve problems involving rates; i.e., speed equals distance divided by time (miles per hour)

9-10.1.1 Express numbers between one-billionth and one billion in fraction, decimal, and verbal form; express numbers of all magnitudes in scientific notation

9-10.1.5 Use the order of operations and properties of exponents to simplify an algebraic expression

9-10.1.6 Analyze the effects of multiplication, division, raising to a power, and extracting a

root on the magnitudes of quantities; e.g., when will the square root of a number be greater than the number itself, or what will happen to the magnitude of a number when

Mathematics (continued)

- 9-10.1.7 Apply basic properties of exponents to simplify algebraic expressions; i.e., power of a product, power of a power, products and quotients of powers, zero and negative exponents
- 9-10.1.8 Apply estimation skills to predict realistic solutions to problems
- 9-10.1.9 Select and use a computational technique (i.e., mental calculation, paper-and-pencil, or technology) to solve problems involving real numbers
- 9-10.1.10 Explain the reasonableness of a problem's solution and the process used to obtain it
- 9-10.4.1 Select appropriate units and scales for problem situations involving measurement
- 11-12.1.3 Use imaginary numbers to express square roots of negative numbers
- 11-12.1.7 Add, subtract, and multiply complex numbers

Science

- 9-10.6.1 Use appropriate technologies and techniques to solve a problem (e.g., computer-assisted tools, Internet, research skills)
- 11-12.1.3 Explain how a system can be dynamic yet may remain in equilibrium (e.g., balance of forces, Le Chatelier's Principle, acid base systems)

Social Studies

- 9-12.1.1 Interpret and evaluate various visual representations (e.g. charts, graphs, timelines, graphic organizers, maps, flow charts) of data

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

Standard 1: INTRODUCTION TO ELECTRICITY
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Topic 1: Electrical Theory

Competency 1.1.11: List voltage sources, AC and DC, batteries and natural generation

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

9.2.7 Access prior knowledge to interpret meaning

9.3.8/10.3.7/11.3.5 Use supporting details

English/Language Arts (continued)

10.1.4 Use relevant information

11.2.6 Apply prior knowledge of content to interpret meaning of text

12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

6.3.3 Identify different forms of energy (e.g., chemical, mechanical, heat, sound)

6.3.4 Identify sources of energy (e.g., sun, wind, moving water, nuclear, fossil fuels, food)

9-10.3.5 Identify the reactants and products in a chemical reaction

9-10-3.8 Describe the relationships between kinetic and potential energy in basic transformations (e.g., physical and chemical changes)

11-12.1.4 Explain the relationship between form and function (e.g., atoms and ions, enzymes, aerodynamics)

11-12.1.5 Explain how classification can be based on the relationship between form and function (e.g., polar vs. nonpolar molecules, structure of periodic table, DNA vs. RNA)

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

Standard 1: INTRODUCTION TO ELECTRICITY
Topic 1: Electrical Theory
Competency 1.1.12: List ohms law formulas for current, voltage, resistance and power. Solve math problems utilizing each

English/Language Arts

6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words

6.2.4 Use graphic organizers and summarizing to enhance comprehension

6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension

7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies,

including context clues, to enhance understanding and aid comprehension of the meaning of texts

English/Language Arts (continued)

- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.1.5 Synthesize information in a logical sequence
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- 6.1.9 Use order of operations; i.e., multiplication, division, addition and subtraction, to simplify numeric expressions
- 6.1.10 Multiply and divide decimals
- 6.1.11 Add, subtract, multiply, and divide fractions
- 6.1.12 Express an exponent in standard form
- 6.1.14 Estimate the results of problems involving whole numbers, fractions, and decimals
- 6.3.6 Make predictions based on trends identified in tables and graphs
- 6.4.2 Select an appropriate unit of measure; e.g., What unit do you use to measure a person's height?
- 6.4.3 Convert unit measurements within the same system (metric and standard)
- 6.5.2 Use a variable to represent an unknown quantity
- 7.1.1 Use ratios and proportions to represent relationships
- 7.1.4 Use integers to represent and compare quantities
- 7.1.6 Use order of operations (i.e., parentheses and operations) to simplify numeric expressions
- 7.1.7 Add, subtract, multiply, and divide fractions and terminating decimals
- 7.1.8 Solve real-world problems using integers, fractions, decimals, and percents
- 7.1.9 Estimate the results of problems involving fractions, decimals, and percents
- 7.1.10 Use proportions to solve problems
- 7.4.2 Convert unit measurements within the same system (metric and standard) when solving problems
- 8.1.2 Solve real-world problems involving ration, proportion, and percent
- 8.1.4 Represent large and small numbers using scientific notation
- 8.1.6 Apply the order of operations to simplify numeric expressions and solve problems
- 8.1.7 Add, subtract, multiply, and divide integers
- 8.1.8 Select and use a computational technique (e.g., mental calculation, paper-and-pencil, technology) to solve problems
- 8.1.9 Determine when an estimate is sufficient and an exact answer is needed in problem

situations

8.4.1 Select an appropriate degree of precision when using measurements for calculations

Mathematics (continued)

8.5.3 Apply the order of operations and the commutative, associative, and distributive properties to simplify algebraic expressions

9-10.1.1 Express numbers between one-billionth and one billion in fraction, decimal, and verbal form; express numbers of all magnitudes in scientific notation

9-10.1.5 Use the order of operations and properties of exponents to simplify an algebraic expression

9-10.1.6 Analyze the effects of multiplication, division, raising to a power, and extracting a root on the magnitudes of quantities; e.g., when will the square root of a number be greater than the number itself, or what will happen to the magnitude of a number when you multiply it by a negative number?

9-10.1.7 Apply basic properties of exponents to simplify algebraic expressions; i.e., power of a product, power of a power, products and quotients of powers, zero and negative exponents

9-10.1.8 Apply estimation skills to predict realistic solutions to problems

9-10.1.9 Select and use a computational technique (i.e., mental calculation, paper-and-pencil, or technology) to solve problems involving real numbers

9-10.1.10 Explain the reasonableness of a problem's solution and the process used to obtain it

9-10.4.1 Select appropriate units and scales for problem situations involving measurement

11-12.1.7 Add, subtract, and multiply complex numbers

Science

9-10.6.1 Use appropriate technologies and techniques to solve a problem (e.g., computer-assisted tools, Internet, research skills)

11-12.6.1 Select and use appropriate technologies, tools, and techniques to solve a problem (e.g., computer-assisted tools, Internet, research skills, CBL, graphing calculators)

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

Standard 1: INTRODUCTION TO ELECTRICITY
Topic 2: Electronic Components
Competency 1.2.1: Identify resistor values from color code or other marks and list composition and reasons for different usages

English/Language Arts

6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes,

English/Language Arts (continued)

multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words

6.2.4 Use graphic organizers and summarizing to enhance comprehension

6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension

7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts

7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

9.1.3 Cross-reference information

9.2.7 Access prior knowledge to interpret meaning

9.3.8/10.3.7/11.3.5 Use supporting details

10.1.4 Use relevant information

11.2.3 Analyze details, facts, and concepts from nonfiction genres

11.2.6 Apply prior knowledge of content to interpret meaning of text

11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning

12.2.2 Critique details, facts, and concepts from nonfiction genres

12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing Mathematics standard

Science

9-10.6.1 Use appropriate technologies and techniques to solve a problem (e.g., computer-assisted tools, Internet, research skills)

11-12.1.4 Explain the relationship between form and function (e.g., atoms and ions, enzymes, aerodynamics)

11-12.1.5 Explain how classification can be based on the relationship between form and function (e.g., polar vs. nonpolar molecules, structure of periodic table , DNA vs. RNA)

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

Standard 1: INTRODUCTION TO ELECTRICITY
Topic 2: Electronic Components
Competency 1.2.2: Identify capacitor types; list common usages; methods of varying capacitance and explain the terms charge and coulomb

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.1.3 Cross-reference information
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing Mathematics standard

Science

- 6.3.4 Identify sources of energy (e.g., sun, wind, moving water, nuclear, fossil fuels, food)
- 9-10.3.8 Describe the relationships between kinetic and potential energy in basic transformations (e.g., physical and chemical changes)
- 11-12.1.4 Explain the relationship between form and function (e.g., atoms and ions, enzymes, aerodynamics)
- 11-12.1.5 Explain how classification can be based on the relationship between form and function (e.g., polar vs. nonpolar molecules, structure of periodic table , DNA vs. RNA)

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

Standard 1: INTRODUCTION TO ELECTRICITY
Topic 2: Electronic Components
Competency 1.2.3: Identify inductor types and reasons for various core materials; how diameter and wire size affects the values

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.1.3 Cross-reference information
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- 6.1.9 Use order of operations; i.e., multiplication, division, addition and subtraction, to simplify numeric expressions
- 6.1.10 Multiply and divide decimals
- 6.1.11 Add, subtract, multiply, and divide fractions
- 6.1.12 Express an exponent in standard form

6.1.14 Estimate the results of problems involving whole numbers, fractions, and decimals

6.3.6 Make predictions based on trends identified in tables and graphs

Mathematics (continued)

6.4.2 Select an appropriate unit of measure; e.g., What unit do you use to measure a person's height?

6.4.3 Convert unit measurements within the same system (metric and standard)

6.5.2 Use a variable to represent an unknown quantity

7.1.1 Use ratios and proportions to represent relationships

7.1.4 Use integers to represent and compare quantities

7.1.6 Use order of operations (i.e., parentheses and operations) to simplify numeric expressions

7.1.7 Add, subtract, multiply, and divide fractions and terminating decimals

7.1.8 Solve real-world problems using integers, fractions, decimals, and percents

7.1.9 Estimate the results of problems involving fractions, decimals, and percents

7.1.10 Use proportions to solve problems

7.4.2 Convert unit measurements within the same system (metric and standard) when solving problems

8.1.2 Solve real-world problems involving ration, proportion, and percent

8.1.4 Represent large and small numbers using scientific notation

8.1.6 Apply the order of operations to simplify numeric expressions and solve problems

8.1.7 Add, subtract, multiply, and divide integers

8.1.8 Select and use a computational technique (e.g., mental calculation, paper-and-pencil, technology) to solve problems

8.1.9 Determine when an estimate is sufficient and an exact answer is needed in problem situations

8.4.1 Select an appropriate degree of precision when using measurements for calculations

8.5.3 Apply the order of operations and the commutative, associative, and distributive properties to simplify algebraic expressions

9-10.1.1 Express numbers between one-billionth and one billion in fraction, decimal, and verbal form; express numbers of all magnitudes in scientific notation

9-10.1.5 Use the order of operations and properties of exponents to simplify an algebraic expression

9-10.1.6 Analyze the effects of multiplication, division, raising to a power, and extracting a root on the magnitudes of quantities; e.g., when will the square root of a number be greater than the number itself, or what will happen to the magnitude of a number when you multiply it by a negative number?

9-10.1.7 Apply basic properties of exponents to simplify algebraic expressions; i.e., power of a product, power of a power, products and quotients of powers, zero and negative exponents

9-10.1.8 Apply estimation skills to predict realistic solutions to problems

9-10.1.9 Select and use a computational technique (i.e., mental calculation, paper-and-pencil, or technology) to solve problems involving real numbers

9-10.1.10 Explain the reasonableness of a problem's solution and the process used to obtain it

9-10.4.1 Select appropriate units and scales for problem situations involving measurement

11-12.1.7 Add, subtract, and multiply complex numbers

Science

11-12.1.4 Explain the relationship between form and function (e.g., atoms and ions, enzymes, aerodynamics)

Science (continued)

11-12.1.5 Explain how classification can be based on the relationship between form and function (e.g., polar vs. nonpolar molecules, structure of periodic table , DNA vs. RNA)

11-12.3.13 Explain how magnetic forces relate to electric forces

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

Standard 1: INTRODUCTION TO ELECTRICITY
Topic 2: Electronic Components
Competency 1.2.4: Identify common types of transformers and list uses for each; explain step up/down voltage methods; explain why laminations are used

English/Language Arts

6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words

6.2.4 Use graphic organizers and summarizing to enhance comprehension

6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension

7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts

7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

9.1.3 Cross-reference information

9.2.7 Access prior knowledge to interpret meaning

9.3.8/10.3.7/11.3.5 Use supporting details

10.1.4 Use relevant information

11.2.6 Apply prior knowledge of content to interpret meaning of text

11.2.3 Analyze details, facts, and concepts from nonfiction genres

11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning

- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- 6.1.9 Use order of operations; i.e., multiplication, division, addition and subtraction, to simplify numeric expressions
- 6.1.10 Multiply and divide decimals
- 6.1.11 Add, subtract, multiply, and divide fractions
- 6.1.12 Express an exponent in standard form
- 6.1.14 Estimate the results of problems involving whole numbers, fractions, and decimals
- 6.3.6 Make predictions based on trends identified in tables and graphs
- 6.4.2 Select an appropriate unit of measure; e.g., What unit do you use to measure a person's height?
- 6.4.3 Convert unit measurements within the same system (metric and standard)
- 6.5.2 Use a variable to represent an unknown quantity
- 7.1.1 Use ratios and proportions to represent relationships
- 7.1.4 Use integers to represent and compare quantities
- 7.1.6 Use order of operations (i.e., parentheses and operations) to simplify numeric expressions
- 7.1.7 Add, subtract, multiply, and divide fractions and terminating decimals
- 7.1.8 Solve real-world problems using integers, fractions, decimals, and percents
- 7.1.9 Estimate the results of problems involving fractions, decimals, and percents
- 7.1.10 Use proportions to solve problems
- 7.4.2 Convert unit measurements within the same system (metric and standard) when solving problems
- 8.1.2 Solve real-world problems involving ration, proportion, and percent
- 8.1.4 Represent large and small numbers using scientific notation
- 8.1.6 Apply the order of operations to simplify numeric expressions and solve problems
- 8.1.7 Add, subtract, multiply, and divide integers
- 8.1.8 Select and use a computational technique (e.g., mental calculation, paper-and-pencil, technology) to solve problems
- 8.1.9 Determine when an estimate is sufficient and an exact answer is needed in problem situations
- 8.4.1 Select an appropriate degree of precision when using measurements for calculations
- 8.5.3 Apply the order of operations and the commutative, associative, and distributive properties to simplify algebraic expressions
- 9-10.1.1 Express numbers between one-billionth and one billion in fraction, decimal, and verbal form; express numbers of all magnitudes in scientific notation
- 9-10.1.5 Use the order of operations and properties of exponents to simplify an algebraic expression
- 9-10.1.6 Analyze the effects of multiplication, division, raising to a power, and extracting a root on the magnitudes of quantities; e.g., when will the square root of a number be greater than the number itself, or what will happen to the magnitude of a number when you multiply it by a negative number?
- 9-10.1.7 Apply basic properties of exponents to simplify algebraic expressions; i.e., power of a product, power of a power, products and quotients of powers, zero and negative exponents
- 9-10.1.8 Apply estimation skills to predict realistic solutions to problems

9-10.1.9 Select and use a computational technique (i.e., mental calculation, paper-and-pencil, or technology) to solve problems involving real numbers

Mathematics (continued)

9-10.1.10 Explain the reasonableness of a problem's solution and the process used to obtain it

9-10.4.1 Select appropriate units and scales for problem situations involving measurement

11-12.1.7 Add, subtract, and multiply complex numbers

Science

11-12.1.4 Explain the relationship between form and function (e.g., atoms and ions, enzymes, aerodynamics)

11-12.1.5 Explain how classification can be based on the relationship between form and function (e.g., polar vs. nonpolar molecules, structure of periodic table , DNA vs. RNA)

11-12.3.13 Explain how magnetic forces relate to electric forces

11-12.3.10 Apply the law of conservation of energy to a variety of situations

11-12.6.1 Select and use appropriate technologies, tools, and techniques to solve a problem (e.g., computer-assisted tools, Internet, research skills, CBL, graphing calculators)

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

Standard 1: INTRODUCTION TO ELECTRICITY
Topic 2: Electronic Components
Competency 1.2.5: Identify diodes as to type and common usage, explain common DC and bias voltage ranges

English/Language Arts

6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words

6.2.4 Use graphic organizers and summarizing to enhance comprehension

6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension

7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts

7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference

aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

- 9.1.3 Cross-reference information
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- 11-12.1.4 Explain the relationship between form and function (e.g., atoms and ions, enzymes, aerodynamics)
- 11-12.1.5 Explain how classification can be based on the relationship between form and function (e.g., polar vs. nonpolar molecules, structure of periodic table , DNA vs. RNA)
- 11-12.3.13 Explain how magnetic forces relate to electric forces
- 11-12.3.10 Apply the law of conservation of energy to a variety of situations
- 11-12.6.1 Select and use appropriate technologies, tools, and techniques to solve a problem (e.g., computer-assisted tools, Internet, research skills, CBL, graphing calculators)

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

Standard 1: INTRODUCTION TO ELECTRICITY
Topic 2: Electronic Components
Competency 1.2.6: Identify transistors as to type and usage, such as bipolar, FETs and MOSFETS; explain beta and alpha and provide common DC and bias voltage ranges; list common usage

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning

of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary,

English/Language Arts (continued)

thesaurus, base words

- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.1.3 Cross-reference information
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- 6.1.9 Use order of operations; i.e., multiplication, division, addition and subtraction, to simplify numeric expressions
- 6.1.10 Multiply and divide decimals
- 6.1.11 Add, subtract, multiply, and divide fractions
- 6.1.12 Express an exponent in standard form
- 6.1.14 Estimate the results of problems involving whole numbers, fractions, and decimals
- 6.3.6 Make predictions based on trends identified in tables and graphs
- 6.4.2 Select an appropriate unit of measure; e.g., What unit do you use to measure a person's height?
- 6.4.3 Convert unit measurements within the same system (metric and standard)
- 6.5.2 Use a variable to represent an unknown quantity
- 7.1.1 Use ratios and proportions to represent relationships
- 7.1.4 Use integers to represent and compare quantities
- 7.1.6 Use order of operations (i.e., parentheses and operations) to simplify numeric expressions
- 7.1.7 Add, subtract, multiply, and divide fractions and terminating decimals
- 7.1.8 Solve real-world problems using integers, fractions, decimals, and percents
- 7.1.9 Estimate the results of problems involving fractions, decimals, and percents
- 7.1.10 Use proportions to solve problems
- 7.4.2 Convert unit measurements within the same system (metric and standard) when solving problems
- 8.1.2 Solve real-world problems involving ration, proportion, and percent

- 8.1.4 Represent large and small numbers using scientific notation
- 8.1.6 Apply the order of operations to simplify numeric expressions and solve problems

Mathematics (continued)

- 8.1.7 Add, subtract, multiply, and divide integers
- 8.1.8 Select and use a computational technique (e.g., mental calculation, paper-and-pencil, technology) to solve problems
- 8.1.9 Determine when an estimate is sufficient and an exact answer is needed in problem situations
- 8.4.1 Select an appropriate degree of precision when using measurements for calculations
- 8.5.3 Apply the order of operations and the commutative, associative, and distributive properties to simplify algebraic expressions
- 9-10.1.1 Express numbers between one-billionth and one billion in fraction, decimal, and verbal form; express numbers of all magnitudes in scientific notation
- 9-10.1.5 Use the order of operations and properties of exponents to simplify an algebraic expression
- 9-10.1.6 Analyze the effects of multiplication, division, raising to a power, and extracting a root on the magnitudes of quantities; e.g., when will the square root of a number be greater than the number itself, or what will happen to the magnitude of a number when you multiply it by a negative number?
- 9-10.1.7 Apply basic properties of exponents to simplify algebraic expressions; i.e., power of a product, power of a power, products and quotients of powers, zero and negative exponents
- 9-10.1.8 Apply estimation skills to predict realistic solutions to problems
- 9-10.1.9 Select and use a computational technique (i.e., mental calculation, paper-and-pencil, or technology) to solve problems involving real numbers
- 9-10.1.10 Explain the reasonableness of a problem's solution and the process used to obtain it
- 9-10.4.1 Select appropriate units and scales for problem situations involving measurement
- 11-12.1.7 Add, subtract, and multiply complex numbers

Science

- 9-10.6.1 Use appropriate technologies and techniques to solve a problem (e.g., computer-assisted tools, Internet, research skills)
- 11-12.1.4 Explain the relationship between form and function (e.g., atoms and ions, enzymes, aerodynamics)
- 11-12.1.5 Explain how classification can be based on the relationship between form and function (e.g., polar vs. nonpolar molecules, structure of periodic table, DNA vs. RNA)
- 11-12.3.1 Explain how the structure of an atom, isotope, or ion relates to its properties
- 11-12.6.1 Select and use appropriate technologies, tools, and techniques to solve a problem (e.g., computer-assisted tools, Internet, research skills, CBL, graphing calculators)

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

Standard 1: INTRODUCTION TO ELECTRICITY
Topic 2: Electronic Components
Competency 1.2.7: Identify other semiconductors and explain their uses: Darlington pairs; unijunction transistors and Gunn diodes

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.1.3 Cross-reference information
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- 9-10.6.1 Use appropriate technologies and techniques to solve a problem (e.g., computer-assisted tools, Internet, research skills)
- 11-12.1.4 Explain the relationship between form and function (e.g., atoms and ions, enzymes, aerodynamics)
- 11-12.1.5 Explain how classification can be based on the relationship between form and

function (e.g., polar vs. nonpolar molecules, structure of periodic table , DNA vs. RNA)

Science (continued)

- 11-12.3.1 Explain how the structure of an atom, isotope, or ion relates to its properties
- 11-12.6.1 Select and use appropriate technologies, tools, and techniques to solve a problem (e.g., computer-assisted tools, Internet, research skills, CBL, graphing calculators)

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

Standard 1: INTRODUCTION TO ELECTRICITY
Topic 2: Electronic Components
Competency 1.2.8: Compare thyristors with other semiconductors; identify diacs, triacs and SCRs and explain their operation

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- 9-10.6.1 Use appropriate technologies and techniques to solve a problem (e.g., computer-assisted tools, Internet, research skills)
- 11-12.1.4 Explain the relationship between form and function (e.g., atoms and ions, enzymes, aerodynamics)
- 11-12.1.5 Explain how classification can be based on the relationship between form and function (e.g., polar vs. nonpolar molecules, structure of periodic table , DNA vs. RNA)
- 11-12.3.1 Explain how the structure of an atom, isotope, or ion relates to its properties
- 11-12.6.1 Select and use appropriate technologies, tools, and techniques to solve a problem (e.g., computer-assisted tools, Internet, research skills, CBL, graphing calculators)

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health Standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

Standard 1: INTRODUCTION TO ELECTRICITY
Topic 2: Electronic Components
Competency 1.2.9: Explain zeners diode ratings; describe usage in regulator circuits

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

9.2.7 Access prior knowledge to interpret meaning

9.3.8/10.3.7/11.3.5 Use supporting details

English/Language Arts (continued)

10.1.4 Use relevant information

11.2.3 Analyze details, facts, and concepts from nonfiction genres

11.2.6 Apply prior knowledge of content to interpret meaning of text

11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning

12.2.2 Critique details, facts, and concepts from nonfiction genres

12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

9-10.6.1 Use appropriate technologies and techniques to solve a problem (e.g., computer-assisted tools, Internet, research skills)

11-12.1.4 Explain the relationship between form and function (e.g., atoms and ions, enzymes, aerodynamics)

11-12.1.5 Explain how classification can be based on the relationship between form and function (e.g., polar vs. nonpolar molecules, structure of periodic table , DNA vs. RNA)

11-12.3.1 Explain how the structure of an atom, isotope, or ion relates to its properties

11-12.6.1 Select and use appropriate technologies, tools, and techniques to solve a problem (e.g., computer-assisted tools, Internet, research skills, CBL, graphing calculators)

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

Standard 1: INTRODUCTION TO ELECTRICITY
Topic 2: Electronic Components
Competency 1.2.10: List common optical devices (LEDs, LCDs, etc.) and describe how photovoltaic cells are activated. Draw symbols for photo resistors, photodiodes and phototransistors; list materials from which these devices are made

English/Language Arts

6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning

of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary,

English/Language Arts (continued)

thesaurus, base words

6.2.4 Use graphic organizers and summarizing to enhance comprehension

6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension

7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts

7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

9.2.7 Access prior knowledge to interpret meaning

9.3.8/10.3.7/11.3.5 Use supporting details

10.1.4 Use relevant information

11.2.3 Analyze details, facts, and concepts from nonfiction genres

11.2.6 Apply prior knowledge of content to interpret meaning of text

11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning

12.2.2 Critique details, facts, and concepts from nonfiction genres

12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

9-10.6.1 Use appropriate technologies and techniques to solve a problem (e.g., computer-assisted tools, Internet, research skills)

11-12.1.4 Explain the relationship between form and function (e.g., atoms and ions, enzymes, aerodynamics)

11-12.1.5 Explain how classification can be based on the relationship between form and function (e.g., polar vs. nonpolar molecules, structure of periodic table , DNA vs. RNA)

11-12.3.1 Explain how the structure of an atom, isotope, or ion relates to its properties

11-12.6.1 Select and use appropriate technologies, tools, and techniques to solve a problem (e.g., computer-assisted tools, Internet, research skills, CBL, graphing calculators)

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

Standard 1: INTRODUCTION TO ELECTRICITY
Topic 2: Electronic Components
Competency 1.2.11: Describe MOS, CMOS, FET applications

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.1.3 Cross-reference information
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.1.4 Verify the quality, accuracy, and usefulness of information
- 11.1.5 Synthesize information in a logical sequence
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- 9-10.6.1 Use appropriate technologies and techniques to solve a problem (e.g., computer-assisted tools, Internet, research skills)
- 11-12.1.4 Explain the relationship between form and function (e.g., atoms and ions, enzymes, aerodynamics)
- 11-12.1.5 Explain how classification can be based on the relationship between form and function (e.g., polar vs. nonpolar molecules, structure of periodic table , DNA vs. RNA)
- 11-12.3.1 Explain how the structure of an atom, isotope, or ion relates to its properties

11-12.6.1 Select and use appropriate technologies, tools, and techniques to solve a problem (e.g., computer-assisted tools, Internet, research skills, CBL, graphing calculators)

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 2: CIRCUIT DESIGN AND FABRICATION
Topic 1: Soldering-Desoldering and Tools
Competency 2.1.1: Describe solder safety as it pertains to burns and potential fires or damage to facilities or customer products

English/Language Arts

6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, ‘thesaurus, base words

6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension

7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

9.2.7 Access prior knowledge to interpret meaning

9.3.8/10.3.7/11.3.5 Use supporting details

10.1.4 Use relevant information

11.1.4 Verify the quality, accuracy, and usefulness of information

11.2.3 Analyze details, facts, and concepts from nonfiction genres

11.2.6 Apply prior knowledge of content to interpret meaning of text

12.2.2 Critique details, facts, and concepts from nonfiction genres

12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

8.3.5 Identify when heat can be transferred by conduction, convection, or radiation.

Social Studies

- No existing North Dakota Social Studies standard

Health

- 7-8.2.9 Describe personal risks associated with harmful chemicals and drugs (e.g., addiction, depression, withdrawal, loss of control, driving under the influence, overdose, death)
- 7-8.2.10 Describe ways to reduce or prevent injuries (e.g., water safety, the use of appropriate safety equipment, obeying laws and procedures, understanding basic first aid)
- 9-12.2.7 Describe strategies for enhancing health and safety at home, in the community, and in the workplace (e.g., making an emergency evacuation plan for the home, locating and using an Automated External Defibrillator in the community, identifying proper lifting techniques for heavy objects, CPR/first aid training)
- 9-12.3.4 Evaluate how a physical environment influences the health of individuals and the community (e.g., the application of pesticides and herbicides on agricultural products; environmental issues that affect the water supply and nutritional quality of food)

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 2: CIRCUIT DESIGN AND FABRICATION
Topic 1: Soldering-Desoldering and Tools
Competency 2.1.2: Explain the cause of solder fumes and the effects of lead poisoning

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- 9-10.1.4 Describe the relationship between form and function (e.g., solids, liquids, gases, cell specialization, simple machines, and plate tectonics)

Social Studies

- No existing North Dakota Social Studies standard

Health

- 7-8.2.9 Describe ways to reduce or prevent injuries (e.g., water safety, the use of appropriate safety equipment, obeying laws and procedures, understanding basic first aid)
- 7-8.2.10 Describe personal risks associated with harmful chemicals and drugs (e.g., addiction, depression, withdrawal, loss of control, driving under the influence, overdose, death)
- 9-12.2.8 Describe strategies for enhancing health and safety at home, in the community, and in the workplace (e.g., making an emergency evacuation plan for the home, locating and using an Automated External Defibrillator in the community, identifying proper lifting techniques for heavy objects, CPR/first aid training)
- 9-12.3.4 Evaluate how a physical environment influences the health of individuals and the community (e.g., the application of pesticides and herbicides on agricultural products; environmental issues that affect the water supply and nutritional quality of food)

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 2: CIRCUIT DESIGN AND FABRICATION
Topic 1: Soldering-Desoldering and Tools
Competency 2.1.3: List causes and precautions to prevent or reduce solder splatter

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details

English/Language Arts (continued)

- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- 9-10.1.4 Describe the relationship between form and function (e.g., solids, liquids, gases, cell specialization, simple machines, and plate tectonics)

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 2: CIRCUIT DESIGN AND FABRICATION
Topic 1: Soldering-Desoldering and Tools
Competency 2.1.4: Explain the reasons for flux usage and describe types

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning

9.3.8/10.3.7/11.3.5 Use supporting details

10.1.4 Use relevant information

English/Language Arts (continued)

11.2.3 Analyze details, facts, and concepts from nonfiction genres

11.2.6 Apply prior knowledge of content to interpret meaning of text

12.2.2 Critique details, facts, and concepts from nonfiction genres

12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

9-10.1.4 Describe the relationship between form and function (e.g., solids, liquids, gases, cell specialization, simple machines, and plate tectonics)

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 2: CIRCUIT DESIGN AND FABRICATION

Topic 1: Soldering-Desoldering and Tools

Competency 2.1.5: List types of solder and reasons for choosing each

English/Language Arts

6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words

6.2.4 Use graphic organizers and summarizing to enhance comprehension

6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension

7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts

7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

9.2.7 Access prior knowledge to interpret meaning

9.3.8/10.3.7/11.3.5 Use supporting details

- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres

English/Language Arts (continued)

- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- 9-10.1.4 Describe the relationship between form and function (e.g., solids, liquids, gases, cell specialization, simple machines, and plate tectonics)

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 2: CIRCUIT DESIGN AND FABRICATION
Topic 1: Soldering-Desoldering and Tools
Competency 2.1.6: Explain heat shunts, why and how they are used

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information

- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text

English/Language Arts (continued)

- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- 8.3.5 Identify when heat can be transferred by conduction, convection, or radiation.

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Social Studies standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 2: CIRCUIT DESIGN AND FABRICATION
Topic 1: Soldering-Desoldering and Tools
Competency 2.1.7: Identify cold solder joints and explain causes

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text

- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- 8.3.5 Identify when heat can be transferred by conduction, convection, or radiation.

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 2: CIRCUIT DESIGN AND FABRICATION
Topic 1: Soldering-Desoldering and Tools
Competency 2.1.8: Describe the differences between good and bad mechanical and electrical solder connections

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning

- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- 9-10.1.4 Describe the relationship between form and function (e.g., solids, liquids, gases, cell specialization, simple machines, and plate tectonics)

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 2: CIRCUIT DESIGN AND FABRICATION
Topic 1: Soldering-Desoldering and Tools
Competency 2.1.9: Demonstrate proper care of solder-desolder equipment and aids

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

9-10.1.4 Describe the relationship between form and function (e.g., solids, liquids, gases, cell specialization, simple machines, and plate tectonics)

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 2: CIRCUIT DESIGN AND FABRICATION
Topic 1: Soldering-Desoldering and Tools
Competency 2.1.10: Explain desoldering principles

English/Language Arts

6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words

6.2.4 Use graphic organizers and summarizing to enhance comprehension

6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension

7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts

7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

9.2.7 Access prior knowledge to interpret meaning

9.3.8/10.3.7/11.3.5 Use supporting details

10.1.4 Use relevant information

11.2.3 Analyze details, facts, and concepts from nonfiction genres

11.2.6 Apply prior knowledge of content to interpret meaning of text

11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning

12.2.2 Critique details, facts, and concepts from nonfiction genres

12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

9-10.1.4 Describe the relationship between form and function (e.g., solids, liquids, gases, cell specialization, simple machines, and plate tectonics)

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 2: CIRCUIT DESIGN AND FABRICATION
Topic 1: Soldering-Desoldering and Tools
Competency 2.1.11: Describe various types of desoldering equipment and how it is used

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

9-10.1.4 Describe the relationship between form and function (e.g., solids, liquids, gases, cell specialization, simple machines, and plate tectonics)

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 2: CIRCUIT DESIGN AND FABRICATION
Topic 1: Soldering-Desoldering and Tools
Competency 2.1.12: Demonstrate the use of braid-wick solder removers

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

9-10.1.4 Describe the relationship between form and function (e.g., solids, liquids, gases, cell specialization, simple machines, and plate tectonics)

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 2: CIRCUIT DESIGN AND FABRICATION
Topic 2: Block Diagrams-Schematics Wiring Diagrams
Competency 2.2.1: Draw common electrical/electronic symbols

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.1.3 Cross-reference information
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

7.1.2 Identify the components (e.g., tissues, organs, living and nonliving things) within a system (e.g., body systems, ecosystems)

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 2: CIRCUIT DESIGN AND FABRICATION
Topic 2: Block Diagrams-Schematics Wiring Diagrams
Competency 2.2.2: Explain how block diagrams are used for troubleshooting and maintenance of electronics products

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.1.3 Cross-reference information
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- 6.1.2 Identify systems that are composed of subsystems (e.g., solar system, cell, ecosystems.)
- 7.1.1 Explain how models can be used to illustrate scientific principles (e.g., osmosis, cell division)
- 9-10.1.1 Explain how models can be used to illustrate scientific principles

Social Studies

- 9-12.1.1 Interpret and evaluate various visual representations (e.g. charts, graphs, timelines, graphic organizers, maps, flow charts) of data

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- 8.3.3 Develop troubleshooting strategies to solve technical problems

STANDARD 2: CIRCUIT DESIGN AND FABRICATION
Topic 2: Block Diagrams-Schematics Wiring Diagrams
Competency 2.2.3: Explain the differences between wiring prints, schematics and block diagrams

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.1.3 Cross-reference information
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information

- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text

English/Language Arts (continued)

- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- 6.1.2 Identify systems that are composed of subsystems (e.g., solar system, cell, ecosystems.)
- 7.1.1 Explain how models can be used to illustrate scientific principles (e.g., osmosis, cell division)
- 8.2.2 Use evidence to generate descriptions, explanations, predictions, and models
- 9-10.1.1 Explain how models can be used to illustrate scientific principles
- 11-12.1.2 Identify the structure, organization, and dynamics of components within a system (e.g., cells, tissues, organs, organ systems, reactants and products in chemical equilibrium)

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 2: CIRCUIT DESIGN AND FABRICATION
Topic 2: Block Diagrams-Schematics Wiring Diagrams
Competency 2.2.4: Describe the purpose and use of test points. Indicate their likely placement on schematics

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms,

prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar

English/Language Arts (continued)

words and make sense of text

- 9.1.3 Cross-reference information
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- 6.1.2 Identify systems that are composed of subsystems (e.g., solar system, cell, ecosystems.)
- 7.1.1 Explain how models can be used to illustrate scientific principles (e.g., osmosis, cell division)
- 8.2.2 Use evidence to generate descriptions, explanations, predictions, and models
- 9-10.1.1 Explain how models can be used to illustrate scientific principles

- 11-12.1.2 Identify the structure, organization, and dynamics of components within a system (e.g., cells, tissues, organs, organ systems, reactants and products in chemical equilibrium)

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- 8.3.3 Develop troubleshooting strategies to solve technical problems

STANDARD 2: CIRCUIT DESIGN AND FABRICATION
Topic 2: Block Diagrams-Schematics Wiring Diagrams
Competency 2.2.5: Explain how schematics are used to locate component and wiring failures in electronics products

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.1.3 Cross-reference information
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- 6.1.2 Identify systems that are composed of subsystems (e.g., solar system, cell, ecosystems.)
- 7.1.1 Explain how models can be used to illustrate scientific principles (e.g., osmosis, cell division)
- 8.2.2 Use evidence to generate descriptions, explanations, predictions, and models
- 9-10.1.1 Explain how models can be used to illustrate scientific principles

- 11-12.1.2 Identify the structure, organization, and dynamics of components within a system (e.g., cells, tissues, organs, organ systems, reactants and products in chemical equilibrium)

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

8.3.3 Develop troubleshooting strategies to solve technical problems

STANDARD 2: CIRCUIT DESIGN AND FABRICATION

Topic 2: Block Diagrams-Schematics Wiring Diagrams

Competency 2.2.6: Explain the methods of using flow diagrams/charts
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English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.1.3 Cross-reference information
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

11-12.1.2 Identify the structure, organization, and dynamics of components within a system (e.g., cells, tissues, organs, organ systems, reactants and products in chemical

Social Studies

9-12.1.1 Interpret and evaluate various visual representations (e.g. charts, graphs, timelines,

graphic organizers, maps, flow charts) of data

Health

- No existing North Dakota Health standard

Library/Technology Literacy

8.3.3 Develop troubleshooting strategies to solve technical problems

STANDARD 2: CIRCUIT DESIGN AND FABRICATION

Topic 3: Cabling

Competency 2.3.1: List wire types and construction

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.1.3 Cross-reference information
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- 6.6.1 Identify examples of how technologies have evolved
- 11-12.1.4 Explain the relationship between form and function (e.g., atoms and ions, enzymes, aerodynamics)

Science (contined)

11-12.1.5 Explain how classification can be based on the relationship between form and function (e.g., polar vs. nonpolar molecules, structure of periodic table , DNA vs. RNA)

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 2: CIRCUIT DESIGN AND FABRICATION

Topic 3: Cabling

Competency 2.3.2: List wire gauges used for various purposes

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.1.3 Cross-reference information
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- 11-12.1.4 Explain the relationship between form and function (e.g., atoms and ions, enzymes, aerodynamics)
- 11-12.1.5 Explain how classification can be based on the relationship between form and function (e.g., polar vs. nonpolar molecules, structure of periodic table , DNA vs. RNA)

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 2: CIRCUIT DESIGN AND FABRICATION
Topic 3: Cabling
Competency 2.3.3: Explain construction of coaxial cable and the impedance characteristics

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.1.3 Cross-reference information
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres

11.2.6 Apply prior knowledge of content to interpret meaning of text

English/Language Arts (continued)

11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning

12.2.2 Critique details, facts, and concepts from nonfiction genres

12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

11-12.1.4 Explain the relationship between form and function (e.g., atoms and ions, enzymes, aerodynamics)

11-12.1.5 Explain how classification can be based on the relationship between form and function (e.g., polar vs. nonpolar molecules, structure of periodic table , DNA vs. RNA)

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 2: CIRCUIT DESIGN AND FABRICATION
Topic 3: Cabling
Competency 2.3.4: List common identifications for copper cables, such as #18 and #24, and UTP telephone cable

English/Language Arts

6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words

6.2.4 Use graphic organizers and summarizing to enhance comprehension

6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension

7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts

7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference

aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

English/Language Arts (continued)

- 9.1.3 Cross-reference information
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- 11-12.1.4 Explain the relationship between form and function (e.g., atoms and ions, enzymes, aerodynamics)
- 11-12.1.5 Explain how classification can be based on the relationship between form and function (e.g., polar vs. nonpolar molecules, structure of periodic table , DNA vs. RNA)

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 2: CIRCUIT DESIGN AND FABRICATION

Topic 3: Cabling

Competency 2.3.5: Explain major differences between copper, coaxial and fiber optic cables

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension

English/Language Arts (continued)

- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.1.3 Cross-reference information
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- 11-12.1.4 Explain the relationship between form and function (e.g., atoms and ions, enzymes, aerodynamics)
- 11-12.1.5 Explain how classification can be based on the relationship between form and function (e.g., polar vs. nonpolar molecules, structure of periodic table , DNA vs. RNA)

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 2: CIRCUIT DESIGN AND FABRICATION
Topic 3: Cabling
Competency 2.3.6: Describe impedance and its causes; explain reasons for maintaining a cable's characteristics

Topic 3: Cabling
Competency 2.3.6: Describe impedance and its causes; explain reasons for maintaining a cable's characteristics

Competency 2.3.6: Describe impedance and its causes; explain reasons for maintaining a cable's characteristics

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- 11-12.1.4 Explain the relationship between form and function (e.g., atoms and ions, enzymes, aerodynamics)
- 11-12.1.5 Explain how classification can be based on the relationship between form and function (e.g., polar vs. nonpolar molecules, structure of periodic table , DNA vs. RNA)

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 2: CIRCUIT DESIGN AND FABRICATION

Topic 3: Cabling

Competency 2.3.7: Explain the effects of proper and improper termination

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.1.5 Synthesize information in a logical sequence
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- 11-12.1.4 Explain the relationship between form and function (e.g., atoms and ions, enzymes, aerodynamics)
- 11-12.1.5 Explain how classification can be based on the relationship between form and function (e.g., polar vs. nonpolar molecules, structure of periodic table , DNA vs. RNA)

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 2: CIRCUIT DESIGN AND FABRICATION
Topic 3: Cabling
Competency 2.3.8: Explain the purposes of grounding and common conventions used in electrical and electronics

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.1.5 Synthesize information in a logical sequence
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- 11-12.1.4 Explain the relationship between form and function (e.g., atoms and ions, enzymes,

aerodynamics)

Science (continued)

11-12.1.5 Explain how classification can be based on the relationship between form and function (e.g., polar vs. nonpolar molecules, structure of periodic table , DNA vs. RNA)

Social Studies

- No existing North Dakota Social Studies standard

Health

7-8.2.10 Describe personal risks associated with harmful chemicals and drugs (e.g., addiction, depression, withdrawal, loss of control, driving under the influence, overdose, death)
9-12.2.7 Describe strategies for enhancing health and safety at home, in the community, and in the workplace (e.g., making an emergency evacuation plan for the home, locating and using an Automated External Defibrillator in the community, identifying proper lifting techniques for heavy objects, CPR/first aid training)

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 2: CIRCUIT DESIGN AND FABRICATION
Topic 3: Cabling
Competency 2.3.9: Demonstrate splicing knowledge and ability for coaxial and copper cable; explain two types of fiber splices

English/Language Arts

6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
6.2.4 Use graphic organizers and summarizing to enhance comprehension
6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
9.1.3 Cross-reference information
9.2.7 Access prior knowledge to interpret meaning
9.3.8/10.3.7/11.3.5 Use supporting details
10.1.4 Use relevant information

- 11.1.5 Synthesize information in a logical sequence
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres

English/Language Arts (continued)

- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- 11-12.1.4 Explain the relationship between form and function (e.g., atoms and ions, enzymes, aerodynamics)
- 11-12.1.5 Explain how classification can be based on the relationship between form and function (e.g., polar vs. nonpolar molecules, structure of periodic table , DNA vs. RNA)

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 2: CIRCUIT DESIGN AND FABRICATION
Topic 3: Cabling
Competency 2.3.10: Demonstrate testing methods for coaxial and copper cable; and explain testing methods for fiber, and compare loss measurements and techniques

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts

English/Language Arts (continued)

- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.1.3 Cross-reference information
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.1.5 Synthesize information in a logical sequence
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- 11-12.1.4 Explain the relationship between form and function (e.g., atoms and ions, enzymes, aerodynamics)
- 11-12.1.5 Explain how classification can be based on the relationship between form and function (e.g., polar vs. nonpolar molecules, structure of periodic table , DNA vs. RNA)

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 2: CIRCUIT DESIGN AND FABRICATION
Topic 3: Cabling
Competency 2.3.11: Compare the fittings and connectors used in cabling and list potential defects a technician may encounter

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.1.3 Cross-reference information
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.1.5 Synthesize information in a logical sequence
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- 11-12.1.4 Explain the relationship between form and function (e.g., atoms and ions, enzymes, aerodynamics)
- 11-12.1.5 Explain how classification can be based on the relationship between form and function (e.g., polar vs. nonpolar molecules, structure of periodic table , DNA vs. RNA)

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 2: CIRCUIT DESIGN AND FABRICATION

Topic 3: Cabling

Competency 2.3.12: Describe proper crimping of communications wiring connectors
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English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.1.3 Cross-reference information
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.1.5 Synthesize information in a logical sequence
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- 11-12.1.4 Explain the relationship between form and function (e.g., atoms and ions, enzymes, aerodynamics)
- 11-12.1.5 Explain how classification can be based on the relationship between form and function (e.g., polar vs. nonpolar molecules, structure of periodic table , DNA vs.

RNA)

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 2: CIRCUIT DESIGN AND FABRICATION
Topic 3: Cabling
Competency 2.3.13: Explain how cable prep tools are used and demonstrate proper and improper crimping

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.1.3 Cross-reference information
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.1.5 Synthesize information in a logical sequence
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- 11-12.1.4 Explain the relationship between form and function (e.g., atoms and ions, enzymes, aerodynamics)
- 11-12.1.5 Explain how classification can be based on the relationship between form and function (e.g., polar vs. nonpolar molecules, structure of periodic table , DNA vs. RNA)

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 3: POWER SOURCES
Topic 1: Power Supplies
Competency 3.1.1: Explain shock hazards when servicing power supplies in electronic equipment

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.1.3 Cross-reference information
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance

meaning

12.2.2 Critique details, facts, and concepts from nonfiction genres

English/Language Arts (continued)

12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- No existing North Dakota Science standard

Social Studies

- No existing North Dakota Social Studies standard

Health

7-8.2.10 Describe personal risks associated with harmful chemicals and drugs (e.g., addiction, depression, withdrawal, loss of control, driving under the influence, overdose, death)

9-12.2.7 Describe strategies for enhancing health and safety at home, in the community, and in the workplace (e.g., making an emergency evacuation plan for the home, locating and using an Automated External Defibrillator in the community, identifying proper lifting techniques for heavy objects, CPR/first aid training)

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 3: POWER SOURCES
Topic 1: Power Supplies
Competency 3.1.2: Describe the differences between transformer powered supplies and line connected supplies

English/Language Arts

6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words

6.2.4 Use graphic organizers and summarizing to enhance comprehension

6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension

7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts

7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

- 9.1.3 Cross-reference information
- 9.2.7 Access prior knowledge to interpret meaning

English/Language Arts (continued)

- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- No existing North Dakota Science standard

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 3: POWER SOURCES
Topic 1: Power Supplies
Competency 3.1.3: Describe battery supplies and list common usages; also explain recharging principles

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference

aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

English/Language Arts (continued)

9.2.7 Access prior knowledge to interpret meaning

9.3.8/10.3.7/11.3.5 Use supporting details

10.1.4 Use relevant information

11.1.4 Verify the quality, accuracy, and usefulness of information

11.2.3 Analyze details, facts, and concepts from nonfiction genres

11.2.6 Apply prior knowledge of content to interpret meaning of text

11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning

12.2.2 Critique details, facts, and concepts from nonfiction genres

12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- No existing North Dakota Science standard

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 3: POWER SOURCES
Topic 1: Power Supplies
Competency 3.1.4: Explain the reasons for filtering, describe hum, identify common filter types (pi, t, l, etc.)

English/Language Arts

6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words

6.2.4 Use graphic organizers and summarizing to enhance comprehension

6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension

7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts

English/Language Arts (continued)

- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.1.3 Cross-reference information
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.1.4 Verify the quality, accuracy, and usefulness of information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- No existing North Dakota Science standard

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 3: POWER SOURCES
Topic 1: Power Supplies
Competency 3.1.5: Explain the reasons for power supply regulation and list common components used in regulated supplies

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words

- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension

English/Language Arts (continued)

- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.1.3 Cross-reference information
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.1.4 Verify the quality, accuracy, and usefulness of information
- 11.1.5 Synthesize information in a logical sequence
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- No existing North Dakota Science standard

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 3: POWER SOURCES
Topic 1: Power Supplies
Competency 3.1.6: Explain where fuses and circuit breakers are commonly and electrically located in circuits; approximate sizes for common circuits; house service box common fuses and circuit breaker configuration and precautions for replacement

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.1.3 Cross-reference information
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.1.4 Verify the quality, accuracy, and usefulness of information
- 11.1.5 Synthesize information in a logical sequence
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- No existing North Dakota Science standard

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

8.3.3 Develop troubleshooting strategies to solve technical problems

STANDARD 4: CIRCUIT ANALYSIS
Topic 1: Test Equipment and Measurements
Competency 4.1.1: Describe how volt-ohm-current meters operate

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.1.4 Verify the quality, accuracy, and usefulness of information
- 11.1.5 Synthesize information in a logical sequence
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- 6.1.9 Use order of operations; i.e., multiplication, division, addition and subtraction, to simplify numeric expressions
- 6.1.10 Multiply and divide decimals
- 6.1.11 Add, subtract, multiply, and divide fractions
- 6.1.12 Express an exponent in standard form
- 6.1.14 Estimate the results of problems involving whole numbers, fractions, and decimals
- 6.3.6 Make predictions based on trends identified in tables and graphs
- 6.4.2 Select an appropriate unit of measure; e.g., What unit do you use to measure a person's

height?

6.4.3 Convert unit measurements within the same system (metric and standard)

Mathematics (continued)

6.5.2 Use a variable to represent an unknown quantity

7.1.1 Use ratios and proportions to represent relationships

7.1.4 Use integers to represent and compare quantities

7.1.6 Use order of operations (i.e., parentheses and operations) to simplify numeric expressions

7.1.7 Add, subtract, multiply, and divide fractions and terminating decimals

7.1.8 Solve real-world problems using integers, fractions, decimals, and percents

7.1.9 Estimate the results of problems involving fractions, decimals, and percents

7.1.10 Use proportions to solve problems

7.4.2 Convert unit measurements within the same system (metric and standard) when solving problems

8.1.2 Solve real-world problems involving ration, proportion, and percent

8.1.4 Represent large and small numbers using scientific notation

8.1.6 Apply the order of operations to simplify numeric expressions and solve problems

8.1.7 Add, subtract, multiply, and divide integers

8.1.8 Select and use a computational technique (e.g., mental calculation, paper-and-pencil, technology) to solve problems

8.1.9 Determine when an estimate is sufficient and an exact answer is needed in problem situations

8.4.1 Select an appropriate degree of precision when using measurements for calculations

8.5.3 Apply the order of operations and the commutative, associative, and distributive properties to simplify algebraic expressions

9-10.1.1 Express numbers between one-billionth and one billion in fraction, decimal, and verbal form; express numbers of all magnitudes in scientific notation

9-10.1.5 Use the order of operations and properties of exponents to simplify an algebraic expression

9-10.1.6 Analyze the effects of multiplication, division, raising to a power, and extracting a root on the magnitudes of quantities; e.g., when will the square root of a number be greater than the number itself, or what will happen to the magnitude of a number when you multiply it by a negative number?

9-10.1.7 Apply basic properties of exponents to simplify algebraic expressions; i.e., power of a product, power of a power, products and quotients of powers, zero and negative exponents

9-10.1.8 Apply estimation skills to predict realistic solutions to problems

9-10.1.9 Select and use a computational technique (i.e., mental calculation, paper-and-pencil, or technology) to solve problems involving real numbers

9-10.1.10 Explain the reasonableness of a problem's solution and the process used to obtain it

9-10.4.1 Select appropriate units and scales for problem situations involving measurement

11-12.1.7 Add, subtract, and multiply complex numbers

Science

- No existing North Dakota Science standard

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 4: CIRCUIT ANALYSIS
Topic 1: Test Equipment and Measurements
Competency 4.1.2: Identify meter protection, safety and usage

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 12.2.2 Critique details, facts, and concepts from nonfiction genres

Mathematics

- No existing North Dakota Mathematics standard

Science

- 11-12.2.2 Select and use appropriate instruments, measuring tools, and units of measure to improve scientific investigations

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 4: CIRCUIT ANALYSIS
Topic 1: Test Equipment and Measurements
Competency 4.1.3: Explain care of equipment and test leads

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- No existing North Dakota Science standard

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 4: CIRCUIT ANALYSIS
Topic 1: Test Equipment and Measurements
Competency 4.1.4: List the purposes and types of signal generators

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- No existing North Dakota Science standard

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 4: CIRCUIT ANALYSIS
Topic 1: Test Equipment and Measurements
Competency 4.1.5: Describe meter loading and precautions

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- 6.1.9 Use order of operations; i.e., multiplication, division, addition and subtraction, to simplify numeric expressions
- 6.1.10 Multiply and divide decimals
- 6.1.11 Add, subtract, multiply, and divide fractions
- 6.1.12 Express an exponent in standard form
- 6.1.14 Estimate the results of problems involving whole numbers, fractions, and decimals
- 6.3.6 Make predictions based on trends identified in tables and graphs
- 6.4.2 Select an appropriate unit of measure; e.g., What unit do you use to measure a person's height?
- 6.4.3 Convert unit measurements within the same system (metric and standard)
- 6.5.2 Use a variable to represent an unknown quantity
- 7.1.1 Use ratios and proportions to represent relationships
- 7.1.4 Use integers to represent and compare quantities
- 7.1.6 Use order of operations (i.e., parentheses and operations) to simplify numeric expressions
- 7.1.7 Add, subtract, multiply, and divide fractions and terminating decimals
- 7.1.8 Solve real-world problems using integers, fractions, decimals, and percents

7.1.9 Estimate the results of problems involving fractions, decimals, and percents

7.1.10 Use proportions to solve problems

Mathematics (continued)

7.4.2 Convert unit measurements within the same system (metric and standard) when solving problems

8.1.2 Solve real-world problems involving ration, proportion, and percent

8.1.4 Represent large and small numbers using scientific notation

8.1.6 Apply the order of operations to simplify numeric expressions and solve problems

8.1.7 Add, subtract, multiply, and divide integers

8.1.8 Select and use a computational technique (e.g., mental calculation, paper-and-pencil, technology) to solve problems

8.1.9 Determine when an estimate is sufficient and an exact answer is needed in problem situations

8.4.1 Select an appropriate degree of precision when using measurements for calculations

8.5.3 Apply the order of operations and the commutative, associative, and distributive properties to simplify algebraic expressions

9-10.1.1 Express numbers between one-billionth and one billion in fraction, decimal, and verbal form; express numbers of all magnitudes in scientific notation

9-10.1.5 Use the order of operations and properties of exponents to simplify an algebraic expression

9-10.1.6 Analyze the effects of multiplication, division, raising to a power, and extracting a root on the magnitudes of quantities; e.g., when will the square root of a number be greater than the number itself, or what will happen to the magnitude of a number when you multiply it by a negative number?

9-10.1.7 Apply basic properties of exponents to simplify algebraic expressions; i.e., power of a product, power of a power, products and quotients of powers, zero and negative exponents

9-10.1.8 Apply estimation skills to predict realistic solutions to problems

9-10.1.9 Select and use a computational technique (i.e., mental calculation, paper-and-pencil, or technology) to solve problems involving real numbers

9-10.1.10 Explain the reasonableness of a problem's solution and the process used to obtain it

9-10.4.1 Select appropriate units and scales for problem situations involving measurement

11-12.1.7 Add, subtract, and multiply complex numbers

Science

- No existing North Dakota Science standard

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 4: CIRCUIT ANALYSIS
Topic 1: Test Equipment and Measurements
Competency 4.1.6: Explain what R-C-L substitution equipment is and its purposes; explain ESR Capacitance-measurement equipment

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- No existing North Dakota Science standard

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 4: CIRCUIT ANALYSIS
Topic 1: Test Equipment and Measurements
Competency 4.1.7: List the uses and precautions for logic test probes

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- No existing North Dakota Science standard

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 4: CIRCUIT ANALYSIS
Topic 1: Test Equipment and Measurements
Competency 4.1.8: Explain how logic pulsers are used

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- No existing North Dakota Science standard

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 4: CIRCUIT ANALYSIS
Topic 1: Test Equipment and Measurements
Competency 4.1.9: Describe oscilloscope usage; explain the purposes of each front panel control

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- 6.1.9 Use order of operations; i.e., multiplication, division, addition and subtraction, to simplify numeric expressions
- 6.1.10 Multiply and divide decimals
- 6.1.11 Add, subtract, multiply, and divide fractions
- 6.1.12 Express an exponent in standard form
- 6.1.14 Estimate the results of problems involving whole numbers, fractions, and decimals
- 6.3.6 Make predictions based on trends identified in tables and graphs
- 6.4.2 Select an appropriate unit of measure; e.g., What unit do you use to measure a person's height?
- 6.4.3 Convert unit measurements within the same system (metric and standard)
- 6.5.2 Use a variable to represent an unknown quantity
- 7.1.1 Use ratios and proportions to represent relationships
- 7.1.4 Use integers to represent and compare quantities

- 7.1.6 Use order of operations (i.e., parentheses and operations) to simplify numeric expressions
- 7.1.7 Add, subtract, multiply, and divide fractions and terminating decimals

Mathematics (continued)

- 7.1.8 Solve real-world problems using integers, fractions, decimals, and percents
- 7.1.9 Estimate the results of problems involving fractions, decimals, and percents
- 7.1.10 Use proportions to solve problems
- 7.4.2 Convert unit measurements within the same system (metric and standard) when solving problems
- 8.1.2 Solve real-world problems involving ratio, proportion, and percent
- 8.1.4 Represent large and small numbers using scientific notation
- 8.1.6 Apply the order of operations to simplify numeric expressions and solve problems
- 8.1.7 Add, subtract, multiply, and divide integers
- 8.1.8 Select and use a computational technique (e.g., mental calculation, paper-and-pencil, technology) to solve problems
- 8.1.9 Determine when an estimate is sufficient and an exact answer is needed in problem situations
- 8.4.1 Select an appropriate degree of precision when using measurements for calculations
- 8.5.3 Apply the order of operations and the commutative, associative, and distributive properties to simplify algebraic expressions
- 9-10.1.1 Express numbers between one-billionth and one billion in fraction, decimal, and verbal form; express numbers of all magnitudes in scientific notation
- 9-10.1.5 Use the order of operations and properties of exponents to simplify an algebraic expression
- 9-10.1.6 Analyze the effects of multiplication, division, raising to a power, and extracting a root on the magnitudes of quantities; e.g., when will the square root of a number be greater than the number itself, or what will happen to the magnitude of a number when you multiply it by a negative number?
- 9-10.1.7 Apply basic properties of exponents to simplify algebraic expressions; i.e., power of a product, power of a power, products and quotients of powers, zero and negative exponents
- 9-10.1.8 Apply estimation skills to predict realistic solutions to problems
- 9-10.1.9 Select and use a computational technique (i.e., mental calculation, paper-and-pencil, or technology) to solve problems involving real numbers
- 9-10.1.10 Explain the reasonableness of a problem's solution and the process used to obtain it
- 9-10.4.1 Select appropriate units and scales for problem situations involving measurement
- 11-12.1.7 Add, subtract, and multiply complex numbers

Science

- No existing North Dakota Science standard

Social Studies

- 9-12.1.1 Interpret and evaluate various visual representations (e.g. charts, graphs, timelines, graphic organizers, maps, flow charts) of data

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 4: CIRCUIT ANALYSIS
Topic 1: Test Equipment and Measurements
Competency 4.1.10: Define dummy load; show where and why used

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 11.3.8 Incorporate visual aids (e.g., graphs, tables, and pictures) into written work to enhance meaning
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- No existing North Dakota Science standard

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 4: CIRCUIT ANALYSIS
Topic 1: Test Equipment and Measurements
Competency 4.1.11: Explain reasons for using rheostats, isolation transformers and variacs and why size matters

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- No existing North Dakota Science standard

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 5: SAFETY
Topic 1: Safety Precautions
Competency 5.1.1: Describe the physiological reactions electrical shock causes; list various degrees of current the human body can tolerate

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
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- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- No existing North Dakota Science standard

Social Studies

- No existing North Dakota Social Studies standard

Health

- 7-8.2.9 Describe ways to reduce or prevent injuries (e.g., water safety, the use of appropriate safety equipment, obeying laws and procedures, understanding basic first aid)
- 9-12.2.7 Describe strategies for enhancing health and safety at home, in the community, and in the workplace (e.g., making an emergency evacuation plan for the home, locating and using an Automated External Defibrillator in the community, identifying proper lifting techniques for heavy objects, CPR/first aid training)

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 5: SAFETY
Topic 1: Safety Precautions
Competency 5.1.2: Explain the concept of First Aid and its particular importance to workers in electric and electronics fields; explain precautions for untrained people

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- No existing North Dakota Science standard

Social Studies

- No existing North Dakota Social Studies standard

Health

- 7-8.2.9 Describe ways to reduce or prevent injuries (e.g., water safety, the use of appropriate safety equipment, obeying laws and procedures, understanding basic first aid)
- 9-12.2.7 Describe strategies for enhancing health and safety at home, in the community, and in the workplace (e.g., making an emergency evacuation plan for the home, locating and using an Automated External Defibrillator in the community, identifying proper lifting techniques for heavy objects, CPR/first aid training)

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 5: SAFETY
Topic 1: Safety Precautions
Competency 5.1.3: Explain what the National Electric Code is and describe various rules technicians must abide by

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- No existing North Dakota Science standard

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 5: SAFETY
Topic 1: Safety Precautions
Competency 5.1.4: Describe fusing and circuit breaker rules and reasons for different types of fuses

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- No existing North Dakota Science standard

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 5: SAFETY
Topic 1: Safety Precautions
Competency 5.1.5: Explain static causes and CMOS damage prevention straps, mats and grounding

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- No existing North Dakota Science standard

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 5: SAFETY
Topic 1: Safety Precautions
Competency 5.1.6: List tools hazards that are associated with technician activities in the workplace and in the field

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- No existing North Dakota Science standard

Social Studies

- No existing North Dakota Social Studies standard

Health

- 7-8.2.9 Describe ways to reduce or prevent injuries (e.g., water safety, the use of appropriate safety equipment, obeying laws and procedures, understanding basic first aid)
- 7-8.2.10 Describe personal risks associated with harmful chemicals and drugs (e.g., addiction, depression, withdrawal, loss of control, driving under the influence, overdose, death)
- 9-12.2.7 Describe strategies for enhancing health and safety at home, in the community, and in the workplace (e.g., making an emergency evacuation plan for the home, locating and using an Automated External Defibrillator in the community, identifying proper lifting

techniques for heavy objects, CPR/first aid training)

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 5: SAFETY
Topic 1: Safety Precautions
Competency 5.1.7: Describe lockout and tagging rules for potentially unsafe electrical or mechanical hazards

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- No existing North Dakota Science standard

Social Studies

- No existing North Dakota Social Studies standard

Health

- 7-8.2.10 Describe ways to reduce or prevent injuries (e.g., water safety, the use of appropriate safety equipment, obeying laws and procedures, understanding basic first aid)

Health (continued)

9-12.2.7 Describe strategies for enhancing health and safety at home, in the community, and in the workplace (e.g., making an emergency evacuation plan for the home, locating and using an Automated External Defibrillator in the community, identifying proper lifting techniques for heavy objects, CPR/first aid training)

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 5: SAFETY
Topic 1: Safety Precautions
Competency 5.1.8: Explain eye and ear protection needed by technicians

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- No existing North Dakota Science standard

Social Studies

- No existing North Dakota Social Studies standard

Health

- 7-8.2.9 Describe ways to reduce or prevent injuries (e.g., water safety, the use of appropriate safety equipment, obeying laws and procedures, understanding basic first aid)
- 7-8.2.10 Describe personal risks associated with harmful chemicals and drugs (e.g., addiction, depression, withdrawal, loss of control, driving under the influence, overdose, death)
- 9-12.2.7 Describe strategies for enhancing health and safety at home, in the community, and in the workplace (e.g., making an emergency evacuation plan for the home, locating and using an Automated External Defibrillator in the community, identifying proper lifting techniques for heavy objects, CPR/first aid training)

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 5: SAFETY
Topic 1: Safety Precautions
Competency 5.1.9: List ladder handling and usage and OSHA heights safety rules

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 12.2.2 Critique details, facts, and concepts from nonfiction genres
- 12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- No existing North Dakota Science standard

Social Studies

- No existing North Dakota Social Studies standard

Health

- 7-8.2.9 Describe ways to reduce or prevent injuries (e.g., water safety, the use of appropriate safety equipment, obeying laws and procedures, understanding basic first aid)
- 9-12.2.7 Describe strategies for enhancing health and safety at home, in the community, and in the workplace (e.g., making an emergency evacuation plan for the home, locating and using an Automated External Defibrillator in the community, identifying proper lifting techniques for heavy objects, CPR/first aid training)

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 5: SAFETY
Topic 1: Safety Precautions
Competency 5.1.10: List service vehicle safety concerns such as ladder or transporting security and flying objects, driver screens inside the vehicle

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.2.4 Use graphic organizers and summarizing to enhance comprehension
- 6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension
- 7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts
- 7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 9.2.7 Access prior knowledge to interpret meaning
- 9.3.8/10.3.7/11.3.5 Use supporting details
- 10.1.4 Use relevant information
- 11.2.3 Analyze details, facts, and concepts from nonfiction genres
- 11.2.6 Apply prior knowledge of content to interpret meaning of text
- 12.2.2 Critique details, facts, and concepts from nonfiction genres

12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- No existing North Dakota Science standard

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 5: SAFETY
Topic 1: Safety Precautions
Competency 5.1.11: Describe the types and usage of fire extinguishers

English/Language Arts

6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words

6.2.4 Use graphic organizers and summarizing to enhance comprehension

6.2.5/7.2.4/8.2.2 Use prior knowledge and experiences to aid text comprehension

7.2.2 Use graphic organizers; summarizing; paraphrasing; and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts

7.2.11/8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

9.2.7 Access prior knowledge to interpret meaning

9.3.8/10.3.7/11.3.5 Use supporting details

10.1.4 Use relevant information

11.2.3 Analyze details, facts, and concepts from nonfiction genres

11.2.6 Apply prior knowledge of content to interpret meaning of text

12.2.2 Critique details, facts, and concepts from nonfiction genres

12.2.8 Use technical language/jargon to decipher meaning

Mathematics

- No existing North Dakota Mathematics standard

Science

- No existing North Dakota Science standard

Social Studies

- No existing North Dakota Social Studies standard

Health

- No existing North Dakota Health standard

Library/Technology Literacy

- No existing North Dakota Library/Technology Literacy standard

STANDARD 6: TECHNICAL MATHEMATICS
Topic 1: Formulas and Applications
Competency 6.1.1: State Ohm’s law power, voltage, current and resistance formulas and solve for circuit values

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message

11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions

English/Language Arts (continued)

12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

6.1.9 Use order of operations; i.e., multiplication, division, addition and subtraction, to simplify numeric expressions

6.1.10 Multiply and divide decimals

6.1.12 Express an exponent in standard form

6.1.13 Use problem solving strategies to solve and verify the results of problems

6.1.14 Estimate the results of problems involving whole numbers, fractions, and decimals

6.3.1 Collect and organize data, select and use an appropriate display; i.e., a frequency table, a line and bar graph

6.3.3 Use experiments or simulations to determine probabilities

6.3.6 Make predictions based on trends identified in tables and graphs

6.4.2 Select an appropriate unit of measure; e.g., What unit do you use to measure a person's height?

7.1.1 Use ratios and proportions to represent relationships

7.1.4 Use integers to represent and compare quantities

7.1.6 Use order of operations (i.e., parentheses and operations) to simplify numeric expressions

7.1.8 Solve real-world problems using integers, fractions, decimals, and percents

7.1.9 Estimate the results of problems involving fractions, decimals, and percents

7.1.10 Use proportions to solve problems

7.4.2 Convert unit measurements within the same system (metric and standard) when solving problems

8.1.2 Solve real-world problems involving ration, proportion, and percent

8.1.4 Represent large and small numbers using scientific notation

8.1.6 Apply the order of operations to simplify numeric expressions and solve problems

8.1.7 Add, subtract, multiply, and divide integers

8.1.8 Select and use a computational technique (e.g., mental calculation, paper-and-pencil, technology) to solve problems

8.1.9 Determine when an estimate is sufficient and an exact answer is needed in problem situations

8.4.1 Select an appropriate degree of precision when using measurements for calculations

8.5.3 Apply the order of operations and the commutative, associative, and distributive properties to simplify algebraic expressions

9-10.1.1 Express numbers between one-billionth and one billion in fraction, decimal, and verbal form; express numbers of all magnitudes in scientific notation

9-10.1.6 Analyze the effects of multiplication, division, raising to a power, and extracting a root on the magnitudes of quantities; e.g., when will the square root of a number be greater than the number itself, or what will happen to the magnitude of a number when you multiply it by a negative number?

9-10.1.7 Apply basic properties of exponents to simplify algebraic expressions; i.e., power of a product, power of a power, products and quotients of powers, zero and negative

exponents

9-10.1.8 Apply estimation skills to predict realistic solutions to problems

Mathematics (continued)

9-10.1.9 Select and use a computational technique (i.e., mental calculation, paper-and-pencil, or technology) to solve problems involving real numbers

9-10.1.10 Explain the reasonableness of a problem's solution and the process used to obtain it

9-10.4.1 Select appropriate units and scales for problem situations involving measurement

11-12.1.7 Add, subtract, and multiply complex numbers

Science

6.1.3 Explain the connection between cause and effect in a system

6.2.1 Explain the components of a scientific investigation (e.g., hypothesis, observation, data collection, data interpretation, communication of results, replicable)

6.2.4 Use appropriate tools and techniques to gather and analyze data

6.2.5 Use data from scientific investigations to determine relationships and patterns

6.3.3 Identify different forms of energy (e.g., chemical, mechanical, heat, sound)

6.3.4 Identify sources of energy (e.g., sun, wind, moving water, nuclear, fossil fuels, food)

7.2.1 Communicate the results of scientific investigations using an appropriate format (e.g., journals, lab reports, diagrams, presentations, discussions)

8.2.3 Use basic mathematics and statistics (e.g., operations, mean, median, mode, range, and estimation) to interpret quantitative data

9-10.2.2 Use appropriate safety equipment and precautions during investigations (e.g., goggles, apron, eye wash station)

9-10.2.4 Formulate a testable hypothesis for a simple investigation

9-10.2.7 Maintain clear and accurate records of scientific investigations

9-10.2.8 Analyze data found in tables, charts, and graphs to formulate conclusions

9-10.6.1 Use appropriate technologies and techniques to solve a problem (e.g., computer-assisted tools, Internet, research skills)

11-12.1.3 Explain how a system can be dynamic yet may remain in equilibrium (e.g., balance of forces, Le Chatelier's Principle, acid base systems)

11-12.2.2 Select and use appropriate instruments, measuring tools, and units of measure to improve scientific investigations

11-12.2.5 Use technology and mathematics to improve investigations and communications

11-12.2.6 Analyze data using appropriate strategies (e.g., interpolation, and extrapolation of data, significant figures, dimensional analysis)

11-12.6.1 Analyze data using appropriate strategies (e.g., interpolation, and extrapolation of data, significant figures, dimensional analysis)

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health Standard

Library/Technology Literacy

8.3.3 Develop troubleshooting strategies to solve technical problems

Library/Technology Literacy (continued)

12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 6: TECHNICAL MATHEMATICS
Topic 1: Formulas and Applications
Competency 6.1.2: List other common basic electronic formulas

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- 6.1.9 Use order of operations; i.e., multiplication, division, addition and subtraction, to simplify numeric expressions
- 6.1.10 Multiply and divide decimals

- 6.1.12 Express an exponent in standard form
- 6.1.13 Use problem solving strategies to solve and verify the results of problems
- Mathematics (continued)**
- 6.1.14 Estimate the results of problems involving whole numbers, fractions, and decimals
- 6.2.3 Describe the characteristics of a right triangle
- 6.3.1 Collect and organize data, select and use an appropriate display; i.e., a frequency table, a line and bar graph
- 6.3.3 Use experiments or simulations to determine probabilities
- 6.3.6 Make predictions based on trends identified in tables and graphs
- 6.4.2 Select an appropriate unit of measure; e.g., What unit do you use to measure a person's height?
- 6.4.3 Convert unit measurements within the same system (metric and standard)
- 6.5.1 Identify and describe patterns represented by tables, graphs, and sequences
- 6.5.2 Use a variable to represent an unknown quantity
- 6.5.3 Use representations to solve problems; i.e., tables and numerical sentences
- 6.5.4 Recognize examples of change over time; e.g., growth of a sixth grader from September to May
- 7.1.1 Use ratios and proportions to represent relationships
- 7.1.4 Use integers to represent and compare quantities
- 7.1.6 Use order of operations (i.e., parentheses and operations) to simplify numeric expressions
- 7.1.8 Solve real-world problems using integers, fractions, decimals, and percents
- 7.1.9 Estimate the results of problems involving fractions, decimals, and percents
- 7.1.10 Use proportions to solve problems
- 7.4.2 Convert unit measurements within the same system (metric and standard) when solving problems
- 7.5.1 Create tables and graphs to analyze and describe patterns
- 7.5.4 Use inverse operations and properties of equality to solve one-step equations and inequalities in one variable
- 7.5.6 Graph change over time; e.g., growth, distance, population
- 8.1.2 Solve real-world problems involving ration, proportion, and percent
- 8.1.4 Represent large and small numbers using scientific notation
- 8.1.6 Apply the order of operations to simplify numeric expressions and solve problems
- 8.1.7 Add, subtract, multiply, and divide integers
- 8.1.8 Select and use a computational technique (e.g., mental calculation, paper-and-pencil, technology) to solve problems
- 8.1.9 Determine when an estimate is sufficient and an exact answer is needed in problem situations
- 8.4.1 Select an appropriate degree of precision when using measurements for calculations
- 8.5.3 Apply the order of operations and the commutative, associative, and distributive properties to simplify algebraic expressions
- 8.5.4 Apply inverse operations and the properties of equality to solve multi-step equations and inequalities in one variable
- 8.5.6 Solve problems involving rates; i.e., speed equals distance divided by time (miles per hour)
- 9-10.1.1 Express numbers between one-billionth and one billion in fraction, decimal, and verbal form; express numbers of all magnitudes in scientific notation

Mathematics (continued)

- 9-10.1.6 Analyze the effects of multiplication, division, raising to a power, and extracting a root on the magnitudes of quantities; e.g., when will the square root of a number be greater than the number itself, or what will happen to the magnitude of a number when you multiply it by a negative number?
- 9-10.1.7 Apply basic properties of exponents to simplify algebraic expressions; i.e., power of a product, power of a power, products and quotients of powers, zero and negative exponents
- 9-10.1.8 Apply estimation skills to predict realistic solutions to problems
- 9-10.1.9 Select and use a computational technique (i.e., mental calculation, paper-and-pencil, or technology) to solve problems involving real numbers
- 9-10.1.10 Explain the reasonableness of a problem's solution and the process used to obtain it
- 9-10.2.3 Use trigonometric relationships and the Pythagorean Theorem to determine side lengths and angle measures in right triangles
- 9-10.4.1 Select appropriate units and scales for problem situations involving measurement
- 9-10.5.4 Perform the operations of addition, subtraction, multiplication, and division on algebraic functions; e.g., given $f(x) = 2x$ and $g(x) = 5x - 7$, find $f(x) + g(x)$
- 11-12.1.7 Add, subtract, and multiply complex numbers
- 11-12.5.1 Perform advanced operations (i.e., composition and finding inverses) on algebraic functions

Science

- 6.1.3 Explain the connection between cause and effect in a system
- 6.2.1 Explain the components of a scientific investigation (e.g., hypothesis, observation, data collection, data interpretation, communication of results, replicable)
- 6.2.4 Use appropriate tools and techniques to gather and analyze data
- 6.2.5 Use data from scientific investigations to determine relationships and patterns
- 6.3.3 Identify different forms of energy (e.g., chemical, mechanical, heat, sound)
- 6.3.4 Identify sources of energy (e.g., sun, wind, moving water, nuclear, fossil fuels, food)
- 7.2.1 Communicate the results of scientific investigations using an appropriate format (e.g., journals, lab reports, diagrams, presentations, discussions)
- 8.2.3 Use basic mathematics and statistics (e.g., operations, mean, median, mode, range, and estimation) to interpret quantitative data
- 9-10.2.2 Use appropriate safety equipment and precautions during investigations (e.g., goggles, apron, eye wash station)
- 9-10.2.4 Formulate a testable hypothesis for a simple investigation
- 9-10.2.7 Maintain clear and accurate records of scientific investigations
- 9-10.2.8 Analyze data found in tables, charts, and graphs to formulate conclusions
- 9-10.6.1 Use appropriate technologies and techniques to solve a problem (e.g., computer-assisted tools, Internet, research skills)
- 11-12.1.3 Explain how a system can be dynamic yet may remain in equilibrium (e.g., balance of forces, Le Chatelier's Principle, acid base systems)
- 11-12.2.2 Select and use appropriate instruments, measuring tools, and units of measure to improve scientific investigations

11-12.2.5 Use technology and mathematics to improve investigations and communications

Science (continued)

11-12.2.6 Analyze data using appropriate strategies (e.g., interpolation, and extrapolation of data, significant figures, dimensional analysis)

11-12.6.1 Analyze data using appropriate strategies (e.g., interpolation, and extrapolation of data, significant figures, dimensional analysis)

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 7: ELECTRICAL CIRCUITS
Topic 1: Series and Parallel
Competency 7.1.1: Identify and describe the operation of common DC circuits

English/Language Arts

6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words

6.3.1 Produce informative writing; e.g., research-based report, instructions

7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

7.3.1 Produce research-based writing; e.g., news article, book reports, essay

8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing

8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing

8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology

8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles,

interviews

9.4.5 Use critical listening skills; i.e., reflection

English/Language Arts (continued)

10.4.3 Formulate questions in response to a verbal message

11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions

12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

6.1.9 Use order of operations; i.e., multiplication, division, addition and subtraction, to simplify numeric expressions

6.1.10 Multiply and divide decimals

6.1.12 Express an exponent in standard form

6.1.13 Use problem solving strategies to solve and verify the results of problems

6.1.14 Estimate the results of problems involving whole numbers, fractions, and decimals

6.3.1 Collect and organize data, select and use an appropriate display; i.e., a frequency table, a line and bar graph

6.3.3 Use experiments or simulations to determine probabilities

6.3.6 Make predictions based on trends identified in tables and graphs

6.4.2 Select an appropriate unit of measure; e.g., What unit do you use to measure a person's height?

6.4.3 Convert unit measurements within the same system (metric and standard)

7.1.1 Use ratios and proportions to represent relationships

7.1.4 Use integers to represent and compare quantities

7.1.6 Use order of operations (i.e., parentheses and operations) to simplify numeric expressions

7.1.8 Solve real-world problems using integers, fractions, decimals, and percents

7.1.9 Estimate the results of problems involving fractions, decimals, and percents

7.1.10 Use proportions to solve problems

7.4.2 Convert unit measurements within the same system (metric and standard) when solving problems

8.1.2 Solve real-world problems involving ration, proportion, and percent

8.1.4 Represent large and small numbers using scientific notation

8.1.6 Apply the order of operations to simplify numeric expressions and solve problems

8.1.7 Add, subtract, multiply, and divide integers

8.1.8 Select and use a computational technique (e.g., mental calculation, paper-and-pencil, technology) to solve problems

8.1.9 Determine when an estimate is sufficient and an exact answer is needed in problem situations

8.4.1 Select an appropriate degree of precision when using measurements for calculations

8.5.3 Apply the order of operations and the commutative, associative, and distributive properties to simplify algebraic expressions

9-10.1.1 Express numbers between one-billionth and one billion in fraction, decimal, and verbal form; express numbers of all magnitudes in scientific notation

9-10.1.6 Analyze the effects of multiplication, division, raising to a power, and extracting a root on the magnitudes of quantities; e.g., when will the square root of a number be

greater than the number itself, or what will happen to the magnitude of a number when you multiply it by a negative number?

Mathematics (continued)

- 9-10.1.7 Apply basic properties of exponents to simplify algebraic expressions; i.e., power of a product, power of a power, products and quotients of powers, zero and negative exponents
- 9-10.1.8 Apply estimation skills to predict realistic solutions to problems
- 9-10.1.9 Select and use a computational technique (i.e., mental calculation, paper-and-pencil, or technology) to solve problems involving real numbers
- 9-10.1.10 Explain the reasonableness of a problem's solution and the process used to obtain it
- 9-10.4.1 Select appropriate units and scales for problem situations involving measurement
- 11-12.1.7 Add, subtract, and multiply complex numbers

Science

- 6.1.3 Explain the connection between cause and effect in a system
- 6.2.1 Explain the components of a scientific investigation (e.g., hypothesis, observation, data collection, data interpretation, communication of results, replicable)
- 6.2.4 Use appropriate tools and techniques to gather and analyze data
- 6.2.5 Use data from scientific investigations to determine relationships and patterns
- 6.3.3 Identify different forms of energy (e.g., chemical, mechanical, heat, sound)
- 6.3.4 Identify sources of energy (e.g., sun, wind, moving water, nuclear, fossil fuels, food)
- 7.2.1 Communicate the results of scientific investigations using an appropriate format (e.g., journals, lab reports, diagrams, presentations, discussions)
- 7.3.1 Explain how forms of energy can be transferred. (e.g., photosynthesis, metabolism, battery)
- 8.2.3 Use basic mathematics and statistics (e.g., operations, mean, median, mode, range, and estimation) to interpret quantitative data
- 8.3.5 Identify when heat can be transferred by conduction, convection, or radiation
- 9-10.2.2 Use appropriate safety equipment and precautions during investigations (e.g., goggles, apron, eye wash station)
- 9-10.2.4 Formulate a testable hypothesis for a simple investigation
- 9-10.2.7 Maintain clear and accurate records of scientific investigations
- 9-10.2.8 Analyze data found in tables, charts, and graphs to formulate conclusions
- 9-10.3.10 Describe the differences between series and parallel circuits
- 9-10.6.1 Use appropriate technologies and techniques to solve a problem (e.g., computer-assisted tools, Internet, research skills)
- 11-12.1.3 Explain how a system can be dynamic yet may remain in equilibrium (e.g., balance of forces, Le Chatelier's Principle, acid base systems)
- 11-12.2.2 Select and use appropriate instruments, measuring tools, and units of measure to improve scientific investigations
- 11-12.2.5 Use technology and mathematics to improve investigations and communications
- 11-12.2.6 Analyze data using appropriate strategies (e.g., interpolation, and extrapolation of data, significant figures, dimensional analysis)
- 11-12.2.8 Communicate and defend a scientific argument
- 11-12.6.1 Analyze data using appropriate strategies (e.g., interpolation, and extrapolation of data, significant figures, dimensional analysis)

Social Studies

- 8.1.2 Apply various primary and secondary resources (e.g., historical maps, diaries, speeches, pictures, charts, graphs, diagrams, time lines specific to North Dakota) to acquire, analyze, and evaluate information
- 9-12.1.1 Interpret and evaluate various visual representations (e.g. charts, graphs, timelines, graphic organizers, maps, flow charts) of data

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

- 12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 7: ELECTRICAL CIRCUITS
Topic 1: Series and Parallel
Competency 7.1.2: Identify and describe the operation of common AC circuits

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.4.5 Use critical listening skills; i.e., reflection

10.4.3 Formulate questions in response to a verbal message

English/Language Arts (continued)

11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions

12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

6.1.9 Use order of operations; i.e., multiplication, division, addition and subtraction, to simplify numeric expressions

6.1.10 Multiply and divide decimals

6.1.12 Express an exponent in standard form

6.1.13 Use problem solving strategies to solve and verify the results of problems

6.1.14 Estimate the results of problems involving whole numbers, fractions, and decimals

6.2.3 Describe the characteristics of a right triangle

6.3.1 Collect and organize data, select and use an appropriate display; i.e., a frequency table, a line and bar graph

6.3.3 Use experiments or simulations to determine probabilities

6.3.6 Make predictions based on trends identified in tables and graphs

6.4.2 Select an appropriate unit of measure; e.g., What unit do you use to measure a person's height?

6.4.3 Convert unit measurements within the same system (metric and standard)

6.5.1 Identify and describe patterns represented by tables, graphs, and sequences

6.5.2 Use a variable to represent an unknown quantity

6.5.3 Use representations to solve problems; i.e., tables and numerical sentences

6.5.4 Recognize examples of change over time; e.g., growth of a sixth grader from September to May

7.1.1 Use ratios and proportions to represent relationships

7.1.4 Use integers to represent and compare quantities

7.1.6 Use order of operations (i.e., parentheses and operations) to simplify numeric expressions

7.1.8 Solve real-world problems using integers, fractions, decimals, and percents

7.1.9 Estimate the results of problems involving fractions, decimals, and percents

7.1.10 Use proportions to solve problems

7.4.2 Convert unit measurements within the same system (metric and standard) when solving problems

7.5.1 Create tables and graphs to analyze and describe patterns

7.5.4 Use inverse operations and properties of equality to solve one-step equations and inequalities in one variable

7.5.6 Graph change over time; e.g., growth, distance, population

8.1.2 Solve real-world problems involving ration, proportion, and percent

8.1.4 Represent large and small numbers using scientific notation

8.1.6 Apply the order of operations to simplify numeric expressions and solve problems

8.1.7 Add, subtract, multiply, and divide integers

8.1.8 Select and use a computational technique (e.g., mental calculation, paper-and-pencil, technology) to solve problems

- 8.1.9 Determine when an estimate is sufficient and an exact answer is needed in problem situations

Mathematics (continued)

- 8.4.1 Select an appropriate degree of precision when using measurements for calculations
- 8.5.3 Apply the order of operations and the commutative, associative, and distributive properties to simplify algebraic expressions
- 8.5.4 Apply inverse operations and the properties of equality to solve multi-step equations and inequalities in one variable
- 8.5.6 Solve problems involving rates; i.e., speed equals distance divided by time (miles per hour)
- 9-10.1.1 Express numbers between one-billionth and one billion in fraction, decimal, and verbal form; express numbers of all magnitudes in scientific notation
- 9-10.1.6 Analyze the effects of multiplication, division, raising to a power, and extracting a root on the magnitudes of quantities; e.g., when will the square root of a number be greater than the number itself, or what will happen to the magnitude of a number when you multiply it by a negative number?
- 9-10.1.7 Apply basic properties of exponents to simplify algebraic expressions; i.e., power of a product, power of a power, products and quotients of powers, zero and negative exponents
- 9-10.1.8 Apply estimation skills to predict realistic solutions to problems
- 9-10.1.9 Select and use a computational technique (i.e., mental calculation, paper-and-pencil, or technology) to solve problems involving real numbers
- 9-10.1.10 Explain the reasonableness of a problem's solution and the process used to obtain it
- 9-10.2.3 Use trigonometric relationships and the Pythagorean Theorem to determine side lengths and angle measures in right triangles
- 9-10.4.1 Select appropriate units and scales for problem situations involving measurement
- 9-10.5.4 Perform the operations of addition, subtraction, multiplication, and division on algebraic functions; e.g., given $f(x) = 2x$ and $g(x) = 5x - 7$, find $f(x) + g(x)$
- 11-12.1.7 Add, subtract, and multiply complex numbers
- 11-12.5.1 Perform advanced operations (i.e., composition and finding inverses) on algebraic functions

Science

- 6.1.3 Explain the connection between cause and effect in a system
- 6.2.1 Explain the components of a scientific investigation (e.g., hypothesis, observation, data collection, data interpretation, communication of results, replicable)
- 6.2.4 Use appropriate tools and techniques to gather and analyze data
- 6.2.5 Use data from scientific investigations to determine relationships and patterns
- 6.3.3 Identify different forms of energy (e.g., chemical, mechanical, heat, sound)
- 6.3.4 Identify sources of energy (e.g., sun, wind, moving water, nuclear, fossil fuels, food)
- 7.2.1 Communicate the results of scientific investigations using an appropriate format (e.g., journals, lab reports, diagrams, presentations, discussions)
- 7.3.1 Explain how forms of energy can be transferred. (e.g., photosynthesis, metabolism, battery)
- 8.2.3 Use basic mathematics and statistics (e.g., operations, mean, median, mode, range, and estimation) to interpret quantitative data

8.3.5 Identify when heat can be transferred by conduction, convection, or radiation

Science (continued)

8.3.6 Explain the characteristic properties (e.g., wavelength, frequency) and behaviors (e.g., reflection, refraction) of waves

9-10.2.2 Use appropriate safety equipment and precautions during investigations (e.g., goggles, apron, eye wash station)

9-10.2.4 Formulate a testable hypothesis for a simple investigation

9-10.2.7 Maintain clear and accurate records of scientific investigations

9-10.2.8 Analyze data found in tables, charts, and graphs to formulate conclusions

9-10.3.10 Describe the differences between series and parallel circuits

9-10.6.1 Use appropriate technologies and techniques to solve a problem (e.g., computer-assisted tools, Internet, research skills)

11-12.1.3 Explain how a system can be dynamic yet may remain in equilibrium (e.g., balance of forces, Le Chatelier's Principle, acid base systems)

11-12.2.2 Select and use appropriate instruments, measuring tools, and units of measure to improve scientific investigations

11-12.2.5 Use technology and mathematics to improve investigations and communications

11-12.2.6 Analyze data using appropriate strategies (e.g., interpolation, and extrapolation of data, significant figures, dimensional analysis)

11-12.2.8 Communicate and defend a scientific argument

11-12.6.1 Analyze data using appropriate strategies (e.g., interpolation, and extrapolation of data, significant figures, dimensional analysis)

Social Studies

8.1.2 Apply various primary and secondary resources (e.g., historical maps, diaries, speeches, pictures, charts, graphs, diagrams, time lines specific to North Dakota) to acquire, analyze, and evaluate information

9-12.1.1 Interpret and evaluate various visual representations (e.g. charts, graphs, timelines, graphic organizers, maps, flow charts) of data

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 7: ELECTRICAL CIRCUITS
Topic 1: Series and Parallel
Competency 7.1.3: Explain how R, L, C circuits are used in electronics equipment

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- 6.1.9 Use order of operations; i.e., multiplication, division, addition and subtraction, to simplify numeric expressions
- 6.1.10 Multiply and divide decimals
- 6.1.12 Express an exponent in standard form
- 6.1.13 Use problem solving strategies to solve and verify the results of problems
- 6.1.14 Estimate the results of problems involving whole numbers, fractions, and decimals
- 6.2.3 Describe the characteristics of a right triangle
- 6.3.1 Collect and organize data, select and use an appropriate display; i.e., a frequency table, a line and bar graph

- 6.3.3 Use experiments or simulations to determine probabilities
- 6.3.6 Make predictions based on trends identified in tables and graphs

Mathematics (continued)

- 6.4.2 Select an appropriate unit of measure; e.g., What unit do you use to measure a person's height?
- 6.4.3 Convert unit measurements within the same system (metric and standard)
- 6.5.1 Identify and describe patterns represented by tables, graphs, and sequences
- 6.5.2 Use a variable to represent an unknown quantity
- 6.5.3 Use representations to solve problems; i.e., tables and numerical sentences
- 6.5.4 Recognize examples of change over time; e.g., growth of a sixth grader from September to May
- 7.1.1 Use ratios and proportions to represent relationships
- 7.1.4 Use integers to represent and compare quantities
- 7.1.6 Use order of operations (i.e., parentheses and operations) to simplify numeric expressions
- 7.1.8 Solve real-world problems using integers, fractions, decimals, and percents
- 7.1.9 Estimate the results of problems involving fractions, decimals, and percents
- 7.1.10 Use proportions to solve problems
- 7.4.2 Convert unit measurements within the same system (metric and standard) when solving problems
- 7.5.1 Create tables and graphs to analyze and describe patterns
- 7.5.4 Use inverse operations and properties of equality to solve one-step equations and inequalities in one variable
- 7.5.6 Graph change over time; e.g., growth, distance, population
- 8.1.2 Solve real-world problems involving ration, proportion, and percent
- 8.1.4 Represent large and small numbers using scientific notation
- 8.1.6 Apply the order of operations to simplify numeric expressions and solve problems
- 8.1.7 Add, subtract, multiply, and divide integers
- 8.1.8 Select and use a computational technique (e.g., mental calculation, paper-and-pencil, technology) to solve problems
- 8.1.9 Determine when an estimate is sufficient and an exact answer is needed in problem situations
- 8.4.1 Select an appropriate degree of precision when using measurements for calculations
- 8.5.3 Apply the order of operations and the commutative, associative, and distributive properties to simplify algebraic expressions
- 8.5.4 Apply inverse operations and the properties of equality to solve multi-step equations and inequalities in one variable
- 8.5.6 Solve problems involving rates; i.e., speed equals distance divided by time (miles per hour)
- 9-10.1.1 Express numbers between one-billionth and one billion in fraction, decimal, and verbal form; express numbers of all magnitudes in scientific notation
- 9-10.1.6 Analyze the effects of multiplication, division, raising to a power, and extracting a root on the magnitudes of quantities; e.g., when will the square root of a number be greater than the number itself, or what will happen to the magnitude of a number when you multiply it by a negative number?
- 9-10.1.7 Apply basic properties of exponents to simplify algebraic expressions; i.e., power of a product, power of a power, products and quotients of powers, zero and negative

exponents

9-10.1.8 Apply estimation skills to predict realistic solutions to problems

Mathematics (continued)

9-10.1.9 Select and use a computational technique (i.e., mental calculation, paper-and-pencil, or technology) to solve problems involving real numbers

9-10.1.10 Explain the reasonableness of a problem's solution and the process used to obtain it

9-10.2.3 Use trigonometric relationships and the Pythagorean Theorem to determine side lengths and angle measures in right triangles

9-10.4.1 Select appropriate units and scales for problem situations involving measurement

9-10.5.4 Perform the operations of addition, subtraction, multiplication, and division on algebraic functions; e.g., given $f(x) = 2x$ and $g(x) = 5x - 7$, find $f(x) + g(x)$

11-12.1.7 Add, subtract, and multiply complex numbers

11-12.5.1 Perform advanced operations (i.e., composition and finding inverses) on algebraic functions

Science

9-10.3.10 Describe the differences between series and parallel circuits

Social Studies

8.1.2 Apply various primary and secondary resources (e.g., historical maps, diaries, speeches, pictures, charts, graphs, diagrams, time lines specific to North Dakota) to acquire, analyze, and evaluate information

9-12.1.1 Interpret and evaluate various visual representations (e.g. charts, graphs, timelines, graphic organizers, maps, flow charts) of data

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 7: ELECTRICAL CIRCUITS
Topic 1: Series and Parallel
Competency 7.1.4: Explain the purpose of oscillators

English/Language Arts

6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words

6.3.1 Produce informative writing; e.g., research-based report, instructions

English/Language Arts (continued)

- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- 6.3.5 Explain how vibrations create wavelike disturbances that spread out from the source
- 7.1.3 Identify examples of feedback mechanisms (e.g., hunger, perspiring)
- 8.1.1 Organize changes (e.g., patterns, cycles) that occur sequentially in systems
- 8.3.6 Explain the characteristic properties (e.g., wavelength, frequency) and behaviors (e.g., reflection, refraction) of waves
- 9-10.3.9 Compare and contrast electromagnetic and mechanical waves (i.e. energy, energy transfer, medium)
- 11-12.3.12 Relate wave energy to wavelength and frequency

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 7: ELECTRICAL CIRCUITS
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Topic 1: Series and Parallel

Competency 7.1.5: Show how oscillators and multivibrators are similar and how they differ
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English/Language Arts

6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words

6.3.1 Produce informative writing; e.g., research-based report, instructions

7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

7.3.1 Produce research-based writing; e.g., news article, book reports, essay

8.1.7 Evaluate a research product using a rubric

8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing

8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing

8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology

8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews

9.1.4 Evaluate relevancy of information

9.4.5 Use critical listening skills; i.e., reflection

10.4.3 Formulate questions in response to a verbal message

11.1.1 Research topics independently using appropriate sources

11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions

12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- 6.3.5 Explain how vibrations create wavelike disturbances that spread out from the source
- 7.1.3 Identify examples of feedback mechanisms (e.g., hunger, perspiring)
- 8.1.1 Organize changes (e.g., patterns, cycles) that occur sequentially in systems
- 8.3.6 Explain the characteristic properties (e.g., wavelength, frequency) and behaviors (e.g., reflection, refraction) of waves
- 9-10.3.9 Compare and contrast electromagnetic and mechanical waves (i.e. energy, energy transfer, medium)
- 11-12.3.12 Relate wave energy to wavelength and frequency

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

- 12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 7: ELECTRICAL CIRCUITS
Topic 1: Series and Parallel
Competency 7.1.6: Describe filter circuits, why and how they are used

English/Language Arts

- 6.1.5 Write a research report
- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.1.7 Evaluate a research product using a rubric
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing

English/Language Arts (continued)

- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.1.4 Evaluate relevancy of information
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message
- 11.1.1 Research topics independently using appropriate sources
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- 6.3.5 Explain how vibrations create wavelike disturbances that spread out from the source
- 8.3.6 Explain the characteristic properties (e.g., wavelength, frequency) and behaviors (e.g., reflection, refraction) of waves
- 9-10.3.10 Describe the differences between series and parallel circuits
- 11-12.3.12 Relate wave energy to wavelength and frequency

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

- 12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 8: SYSTEM INTEGRATION AND AMPLIFICATION
Topic 1: Amplifiers
Competency 8.1.1: List common amplifier devices

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- No Existing North Dakota Science standard

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 8: SYSTEM INTEGRATION AND AMPLIFICATION
Topic 1: Amplifiers
Competency 8.1.2: Describe the purpose of each component in an amplifier circuit

English/Language Arts

- 6.1.5 Write a research report
- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.1.7 Evaluate a research product using a rubric
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.1.4 Evaluate relevancy of information
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message
- 11.1.1 Research topics independently using appropriate sources
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- No Existing North Dakota Science Standard

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 8: SYSTEM INTEGRATION AND AMPLIFICATION

Topic 1: Amplifiers

Competency 8.1.3: List the usages and classes of amplifiers
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English/Language Arts

- 6.1.5 Write a research report
- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.1.7 Evaluate a research product using a rubric
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles,

interviews

9.1.4 Evaluate relevancy of information

English/Language Arts (continued)

9.4.5 Use critical listening skills; i.e., reflection

10.4.3 Formulate questions in response to a verbal message

11.1.1 Research topics independently using appropriate sources

11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions

12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- No Existing North Dakota Science Standard

Social Studies

- No Existing North Dakota Social Studies Standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 8: SYSTEM INTEGRATION AND AMPLIFICATION

Topic 1: Amplifiers

Competency 8.1.4: Describe biasing and gain characteristics
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English/Language Arts

6.1.5 Write a research report

6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words

6.3.1 Produce informative writing; e.g., research-based report, instructions

7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

7.3.1 Produce research-based writing; e.g., news article, book reports, essay

8.1.7 Evaluate a research product using a rubric

8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing

English/Language Arts (continued)

8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing

8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology

8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews

9.1.4 Evaluate relevancy of information

9.4.5 Use critical listening skills; i.e., reflection

10.4.3 Formulate questions in response to a verbal message

11.1.1 Research topics independently using appropriate sources

11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions

12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- No Existing North Dakota Science standard

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health Standard

Library/Technology Literacy

12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 8: SYSTEM INTEGRATION AND AMPLIFICATION

Topic 1: Amplifiers

Competency 8.1.5: Explain frequency response of an amplifier circuit and why it is important

English/Language Arts

- 6.1.5 Write a research report
- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.1.7 Evaluate a research product using a rubric
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.1.4 Evaluate relevancy of information
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message
- 11.1.1 Research topics independently using appropriate sources
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- No Existing North Dakota Science standard

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

- 12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 8: SYSTEM INTEGRATION AND AMPLIFICATION
Topic 1: Amplifiers
Competency 8.1.6: Explain the uses of operational amplifiers and how they differ from other amplifiers

English/Language Arts

- 6.1.5 Write a research report
- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.1.7 Evaluate a research product using a rubric
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.1.4 Evaluate relevancy of information
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message

11.1.1 Research topics independently using appropriate sources

English/Language Arts (continued)

11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions

12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- No Existing North Dakota Science standard

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 8: SYSTEM INTEGRATION AND AMPLIFICATION

Topic 1: Amplifiers

Competency 8.1.7: List and explain causes of distortion in amplifiers and list ways to reduce or eliminate it
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English/Language Arts

6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words

6.3.1 Produce informative writing; e.g., research-based report, instructions

7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

7.3.1 Produce research-based writing; e.g., news article, book reports, essay

8.1.7 Evaluate a research product using a rubric

8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing

8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building

strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing

English/Language Arts (continued)

- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- No Existing North Dakota Science standard

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

- 12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 8: SYSTEM INTEGRATION AND AMPLIFICATION

Topic 1: Amplifiers

Competency 8.1.8: Explain how inaccurate measurements can be experienced due to meter or scope loading. List ways to overcome loading problems

English/Language Arts

- 6.1.5 Write a research report
- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary,

thesaurus, base words

6.3.1 Produce informative writing; e.g., research-based report, instructions

English/Language Arts

7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

7.3.1 Produce research-based writing; e.g., news article, book reports, essay

8.1.7 Evaluate a research product using a rubric

8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing

8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing

8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology

8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews

9.1.4 Evaluate relevancy of information

9.4.5 Use critical listening skills; i.e., reflection

10.4.3 Formulate questions in response to a verbal message

11.1.1 Research topics independently using appropriate sources

11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions

12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

6.1.9 Use order of operations; i.e., multiplication, division, addition and subtraction, to simplify numeric expressions

6.1.10 Multiply and divide decimals

6.1.12 Express an exponent in standard form

6.1.13 Use problem solving strategies to solve and verify the results of problems

6.1.14 Estimate the results of problems involving whole numbers, fractions, and decimals

6.2.3 Describe the characteristics of a right triangle

6.3.1 Collect and organize data, select and use an appropriate display; i.e., a frequency table, a line and bar graph

6.3.3 Use experiments or simulations to determine probabilities

6.3.6 Make predictions based on trends identified in tables and graphs

6.4.2 Select an appropriate unit of measure; e.g., What unit do you use to measure a person's height?

6.4.3 Convert unit measurements within the same system (metric and standard)

6.5.1 Identify and describe patterns represented by tables, graphs, and sequences

- 6.5.2 Use a variable to represent an unknown quantity
- 6.5.3 Use representations to solve problems; i.e., tables and numerical sentences

Mathematics (continued)

- 6.5.4 Recognize examples of change over time; e.g., growth of a sixth grader from September to May
- 7.1.1 Use ratios and proportions to represent relationships
- 7.1.4 Use integers to represent and compare quantities
- 7.1.6 Use order of operations (i.e., parentheses and operations) to simplify numeric expressions
- 7.1.8 Solve real-world problems using integers, fractions, decimals, and percents
- 7.1.9 Estimate the results of problems involving fractions, decimals, and percents
- 7.1.10 Use proportions to solve problems
- 7.4.2 Convert unit measurements within the same system (metric and standard) when solving problems
- 7.5.1 Create tables and graphs to analyze and describe patterns
- 7.5.4 Use inverse operations and properties of equality to solve one-step equations and inequalities in one variable
- 7.5.6 Graph change over time; e.g., growth, distance, population
- 8.1.2 Solve real-world problems involving ration, proportion, and percent
- 8.1.4 Represent large and small numbers using scientific notation
- 8.1.6 Apply the order of operations to simplify numeric expressions and solve problems
- 8.1.7 Add, subtract, multiply, and divide integers
- 8.1.8 Select and use a computational technique (e.g., mental calculation, paper-and-pencil, technology) to solve problems
- 8.1.9 Determine when an estimate is sufficient and an exact answer is needed in problem situations
- 8.4.1 Select an appropriate degree of precision when using measurements for calculations
- 8.5.3 Apply the order of operations and the commutative, associative, and distributive properties to simplify algebraic expressions
- 8.5.4 Apply inverse operations and the properties of equality to solve multi-step equations and inequalities in one variable
- 8.5.6 Solve problems involving rates; i.e., speed equals distance divided by time (miles per hour)
- 9-10.1.1 Express numbers between one-billionth and one billion in fraction, decimal, and verbal form; express numbers of all magnitudes in scientific notation
- 9-10.1.6 Analyze the effects of multiplication, division, raising to a power, and extracting a root on the magnitudes of quantities; e.g., when will the square root of a number be greater than the number itself, or what will happen to the magnitude of a number when you multiply it by a negative number?
- 9-10.1.7 Apply basic properties of exponents to simplify algebraic expressions; i.e., power of a product, power of a power, products and quotients of powers, zero and negative exponents
- 9-10.1.8 Apply estimation skills to predict realistic solutions to problems
- 9-10.1.9 Select and use a computational technique (i.e., mental calculation, paper-and-pencil, or technology) to solve problems involving real numbers
- 9-10.1.10 Explain the reasonableness of a problem's solution and the process used to obtain it
- 9-10.2.3 Use trigonometric relationships and the Pythagorean Theorem to determine side

lengths and angle measures in right triangles

9-10.4.1 Select appropriate units and scales for problem situations involving measurement

Mathematics (continued)

9-10.5.4 Perform the operations of addition, subtraction, multiplication, and division on algebraic functions; e.g., given $f(x) = 2x$ and $g(x) = 5x - 7$, find $f(x) + g(x)$

11-12.1.7 Add, subtract, and multiply complex numbers

11-12.5.1 Perform advanced operations (i.e., composition and finding inverses) on algebraic functions

Science

- No Existing North Dakota Science standard

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 8: SYSTEM INTEGRATION AND AMPLIFICATION
Topic 2: Interfacing of Electronic Products
Competency 8.2.1: List input circuit signal levels that may be expected for various common electronics products or test equipment

English/Language Arts

6.1.5 Write a research report

6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words

6.3.1 Produce informative writing; e.g., research-based report, instructions

7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

7.3.1 Produce research-based writing; e.g., news article, book reports, essay

8.1.7 Evaluate a research product using a rubric

8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing

8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing

English/Language Arts (continued)

- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.1.4 Evaluate relevancy of information
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message
- 11.1.1 Research topics independently using appropriate sources
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- 8.1.9 Determine when an estimate is sufficient and an exact answer is needed in problem situations
- 9-10.1.10 Explain the reasonableness of a problem's solution and the process used to obtain it
- 6.4.2 Select an appropriate unit of measure; e.g., What unit do you use to measure a person's height?
- 6.4.3 Convert unit measurements within the same system (metric and standard)
- 7.4.2 Convert unit measurements within the same system (metric and standard) when solving problems
- 8.4.1 Select an appropriate degree of precision when using measurements for calculations

Science

- No Existing North Dakota Science standard

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

- 12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 8: SYSTEM INTEGRATION AND AMPLIFICATION
Topic 2: Interfacing of Electronic Products
Competency 8.2.2: List anticipated signal or voltage levels for output circuits in audio and video equipment

English/Language Arts

- 6.1.5 Write a research report
- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.1.7 Evaluate a research product using a rubric
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.1.4 Evaluate relevancy of information
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message
- 11.1.1 Research topics independently using appropriate sources
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- 8.1.9 Determine when an estimate is sufficient and an exact answer is needed in problem situations
- 9-10.1.10 Explain the reasonableness of a problem's solution and the process used to obtain it
- 6.4.2 Select an appropriate unit of measure; e.g., What unit do you use to measure a person's

height?

6.4.3 Convert unit measurements within the same system (metric and standard)

Mathematics (continued)

7.4.2 Convert unit measurements within the same system (metric and standard) when solving problems

8.4.1 Select an appropriate degree of precision when using measurements for calculations

Science

- No Existing North Dakota Science standard

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 8: SYSTEM INTEGRATION AND AMPLIFICATION

Topic 2: Interfacing of Electronic Products
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Competency 8.2.3: Explain the importance of impedance matching; list causes of mismatches
--

English/Language Arts

6.1.5 Write a research report

6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words

6.3.1 Produce informative writing; e.g., research-based report, instructions

7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

7.3.1 Produce research-based writing; e.g., news article, book reports, essay

8.1.7 Evaluate a research product using a rubric

8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing

8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing

8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make

sense of text

English/Language Arts (continued)

- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.1.4 Evaluate relevancy of information
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message
- 11.1.1 Research topics independently using appropriate sources
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- 8.1.9 Determine when an estimate is sufficient and an exact answer is needed in problem situations
- 9-10.1.10 Explain the reasonableness of a problem's solution and the process used to obtain it
- 6.4.2 Select an appropriate unit of measure; e.g., What unit do you use to measure a person's height?
- 6.4.3 Convert unit measurements within the same system (metric and standard)
- 7.4.2 Convert unit measurements within the same system (metric and standard) when solving problems
- 8.4.1 Select an appropriate degree of precision when using measurements for calculations

Science

- 7.3.1 Explain how forms of energy can be transferred. (e.g., photosynthesis, metabolism, battery)

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

- 12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 8: SYSTEM INTEGRATION AND AMPLIFICATION
Topic 2: Interfacing of Electronic Products
Competency 8.2.4: Explain the purposes of plugs and connectors and why it is necessary to use the proper ones

English/Language Arts

- 6.1.5 Write a research report
- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.1.7 Evaluate a research product using a rubric
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.1.4 Evaluate relevancy of information
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message
- 11.1.1 Research topics independently using appropriate sources
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- 8.1.9 Determine when an estimate is sufficient and an exact answer is needed in problem situations
- 9-10.1.10 Explain the reasonableness of a problem's solution and the process used to obtain it
- 6.4.2 Select an appropriate unit of measure; e.g., What unit do you use to measure a person's

height?

6.4.3 Convert unit measurements within the same system (metric and standard)

Mathematics (continued)

7.4.2 Convert unit measurements within the same system (metric and standard) when solving problems

8.4.1 Select an appropriate degree of precision when using measurements for calculations

Science

- No Existing North Dakota Science standard

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 8: SYSTEM INTEGRATION AND AMPLIFICATION
Topic 2: Interfacing of Electronic Products
Competency 8.2.5: Explain grounding, proper and improper methods, and the results of power source mismatch

English/Language Arts

6.1.5 Write a research report

6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words

6.3.1 Produce informative writing; e.g., research-based report, instructions

7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

7.3.1 Produce research-based writing; e.g., news article, book reports, essay

8.1.7 Evaluate a research product using a rubric

8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing

8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing

8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids –

dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

English/Language Arts (continued)

- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.1.4 Evaluate relevancy of information
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message
- 11.1.1 Research topics independently using appropriate sources
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- 8.1.9 Determine when an estimate is sufficient and an exact answer is needed in problem situations
- 9-10.1.10 Explain the reasonableness of a problem's solution and the process used to obtain it
- 6.4.2 Select an appropriate unit of measure; e.g., What unit do you use to measure a person's height?
- 6.4.3 Convert unit measurements within the same system (metric and standard)
- 7.4.2 Convert unit measurements within the same system (metric and standard) when solving problems
- 8.4.1 Select an appropriate degree of precision when using measurements for calculations

Science

- No Existing North Dakota Science standard

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

- 12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 9: DIGITAL SYSTEMS AND APPLICATIONS
Topic 1: Digital Concepts and Circuitry
Competency 9.1.1: Describe ASCII code

English/Language Arts

- 6.1.5 Write a research report
- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.1.7 Evaluate a research product using a rubric
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.1.4 Evaluate relevancy of information
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message
- 11.1.1 Research topics independently using appropriate sources
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- 8.1.9 Determine when an estimate is sufficient and an exact answer is needed in problem situations
- 9-10.1.10 Explain the reasonableness of a problem's solution and the process used to obtain it
- 6.4.2 Select an appropriate unit of measure; e.g., What unit do you use to measure a person's height?

6.4.3 Convert unit measurements within the same system (metric and standard)

Mathematics (continued)

7.4.2 Convert unit measurements within the same system (metric and standard) when solving problems

8.4.1 Select an appropriate degree of precision when using measurements for calculations

Science

- No Existing North Dakota Science standard

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 9: DIGITAL SYSTEMS AND APPLICATIONS

Topic 1: Digital Concepts and Circuitry
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Competency 9.1.2: Identify each basic digital gate

English/Language Arts

6.1.5 Write a research report

6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words

6.3.1 Produce informative writing; e.g., research-based report, instructions

7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

7.3.1 Produce research-based writing; e.g., news article, book reports, essay

8.1.7 Evaluate a research product using a rubric

8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing

8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing

8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make

sense of text

English/Language Arts (continued)

- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.1.4 Evaluate relevancy of information
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message
- 11.1.1 Research topics independently using appropriate sources
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- 8.1.9 Determine when an estimate is sufficient and an exact answer is needed in problem situations
- 9-10.1.10 Explain the reasonableness of a problem's solution and the process used to obtain it
- 6.4.2 Select an appropriate unit of measure; e.g., What unit do you use to measure a person's height?
- 6.4.3 Convert unit measurements within the same system (metric and standard)
- 7.4.2 Convert unit measurements within the same system (metric and standard) when solving problems
- 8.4.1 Select an appropriate degree of precision when using measurements for calculations

Science

- No Existing North Dakota Science standard

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

- 12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 9: DIGITAL SYSTEMS AND APPLICATIONS
Topic 1: Digital Concepts and Circuitry
Competency 9.1.3: Construct truth tables for common gates

English/Language Arts

- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.1.7 Evaluate a research product using a rubric
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.1.4 Evaluate relevancy of information
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message
- 11.1.1 Research topics independently using appropriate sources
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- 8.1.9 Determine when an estimate is sufficient and an exact answer is needed in problem situations
- 9-10.1.10 Explain the reasonableness of a problem's solution and the process used to obtain it
- 6.4.2 Select an appropriate unit of measure; e.g., What unit do you use to measure a person's height?
- 6.4.3 Convert unit measurements within the same system (metric and standard)

7.4.2 Convert unit measurements within the same system (metric and standard) when solving problems

Mathematics (continued)

8.4.1 Select an appropriate degree of precision when using measurements for calculations

Science

- No Existing North Dakota Science standard

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 9: DIGITAL SYSTEMS AND APPLICATIONS

Topic 1: Digital Concepts and Circuitry
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Competency 9.1.4: Explain how counters operate

English/Language Arts

6.1.5 Write a research report

6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words

6.3.1 Produce informative writing; e.g., research-based report, instructions

7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

7.3.1 Produce research-based writing; e.g., news article, book reports, essay

8.1.7 Evaluate a research product using a rubric

8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing

8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing

8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area

terminology

English/Language Arts (continued)

- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.1.4 Evaluate relevancy of information
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message
- 11.1.1 Research topics independently using appropriate sources
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- No Existing North Dakota Science standard

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

- 12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 9: DIGITAL SYSTEMS AND APPLICATIONS

Topic 1: Digital Concepts and Circuitry
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Competency 9.1.5: Explain the purpose of flip-flops and list common types
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English/Language Arts

- 6.1.5 Write a research report
- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar

words and make sense of text

7.3.1 Produce research-based writing; e.g., news article, book reports, essay

English/Language Arts (continued)

8.1.7 Evaluate a research product using a rubric

8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing

8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing

8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology

8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews

9.1.4 Evaluate relevancy of information

9.4.5 Use critical listening skills; i.e., reflection

10.4.3 Formulate questions in response to a verbal message

11.1.1 Research topics independently using appropriate sources

11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions

12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- No Existing North Dakota Science standard

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 9: DIGITAL SYSTEMS AND APPLICATIONS
Topic 1: Digital Concepts and Circuitry
Competency 9.1.6: Explain the purpose of a digital bus and show how it is connected to various sections of a product

English/Language Arts

- 6.1.5 Write a research report
- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.1.7 Evaluate a research product using a rubric
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.1.4 Evaluate relevancy of information
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message
- 11.1.1 Research topics independently using appropriate sources
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- No Existing North Dakota Science standard

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

- 12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 9: DIGITAL SYSTEMS AND APPLICATIONS
Topic 1: Digital Concepts and Circuitry
Competency 9.1.7: List types of display circuitry and describe how numbers and letters are activated digitally

English/Language Arts

- 6.1.5 Write a research report
- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.1.7 Evaluate a research product using a rubric
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.1.4 Evaluate relevancy of information
- 9.4.5 Use critical listening skills; i.e., reflection

- 10.4.3 Formulate questions in response to a verbal message
- 11.1.1 Research topics independently using appropriate sources

English/Language Arts (continued)

- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- No Existing North Dakota Science standard

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

- 12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 9: DIGITAL SYSTEMS AND APPLICATIONS
Topic 1: Digital Concepts and Circuitry
Competency 9.1.8: Show how pulsers are used for digital signal tracing and how logic probes are used to verify states in digital equipment

English/Language Arts

- 6.1.5 Write a research report
- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.1.7 Evaluate a research product using a rubric
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing

8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing

English/Language Arts (continued)

8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology

8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews

9.1.4 Evaluate relevancy of information

9.4.5 Use critical listening skills; i.e., reflection

10.4.3 Formulate questions in response to a verbal message

11.1.1 Research topics independently using appropriate sources

11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions

12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- No Existing North Dakota Science standard

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 9: DIGITAL SYSTEMS AND APPLICATIONS

Topic 1: Digital Concepts and Circuitry
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Competency 9.1.9: Describe digital clock usage and circuitry

English/Language Arts

6.1.5 Write a research report

6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes,

multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words

English/Language Arts (continued)

- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.1.7 Evaluate a research product using a rubric
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.1.4 Evaluate relevancy of information
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message
- 11.1.1 Research topics independently using appropriate sources
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- No Existing North Dakota Science standard

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

- 12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 9: DIGITAL SYSTEMS AND APPLICATIONS
Topic 1: Digital Concepts and Circuitry
Competency 9.1.10: Describe how microprocessors function and identify the basic components and pinouts

English/Language Arts

- 6.1.5 Write a research report
- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.1.7 Evaluate a research product using a rubric
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.1.4 Evaluate relevancy of information
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message
- 11.1.1 Research topics independently using appropriate sources
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- No existing North Dakota Science standard

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 9: DIGITAL SYSTEMS AND APPLICATIONS
Topic 2: Computer Electronics
Competency 9.2.1: Describe the major sections of a computer

English/Language Arts

- 6.1.5 Write a research report
- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.1.7 Evaluate a research product using a rubric
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.1.4 Evaluate relevancy of information
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message

11.1.1 Research topics independently using appropriate sources

English/Language Arts (continued)

11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions

12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

6.1.2 Identify systems that are composed of subsystems (e.g., solar system, cell, ecosystems.)

7.1.2 Identify the components (e.g., tissues, organs, living and nonliving things) within a system (e.g., body systems, ecosystems)

8.1.1 Organize changes (e.g., patterns, cycles) that occur sequentially in systems

9-10.1.2 Describe the interaction of components within a system (e.g., interactions between living and nonliving components of an ecosystem, interaction between organelles of a cell)

11-12.1.2 Identify the structure, organization, and dynamics of components within a system (e.g., cells, tissues, organs, organ systems, reactants and products in chemical equilibrium)

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 9: DIGITAL SYSTEMS AND APPLICATIONS

Topic 2: Computer Electronics

Competency 9.2.2: Demonstrate how the computer block diagram and flow charts are utilized
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English/Language Arts

6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words

6.3.1 Produce informative writing; e.g., research-based report, instructions

English/Language Arts (continued)

- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.1.7 Evaluate a research product using a rubric
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- 6.1.3 Explain the connection between cause and effect in a system
- 7.1.1 Explain how models can be used to illustrate scientific principles (e.g., osmosis, cell division)
- 7.1.3 Identify examples of feedback mechanisms (e.g., hunger, perspiring)
- 7.1.4 Identify the relationship between form and function (e.g., wings, fins and feet)

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

- 12.3.1 Explain and use appropriate terminology and concepts associated with the media and

technology

STANDARD 9: DIGITAL SYSTEMS AND APPLICATIONS
Topic 2: Computer Electronics
Competency 9.2.3: Describe different types of computer memory and how storage is accomplished

English/Language Arts

- 6.1.5 Write a research report
- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.1.7 Evaluate a research product using a rubric
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.1.4 Evaluate relevancy of information
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message
- 11.1.1 Research topics independently using appropriate sources
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- 6.1.2 Identify systems that are composed of subsystems (e.g., solar system, cell, ecosystems.)

7.1.2 Identify the components (e.g., tissues, organs, living and nonliving things) within a system (e.g., body systems, ecosystems)

Science (continued)

8.1.1 Organize changes (e.g., patterns, cycles) that occur sequentially in systems

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 9: DIGITAL SYSTEMS AND APPLICATIONS

Topic 2: Computer Electronics

Competency 9.2.4: Define the word peripheral and list various types
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English/Language Arts

6.1.5 Write a research report

6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words

6.3.1 Produce informative writing; e.g., research-based report, instructions

7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

7.3.1 Produce research-based writing; e.g., news article, book reports, essay

8.1.7 Evaluate a research product using a rubric

8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing

8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing

8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology

8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews

- 9.1.4 Evaluate relevancy of information
- 9.4.5 Use critical listening skills; i.e., reflection

English/Language Arts (continued)

- 10.4.3 Formulate questions in response to a verbal message
- 11.1.1 Research topics independently using appropriate sources
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- 6.1.2 Identify systems that are composed of subsystems (e.g., solar system, cell, ecosystems.)
- 7.1.2 Identify the components (e.g., tissues, organs, living and nonliving things) within a system (e.g., body systems, ecosystems)

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

- 12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 9: DIGITAL SYSTEMS AND APPLICATIONS
Topic 3: Computer Applications
Competency 9.3.1: Demonstrate knowledge of basic computer operation

English/Language Arts

- 6.1.5 Write a research report
- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay

8.1.7 Evaluate a research product using a rubric

English/Language Arts (continued)

8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing

8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing

8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology

8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews

9.1.4 Evaluate relevancy of information

9.4.5 Use critical listening skills; i.e., reflection

10.4.3 Formulate questions in response to a verbal message

11.1.1 Research topics independently using appropriate sources

11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions

12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

11-12.1.2 Identify the structure, organization, and dynamics of components within a system (e.g., cells, tissues, organs, organ systems, reactants and products in chemical equilibrium)

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 9: DIGITAL SYSTEMS AND APPLICATIONS
Topic 3: Computer Applications
Competency 9.3.2: List ways to backup data and the importance of doing so

English/Language Arts

- 6.1.5 Write a research report
- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.1.7 Evaluate a research product using a rubric
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.1.4 Evaluate relevancy of information
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message
- 11.1.1 Research topics independently using appropriate sources
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- No Existing North Dakota Science standard

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 9: DIGITAL SYSTEMS AND APPLICATIONS
Topic 3: Computer Applications
Competency 9.3.3: Explain the causes of line surges and viruses and protection procedures against each

English/Language Arts

6.1.5 Write a research report

6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words

6.3.1 Produce informative writing; e.g., research-based report, instructions

7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

7.3.1 Produce research-based writing; e.g., news article, book reports, essay

8.1.7 Evaluate a research product using a rubric

8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing

8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing

8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology

8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews

9.1.4 Evaluate relevancy of information

9.4.5 Use critical listening skills; i.e., reflection

10.4.3 Formulate questions in response to a verbal message

11.1.1 Research topics independently using appropriate sources

11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral

interpretations, and group discussions

English/Language Arts (continued)

12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- No Existing North Dakota Science standard

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 9: DIGITAL SYSTEMS AND APPLICATIONS

Topic 3: Computer Applications

Competency 9.3.4: Explain major components of the Internet, how it is accessed and common applications

English/Language Arts

6.1.5 Write a research report

6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words

6.3.1 Produce informative writing; e.g., research-based report, instructions

6.5.6/7.5.5/8.5.6 Define plagiarism and its consequences

7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

7.3.1 Produce research-based writing; e.g., news article, book reports, essay

8.1.7 Evaluate a research product using a rubric

8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing

8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building

strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing

English/Language Arts (continued)

- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 8.5.7 Define copyright
- 9.1.4 Evaluate relevancy of information
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message
- 11.1.1 Research topics independently using appropriate sources
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- No Existing North Dakota Science standard

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

- 12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 9: DIGITAL SYSTEMS AND APPLICATIONS
Topic 3: Computer Applications
Competency 9.3.5: Demonstrate how to download a service or application, data or programs

English/Language Arts

- 6.1.5 Write a research report
- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 6.5.6/7.5.5/8.5.6 Define plagiarism and its consequences
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.1.7 Evaluate a research product using a rubric
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 8.5.7 Define copyright
- 9.1.4 Evaluate relevancy of information
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message
- 11.1.1 Research topics independently using appropriate sources
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- No Existing North Dakota Science standard

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 9: DIGITAL SYSTEMS AND APPLICATIONS
Topic 3: Computer Applications
Competency 9.3.6: Explain how to use the Internet to locate parts and service literature

English/Language Arts

- 6.1.5 Write a research report
- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 6.5.6/7.5.5/8.5.6 Define plagiarism and its consequences
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.1.7 Evaluate a research product using a rubric
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 8.5.7 Define copyright
- 9.1.4 Evaluate relevancy of information

- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message

English/Language Arts (continued)

- 11.1.1 Research topics independently using appropriate sources
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- No Existing North Dakota Science standard

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

- 12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 10: Communications Systems
Topic 1: Audio and Video Systems
Competency 10.1.1: Explain major components of the most common home entertainment products

English/Language Arts

- 6.1.5 Write a research report
- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.1.7 Evaluate a research product using a rubric
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building

strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing

English/Language Arts (continued)

- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.1.4 Evaluate relevancy of information
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message
- 11.1.1 Research topics independently using appropriate sources
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- 6.1.2 Identify systems that are composed of subsystems (e.g., solar system, cell, ecosystems.)
- 7.1.2 Identify the components (e.g., tissues, organs, living and nonliving things) within a system (e.g., body systems, ecosystems)

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

- 12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 10: Communications Systems
Topic 1: Audio and Video Systems
Competency 10.1.2: Describe microphone technology and usage

English/Language Arts

- 6.1.5 Write a research report
- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.1.7 Evaluate a research product using a rubric
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.1.4 Evaluate relevancy of information
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message
- 11.1.1 Research topics independently using appropriate sources
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- 6.1.3 Explain the connection between cause and effect in a system
- 7.3.1 Explain how forms of energy can be transferred. (e.g., photosynthesis, metabolism,

battery)

Science (continued)

- 11-12.1.2 Identify the structure, organization, and dynamics of components within a system (e.g., cells, tissues, organs, organ systems, reactants and products in chemical equilibrium)
- 11-12.3.8 Identify the principles and relationships influencing forces and motion (e.g., gravitational force, vectors, velocity, friction)
- 11-12.3.9 Explain the relationship among thermal energy, temperature, and the motion of particles

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

- 12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 10: Communications Systems
Topic 1: Audio and Video Systems
Competency 10.1.3: Explain speaker construction and precautions

English/Language Arts

- 6.1.5 Write a research report
- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.1.7 Evaluate a research product using a rubric
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids –

dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

English/Language Arts (continued)

- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.1.4 Evaluate relevancy of information
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message
- 11.1.1 Research topics independently using appropriate sources
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- 6.1.3 Explain the connection between cause and effect in a system
- 7.3.1 Explain how forms of energy can be transferred. (e.g., photosynthesis, metabolism, battery)
- 11-12.1.2 Identify the structure, organization, and dynamics of components within a system (e.g., cells, tissues, organs, organ systems, reactants and products in chemical equilibrium)
- 11-12.3.8 Identify the principles and relationships influencing forces and motion (e.g., gravitational force, vectors, velocity, friction)
- 11-12.3.9 Explain the relationship among thermal energy, temperature, and the motion of particles

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

- 12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 10: Communications Systems
Topic 1: Audio and Video Systems
Competency 10.1.4: Describe the differences between good quality and distorted sound and electronic/acoustical reasons for each

English/Language Arts

- 6.1.5 Write a research report
- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.1.7 Evaluate a research product using a rubric
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.1.4 Evaluate relevancy of information
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message
- 11.1.1 Research topics independently using appropriate sources
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- 9-10.2.8 Analyze data found in tables, charts, and graphs to formulate conclusions

11-12.2.6 Analyze data using appropriate strategies (e.g., interpolation, and extrapolation of data, significant figures, dimensional analysis)

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 10: Communications Systems
Topic 1: Audio and Video Systems
Competency 10.1.5: Explain how signals may conflict and the symptoms the conflict may produce

English/Language Arts

- 6.1.5 Write a research report
- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.1.7 Evaluate a research product using a rubric
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews

- 9.1.4 Evaluate relevancy of information
- 9.4.5 Use critical listening skills; i.e., reflection

English/Language Arts (continued)

- 10.4.3 Formulate questions in response to a verbal message
- 11.1.1 Research topics independently using appropriate sources
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- 6.1.3 Explain the connection between cause and effect in a system
- 6.3.5 Explain how vibrations create wavelike disturbances that spread out from the source
- 8.3.6 Explain the characteristic properties (e.g., wavelength, frequency) and behaviors (e.g., reflection, refraction) of waves

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

- 12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 10: Communications Systems
Topic 1: Audio and Video Systems
Competency 10.1.6: Explain how to isolate troubles between discrete equipment units

English/Language Arts

- 6.1.5 Write a research report
- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

7.3.1 Produce research-based writing; e.g., news article, book reports, essay

8.1.7 Evaluate a research product using a rubric

English/Language Arts (continued)

8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing

8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing

8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology

8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews

9.1.4 Evaluate relevancy of information

9.4.5 Use critical listening skills; i.e., reflection

10.4.3 Formulate questions in response to a verbal message

11.1.1 Research topics independently using appropriate sources

11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions

12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

6.1.3 Explain the connection between cause and effect in a system

6.2.4 Use appropriate tools and techniques to gather and analyze data

6.3.5 Explain how vibrations create wavelike disturbances that spread out from the source

8.3.6 Explain the characteristic properties (e.g., wavelength, frequency) and behaviors (e.g., reflection, refraction) of waves

9-10.2.6 Design and conduct a guided investigation

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 10: Communications Systems
Topic 2: Optical Electronics
Competency 10.2.1: List common electronics display devices

English/Language Arts

- 6.1.5 Write a research report
- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.1.7 Evaluate a research product using a rubric
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.1.4 Evaluate relevancy of information
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message
- 11.1.1 Research topics independently using appropriate sources
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- 6.1.2 Identify systems that are composed of subsystems (e.g., solar system, cell, ecosystems.)
- 7.1.2 Identify the components (e.g., tissues, organs, living and nonliving things) within a

system (e.g., body systems, ecosystems)

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 10: Communications Systems
Topic 2: Optical Electronics
Competency 10.2.2: Explain how LCD displays operate, their advantages and disadvantages

English/Language Arts

- 6.1.5 Write a research report
- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.1.7 Evaluate a research product using a rubric
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.1.4 Evaluate relevancy of information
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message

11.1.1 Research topics independently using appropriate sources

English/Language Arts (continued)

11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions

12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

6.1.2 Identify systems that are composed of subsystems (e.g., solar system, cell, ecosystems.)

7.1.2 Identify the components (e.g., tissues, organs, living and nonliving things) within a system (e.g., body systems, ecosystems)

11-12.3.11 Explain how energy is related to physical changes of matter (e.g., phase changes, temperature changes)

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 10: Communications Systems
Topic 2: Optical Electronics
Competency 10.2.3: Describe how LED remote hand units work

English/Language Arts

6.1.5 Write a research report

6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words

6.3.1 Produce informative writing; e.g., research-based report, instructions

7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

7.3.1 Produce research-based writing; e.g., news article, book reports, essay

8.1.7 Evaluate a research product using a rubric

English/Language Arts (continued)

- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.1.4 Evaluate relevancy of information
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message
- 11.1.1 Research topics independently using appropriate sources
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- 11-12.3.12 Relate wave energy to wavelength and frequency

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

- 12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 10: Communications Systems
Topic 2: Optical Electronics
Competency 10.2.4: Explain why and list some locations or circuits in which opto isolators are used

English/Language Arts

- 6.1.5 Write a research report
- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.1.7 Evaluate a research product using a rubric
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.1.4 Evaluate relevancy of information
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message
- 11.1.1 Research topics independently using appropriate sources
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- 6.1.2 Identify systems that are composed of subsystems (e.g., solar system, cell, ecosystems.)

7.1.2 Identify the components (e.g., tissues, organs, living and nonliving things) within a system (e.g., body systems, ecosystems)

Science (continued)

11-12.3.12 Relate wave energy to wavelength and frequency

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 10: Communications Systems
Topic 2: Optical Electronics
Competency 10.2.5: List uses for light activated controls and how photo devices are incorporated

English/Language Arts

- 6.1.5 Write a research report
- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.1.7 Evaluate a research product using a rubric
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles,

interviews

9.1.4 Evaluate relevancy of information

English/Language Arts (continued)

9.4.5 Use critical listening skills; i.e., reflection

10.4.3 Formulate questions in response to a verbal message

11.1.1 Research topics independently using appropriate sources

11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions

12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

6.1.2 Identify systems that are composed of subsystems (e.g., solar system, cell, ecosystems.)

6.1.3 Explain the connection between cause and effect in a system

7.1.2 Identify the components (e.g., tissues, organs, living and nonliving things) within a system (e.g., body systems, ecosystems)

11-12.3.12 Identify the basic organization of the periodic table (e.g., elements are listed according to the number of protons [atomic number]; repeating patterns of physical and chemical properties)

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 10: Communications Systems
Topic 3: Telecommunications Basic
Competency 10.3.1: Describe major types of two-way radio communications (avionics, land mobile and maritime, etc.)

English/Language Arts

6.1.5 Write a research report

6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words

6.3.1 Produce informative writing; e.g., research-based report, instructions

English/Language Arts (continued)

- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.1.7 Evaluate a research product using a rubric
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.1.4 Evaluate relevancy of information
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message
- 11.1.1 Research topics independently using appropriate sources
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- 6.1.2 Identify systems that are composed of subsystems (e.g., solar system, cell, ecosystems.)
- 7.1.2 Identify the components (e.g., tissues, organs, living and nonliving things) within a system (e.g., body systems, ecosystems)

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

- 12.3.1 Explain and use appropriate terminology and concepts associated with the media and

technology

STANDARD 11: LEADERSHIP
Topic 1: Technician Work Procedures
Competency 11.1.1: Explain major invoice and billing concepts for service businesses

English/Language Arts

- 6.1.5 Write a research report
- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.1.7 Evaluate a research product using a rubric
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.1.4 Evaluate relevancy of information
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message
- 11.1.1 Research topics independently using appropriate sources
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- No Existing North Dakota Science standard

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

- 12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 11: LEADERSHIP
Topic 1: Technician Work Procedures
Competency 11.1.2: Describe ways to procure service literature

English/Language Arts

- 6.1.5 Write a research report
- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.1.7 Evaluate a research product using a rubric
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.1.4 Evaluate relevancy of information
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message
- 11.1.1 Research topics independently using appropriate sources
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral

interpretations, and group discussions

English/Language Arts (continued)

12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- No Existing North Dakota Science standard

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 11: LEADERSHIP
Topic 1: Technician Work Procedures
Competency 11.1.3: Demonstrate location/cross referencing of parts and product in catalogs

English/Language Arts

6.1.5 Write a research report

6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words

6.3.1 Produce informative writing; e.g., research-based report, instructions

6.5.6/7.5.5/8.5.6 Define plagiarism and its consequences

7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text

7.3.1 Produce research-based writing; e.g., news article, book reports, essay

8.1.7 Evaluate a research product using a rubric

8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing

8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building

strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing

English/Language Arts (continued)

- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 8.5.7 Define copyright
- 9.1.4 Evaluate relevancy of information
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message
- 11.1.1 Research topics independently using appropriate sources
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- No Existing North Dakota Science standard

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

- 12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 11: LEADERSHIP
Topic 1: Technician Work Procedures
Competency 11.1.4: Explain the purposes and requirements for proper record keeping

English/Language Arts

- 6.1.5 Write a research report
- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.1.7 Evaluate a research product using a rubric
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.1.4 Evaluate relevancy of information
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message
- 11.1.1 Research topics independently using appropriate sources
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral interpretations, and group discussions
- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- 9-10.2.7 Maintain clear and accurate records of scientific investigations

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

- 12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 11: LEADERSHIP
Topic 1: Technician Work Procedures
Competency 11.1.5: Explain estimate concepts for service work

English/Language Arts

- 6.1.5 Write a research report
- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.1.7 Evaluate a research product using a rubric
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
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- 9.1.4 Evaluate relevancy of information
- 9.4.5 Use critical listening skills; i.e., reflection
- 10.4.3 Formulate questions in response to a verbal message
- 11.1.1 Research topics independently using appropriate sources
- 11.4.2 Adapt to a variety of speaking and listening situations such as formal presentations, oral

interpretations, and group discussions

English/Language Arts (continued)

12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- No Existing North Dakota Science standard

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology

STANDARD 11: LEADERSHIP
Topic 1: Technician Work Procedures
Competency 11.1.6: Describe field technician work procedures that may differ from in-shop routines

English/Language Arts

- 6.1.5 Write a research report
- 6.2.3 Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, word reference aids – dictionary, glossary, thesaurus, base words
- 6.3.1 Produce informative writing; e.g., research-based report, instructions
- 7.2.11 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 7.3.1 Produce research-based writing; e.g., news article, book reports, essay
- 8.1.7 Evaluate a research product using a rubric
- 8.2.2 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing
- 8.2.3 Use a variety of strategies to construct meaning from text; e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, and discussing

English/Language Arts (continued)

- 8.2.9 Use vocabulary building skills and strategies; e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus to determine the meaning of unfamiliar words and make sense of text
- 8.2.10 Build vocabulary; e.g., Greek and Latin roots, dictionary information, content area terminology
- 8.3.1 Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews
- 9.1.4 Evaluate relevancy of information
- 9.4.5 Use critical listening skills; i.e., reflection
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- 12.4.4 Use critical listening responses, such as refutation and commentary, to critique the accuracy of messages

Mathematics

- No Existing North Dakota Mathematics standard

Science

- No Existing North Dakota Science standard

Social Studies

- No Existing North Dakota Social Studies standard

Health

- No Existing North Dakota Health standard

Library/Technology Literacy

- 12.3.1 Explain and use appropriate terminology and concepts associated with the media and technology