

Study Guide—Complete Step 6 before teaching Section 3 of the Grade 5 Curriculum

Use the Step 6 “Independent Web Study” and “In Your Classroom” to prepare for a productive study group discussion.

INDEPENDENT WEB STUDY

Study the Scientist Case: Hugh Gallagher—Water to Ice Investigations

The third section of the curriculum focuses on what changes and what stays the same as water freezes and ice melts. Look at the learning goals for Investigations 10-12. What understandings are highlighted? Investigations 10 and 11 focus on changes at the observable scale. Investigation 12 focuses on changes at the non-visible, particle scale. How will you help students to think about the role that models (in this case the particle model) play in understanding phenomena that is too small to see?

Study the Classroom Case: The Role of Data Discussions

In this video case, students investigate what happens to weight and volume when water freezes. How does Candace, their teacher, help them to use the data they’ve collected to rethink their ideas? What strategies does she use? If some of your students continue to waver in their understanding during the discussion, what might you do? Is there something from this case that you might want to incorporate into your discussions?

Study the Talk Strategy: Students Deepen Their Reasoning

Become familiar with two talk moves that help students to deepen their reasoning: Asking for evidence or reasoning, and challenge or counterexample. Identify one of the two moves that you’ll begin to make a regular part of your teaching. Begin using this strategy in the classroom this week.

IN YOUR CLASSROOM

Audio or Videotape an All-class Discussion

Tape a science discussion. (Place the recorder or camera so that it will pick up both your voice and the students’ voices.) After class, listen to sections of the tape. Can you catch yourself encouraging students to explain their reasoning? Can you catch yourself helping students to use the data they’ve collected to support their reasoning? How do your students respond when you ask them to elaborate? Does expecting students to explain their reasoning change the nature of the discussion?

Identify a question or dilemma that arose from your independent study and your experience in the classroom. Plan to talk about your experience in the study group. You may want to identify a short interchange from the tape (~30 seconds) to share during the study group meeting.

STUDY GROUP MEETING

Learn with Colleagues: Share classroom evidence, successes, and challenges

What did you do differently to help students to share their reasoning? How did you encourage students to use the data they collected to support their explanations? Prepare for a 5-minute discussion of your experience. (There may or may not be time for everyone to share experiences in every study group, but preparing to discuss your own experience will contribute to discussion of others’ experiences.)

Possible Discussion Protocol

1. Plan a core question for discussion.
2. Share experience (2 or 3 minutes). If feasible, share a short audio or video clip to anchor the discussion (~30 – 40 seconds).
3. Respond to colleagues questions
4. Listen while colleagues discuss the issue.
5. Summarize how you are thinking now. What are the implications?