

## Study Guide—Complete Step 6 before teaching Section 3 of the Grade 3 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 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.

#### Study the Child and the Scientist: The Challenges in Learning about Weight Measurement and Why are Standard Measures Important?

This section of the curriculum makes a case for needing standard units of measure that can be used worldwide. Students can learn to measure but what experiences help them develop a theory of measure and grapple with important concepts such as “measurement error?” What are some ideas about weight that 3<sup>rd</sup> grade children find hard to wrap their minds around?

#### Study the Classroom Case: Listening to Students Reason from Evidence

In this video case students reason about whether a tiny piece of matter – one that doesn’t make the classroom balance move and doesn’t feel like it has weight - might actually weigh something.

How does the teacher uncover students’ thinking and reasoning? How does firsthand experience help students reason about weight? Is there something from this case that you might incorporate into your discussions?

### 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?