

Team Support Guidebook

Using Study Teams for Effective Learning

Study team interaction is an integral part of the learning process in the CPM curriculum. The daily activities in this course depend on students working and having discussions in teams to make sense of concepts. The teacher has an active and important role in supporting these interactions and encouraging students' thinking. Primarily, the teacher's responsibility is to ask good questions that stimulate student thinking and develop self-sufficient learners. This section describes the value of student interactions in study teams and offers suggestions for creating and maintaining a learning environment that supports effective study teams.

Purpose of the Study Team Structure: **What are the advantages of having students work in study teams?**

The CPM curriculum is guided by the philosophy that students need to be active participants as they develop their own mathematical understanding. The study team structure—students working in teams of two or four—creates a setting in which students are continuously in the presence of others with whom they can discuss, share ideas, and articulate their thinking. In study teams, students refine their ideas, questions, and approaches in the security of a few classmates, where it may be easier to take risks – especially asking questions – than in a large class setting. Students consistently communicate with teammates who may see things differently, allowing them to discover new connections between ideas and encouraging them to justify their ideas to their peers.

In study teams, students are empowered to see themselves as mathematical thinkers. They recognize their own strengths and those of their peers as they investigate, build a personal understanding of mathematical concepts, and apply their learning to challenging problems.

Several methods of investigation and justification weave through this course. Classwork is intentionally written to be challenging, and thus assumes that students will have peer and teacher support. Lessons are not designed to have students working alone. Lessons often require students to solve problems in multiple ways so that they see the benefit of other strategies and ways of making sense of the problems. Students are encouraged to formulate mathematical questions, structure investigations, and justify their findings. Each of these processes is more fully realized as students converse about the problems and their approaches to solving them. Students' discovery of different ways to approach a problem and justify a solution, for example, has a more lasting impact when it emerges as they examine each other's work than it does when students are simply told about them.

This is not to say that direct instruction has no place in this course. Rather, the role typically assumed by teachers must be modified when using study teams. The teacher becomes less of a “sage on the stage” and more of a “guide on the side,” allowing students to explore problems and construct their

own initial understanding. To do this, students need to explain their ideas and listen to each other. Sometimes their solutions will not work, but our goal is to have students find this out for themselves as they investigate further and discuss their work with their peers. At the same time, teacher-led discussions are still essential to bring students' ideas into the class conversation to summarize results of study team activities and to tie together big ideas after the students have had a chance to work on the pieces. These guided discussions should be conducted in an open, accepting way with the purpose of helping students make connections to understand where and how the pieces of information fit together. In short, most discussions and lectures with the entire class are based on what the teacher observes while the students work in their study teams.

**Teaching
Students How
to Work in
Teams:**

Students will need to learn how to work in teams and effectively perform team roles. Part of teaching these skills is clearly communicating expectations to students, modeling the kinds of questions you hope to hear them asking each other, and reinforcing teamwork behavior throughout the year. If team conversations appear to be lagging, begin the day with a discussion about what kinds of comments you expect to hear from each student's assigned role during that session. Describe what you would recognize as active team participation.

Having clearly articulated expectations for study-team interactions and conversations that you reinforce with feedback or through assessment will help lay the groundwork for high-quality teamwork throughout the year. Listed below are expectations you may want to communicate to your students.

- You are expected to share your ideas and contribute to the team's work.
- You are expected to ask your teammates questions and to offer help to your teammates.
- Questions can move your team's thinking forward and help others to understand ideas more clearly.
- A team that functions well works on the same problem together and discusses the problem while working.
- One student in the team should not dominate the discussion or thinking process.
- Your team should stop regularly and verify that everyone in the team agrees with a suggestion or solution.
- Everyone in your team should be consulted before calling on the teacher to answer a question.

Norms for student interaction in study teams are included in a following section.

Give students feedback about how well they are meeting your expectations. This can be done in a class discussion at the end of the day in which you highlight behaviors that helped teams move forward. On other occasions, you can take public notes about the conversations you hear in teams over the course of a class period. These notes—organized by team and viewed using a document camera, overhead projector, or chalkboard—include quotes or behaviors that you recognize as meeting the study team expectations. You can focus on the quality of team conversations, the content of the conversations, or particular role behaviors, depending on what you choose to emphasize during a particular activity.

It takes time and effort at the beginning of the school year to ensure that study teams work together effectively. Students often come to you with the expectation that learning is passive and amounts to being told what to know. **Do not be discouraged if study teams do not immediately work cooperatively and effectively.** Once you get teams functioning well, the payoff will be tremendous. As the year goes on you will find that students are asking better questions, are working through their confusion, and are relying on each other as resources. Successful teamwork requires ongoing support and maintenance. Regular reminders about roles and norms and consistent feedback about the quality of conversations throughout the year will improve team interaction and support effective learning.

**Additional
Help to
Improve Study
Teams:**

Please see “Teacher Support” online at www.cpm.org for additional ideas about how to get your study teams functioning well. The following list of on-line articles from past CPM newsletters can be downloaded from www.cpm.org/teachers/news.htm. Most problems you will face with your students are discussed in one of these articles written by CPM teachers.

“Improving Your Questioning Skills.” February 2010

“Chris’s Corner: Building a Successful ‘Operating System’ for Students.” November 2009

“How Student-Centered is Your Classroom?” March 2009

“Team Roles: A Cognitive Emphasis.” November 2008

“Updates on Study Team Strategies.” November 2007

“Mathematical Discourse: Why Do We Need It? How Do I Foster It in My Classroom?” September 2006

“When and How to Assist Students: Questioning Study Teams Stimulates Discussion.” September 2005

“Fostering Cooperation in Team Learning.” November 2004

“Maintaining Effective Study Teams.” January 2004

“Seven Proven Ingredients For A Successful Year.” August/September 2003

“Managing & Interacting With Study Teams.” February 2003

“Assertive Study Team Management.” February 2002

“Advice For First-Year Teachers.” August/September 2001

“Modeling Effective Team Behaviors.” March 2001

“Ideas For Managing A CPM Classroom.” September 1999

“Study Team Fundamentals.” January 1999

“Helping A Parent Understand CPM.” November 1998

“Everyday Instructional Strategies.” November 1998

**Student Roles
in Study
Teams:**

Assigning students particular roles in their teams can support productive teamwork. The purpose of the roles is to give each student a clear way of participating in the team conversation. Roles also allow students to share responsibility for the effective functioning of the team and class.

While specific strategies are outlined here and in teacher notes for key lessons to help the teacher implement defined team roles, the textbook is written so that a teacher may choose whether or not to use these roles. The student text makes no mention of team roles after the first section of the first chapter, so it is up to the teacher to use the team role resource pages (displayed on an overhead or document camera, or distributed to teams) to help each student learn his or her role.

Team roles can be structured in a variety of ways. We suggest assigning students the following roles when working in teams of four: Resource Manager, Facilitator, Recorder/Reporter, and Task Manager. These roles are further described below.

Ideally, students will have the opportunity to serve in each role over the course of the term. Some teachers will want to assign students roles that last for a week or for the entire time the student is with a particular team. Other teachers may wish to change students' roles more frequently. It is recommended that teachers assign roles randomly. Some teachers post roles on class seating charts, while others assign them to specific seats within each team (for instance, by using colored dots on the table corners).

In order for the roles to support learning successfully, students need to see that these roles have value in study team interactions. Teachers must stick to and emphasize the roles over time so that students have ample opportunities to learn how to perform different roles. Many students will benefit from hearing sample statements that illustrate what their role might sound like in action. Teacher notes in the first section provide suggestions for how to assign team roles in the context of each activity. Similar suggestions are offered throughout the course, and we encourage teachers to look for additional opportunities to make the most of team roles.

The specific team roles:

The **Resource Manager** gets necessary supplies and materials for the team and makes sure that the team has cleaned up its area at the end of the day. He or she also manages 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?”

The **Facilitator** helps the teams get started by having someone in the team read the task aloud. Facilitators also make sure each person understands the task and knows how to get started. Before anyone moves on to a new problem, the facilitator makes sure that each team member can explain 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?”

The **Recorder/Reporter** shares the team’s results with the class (as appropriate) and serves as a liaison with the teacher when he or she 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 he or she 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 intervenes if anyone is talking outside of her/his team. Additionally, a Task Manager helps the team focus on articulating the reasoning behind the math statements they make as well as the answers that are proposed. 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!”

**Norms for
Student
Interaction in
Study Teams:**

To maximize their learning opportunities, students are expected to actively participate within their study teams. To create this norm in the class, it is important to begin teaching students your expectations for effective teamwork from the beginning. Activities and lesson structures suggested in the teacher notes, resource pages, and descriptions of team roles begin to communicate expectations to students in Chapter 1 (see description below). So as not to interfere with teachers’ setting their own class norms, these guidelines appear once in the student text in Section 1.1.

We suggest the following guidelines for teams which can be remembered by using the acronym TEAMS:

- **T**ogether, work to answer questions.

Requiring students to work within their team helps them to see each other as resources and to find their own way of solving a problem. By making students look to the others in their team rather than friends in other parts of the classroom, it helps ensure that no student is excluded from the conversation. Teams should work and move as a team without leaving anyone behind or having anyone working ahead. Emphasizing the importance of creating space to share ideas and converse openly about the mathematics will help teams be more cohesive.

- **E**xplain and give reasons.

This norm links directly the learning themes of this course and underscores the expectation that there are multiple valid ways of solving a problem.

- **A**sk questions and share ideas.

This helps to set a tone that the classroom is a community of support. This expectation also challenges students to help a teammate understand and make sense of ideas for him- or herself instead of simply receiving an answer. It also reminds students that their conversations in study teams have an intellectual, rather than a social, purpose.

- **M**embers of your team are your first resource.

This norm can be reinforced by the manner in which the teacher responds to questions from a team. Responding only to the hand of the resource manager and then asking, “*Does everyone in the study team want the question answered?*” helps students to work on answering their own questions. 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 behavior can be as difficult for the teacher as it is for the student, it clearly and concretely teaches students to become self-directed learners.

- **S**marter together than apart.

Again, this norm emphasizes that the solving process and thinking mathematically are important parts of every problem, and that understanding others’ approaches improves an individual’s understanding.

**Using the
CPM Text and
Resource
Materials with
Study Teams:**

Norms for interaction and student roles in study teams are often best introduced and reinforced in context. Roles can also help teach classroom norms as students work on problems. For instance, by insisting that only Resource Managers call the teacher over for team questions, the teacher can show students that their first resource should be their teammates, but that the teacher will indeed help when necessary.

The problems and activities in the student text are constructed to encourage discussion among teammates. The teacher notes for Chapter 1 contain explicit suggestions for introducing roles and norms in each lesson. Information about specific student roles is included in that chapter in the teacher notes only; teachers who want to use roles should copy the resource pages provided onto a transparency, display them on a document camera, or make handouts for each team (creating “role cards” by inserting the resource page in a plastic sleeve works well). We recommend discussing your expectations for team participation and roles with the class before they begin to work on an activity in study teams. Using a transparency or role cards to guide discussion, ask students to stand or raise their hands as you explain their role. This allows you to see which students are taking each role and ensures that students know which role they have been assigned. Discussing the roles allows you, as the teacher, to identify sentence starters or quotes that you might expect to hear as students perform their different roles. As students become more comfortable with the roles, they can also suggest what the roles might “sound like” during the day’s activity.

The teacher notes in Chapter 1 describe simplified roles for the first section activities, as students get used to their jobs and begin to work in study teams. The roles become more completely defined with each activity. Even though the notes for team roles are less explicit in subsequent chapters, students will need regular reminders of the functions performed by each role. Returning to the roles transparency and sample quotes regularly throughout the course or creating new role tasks tailored to particular activities will help students learn to use the roles in their team discussions. This familiarity will be especially important as students rotate roles or work in new teams. You might also make posters of the examples on the role resource pages and post them around the room.