

## Study Guide—Complete Step 7 before teaching Section 4 and 5 of the Grade 5 Curriculum

Use the Step 7 “Independent Web Study” and “In Your Classroom” to prepare for a productive study group discussion.

### INDEPENDENT WEB STUDY

#### Study the Scientist Case: Lindley Winslow—The Air, a Gas Investigations

In the fourth section of the curriculum students’ use the particulate model to build the case that air is matter. Then, in their last two investigations, they apply their new understanding of matter and its transformations to the “Ships in a Field” problem. Look at the learning goals for Investigations 13 – 18. What ideas are highlighted? What are the important ideas you will keep an eye on during class discussions?

#### Study the Classroom Case: The Role of Consolidation Discussions

At the end of the unit changes in the mini-lake are the bases for consolidating ideas. What makes discussing how to annotate their graphs a good experience for this purpose? As students in the video discuss their mini-lake experience, what ideas do you “catch” them understanding? Is there something from this case that you might want to incorporate into your discussions?

#### Study the Talk Strategy: Think with Others

Research suggests that learning is deeper when students connect their ideas to other’s ideas by: agreeing, disagreeing, adding on, or saying how their ideas have changed based on other’s ideas. Become familiar with strategies that help students to co-construct ideas. Then think about what you can do to encourage students to build on and reason with the ideas of their peers?

### 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 using strategies that encourage students to co-construct ideas? Does encouraging students to talk to each other and connect ideas 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 consolidate their ideas? What might you do if you find that ideas are still fragile for some students? 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?