

Resource Managers get necessary supplies and materials for the team and make sure that the team has cleaned up its area at the end of the day. They also manage the non-material resources for the team, seeking input from each person and then calling the teacher over to ask a team question.

Typically, a teacher could expect to hear a resource manager asking:

"Does anyone have an idea?"

"Who can answer that question? Should I call the teacher?"

"What supplies do we need for this activity?"

Facilitators help their teams get started by having someone in the team read the task aloud. They make sure each person understands the task and that the team helps everyone know how to get started. Before anyone moves on, the facilitator asks to make sure each team member understands the team's answer. Typically, a teacher could expect to hear a facilitator asking:

"Who wants to read?"

"Does anyone know how to get started?"

"What does the first question mean?"

"I'm not sure - What are we supposed to do?"

"Do we all agree?"

"I'm not sure I get it yet - can someone explain?"

Recorder/Reporters share the team's results with the class (as appropriate) and serve as a liaison with the teacher when s/he has additional information to share with the class and calls for a "huddle" with all of the recorder/reporters. In some activities, a recorder/reporter may make sure that each team member understands what information s/he needs to record personally. Recorder/reporters may also take responsibility for organizing their team members' contributions as they prepare presentations. Typically, a teacher could expect to hear a recorder/reporter asking:

"Does everyone understand what to write down?"

"How should we show our answer on this poster?"

"Can we show this in a different way?"

"What does each person want to explain in the presentation?"

The **Task Manager** keeps the team focused on the assignment of the day. He or she works to keep the team discussing the math at hand and monitors if anyone is talking outside of her/his team. Additionally, a task manager helps the team focus on articulating the reasons for the math statements they make. Typically, a teacher could expect to hear a task manager saying:

"Ok, let's get back to work!"

"Let's keep working."

"What does the next question say?"

"Explain how you know that."

"Can you prove that?"

"Tell me why!"

No talking outside your team.

Focusing students on working with their team of four helps them to see each other as resources and to find their own way of solving a problem. It helps to prevent any student from being excluded from conversation by making students look to the others in their team rather than friends in other parts of the classroom. It also minimizes cross-classroom conversations that disrupt the learning environment. Responsibility for monitoring this can be assigned to the task manager, helping to free the teacher to address questions from teams.

Discuss questions with your team before calling the teacher over.

This can be reinforced by how the teacher responds to questions from a team. This norm should not imply that the teacher does not answer questions, but instead that the other members of the team are a student's first resource.

While this can be as difficult for the teacher as for the student, you must develop the habit of asking, "*Is this a team question?*" or "*Does everyone in the study team want the question answered?*"

This norm will help students work on answering their own questions.

Within your team, keep your conversation on math.

This norm reminds students that their conversations in study teams have an intellectual, rather than social, purpose.

Explain and justify your ideas; give statements and reasons.

This norm links directly to one of the learning themes of the course and underscores the expectation that there are multiple valid ways of solving different problems.

You must try to help anyone in your study team who asks.

While this is one of the more difficult ideas for competitive students to accept, it is critical to effective team functioning. Over time, students will begin to see that explaining something to someone else is one of the best ways to assure that they understand the idea themselves.

Explaining is also a means of deepening understanding and increasing long-term retention.

Helping your teammate does not mean giving answers. Help by giving hints and asking good questions.

This helps to set a tone of community support rather than individual competition and challenges students to help a teammate understand and discover for themselves rather than simply having an answer to write down.

No one alone is as smart as all of us together. Do not leave anyone behind or let anyone work ahead. Your team is not done until everyone is done.

Again, this norm emphasizes that the process is just as important as the answer and that understanding others' approaches improves an individual's understanding.

**Clear off tables (or desks)
before getting to work so you
can see everyone's paper.**

This emphasizes the importance of creating an uncluttered space to share ideas and converse openly about the mathematics.

**You must use study team
voices.**

The volume of students' voices should remain within the hearing range of their study team only. You will need to develop signals to indicate the end of team discussion, such as turning the lights out, clapping, ringing a bell, or raising a hand.

