Talk Moves
A formative assessment strategy for fostering productive probe discussions

By Page Keeley

Formative assessment probes can be used to foster productive science discussions in which students make their thinking visible to themselves, their peers, and the teacher. During these discussions, there is an exchange between the teacher and students that encourages exploratory thinking, supports careful listening to others’ ideas, asks for elaboration and evidence-based explanations, and acknowledges and respects everyone’s ideas. Ready, Set, Science! (Michaels, Shouse, and Schweingruber 2008, p. 92) lists five reasons why productive classroom talk is important and why it may be effective in supporting student learning:

1. It allows students’ prior ideas to surface, which in turn helps the teacher assess their understanding.
2. Discourse formats such as extended-group discussion might play a part in helping students improve their ability to build scientific arguments and reason logically.
3. Allowing students to talk about their thinking gives them more opportunities to reflect on, participate in, and build on scientific thinking.
4. It may make students more aware of discrepancies between their own thinking and that of others.
5. It provides a context in which students can develop mature scientific reasoning.
6. It may provide motivation by enabling students to become affiliated with their peers’ claims and positions.

Discussion prompts are among one of our most important formative assessment tools. These tools include six “talk moves.” Collectively these talk moves make up a strategy that helps teachers facilitate productive discussions that uncover and probe students’ thinking. The six talk moves and their use with formative assessment probes are summarized as follows (Keeley 2015; Keeley 2013):

1. **Revoicing:** Sometimes it is difficult to understand a student’s explanation when he or she struggles to put thoughts into words. Revoicing is a talk move that helps clarify students’ thinking. Revoicing not only helps the student clarify his or her thinking; it also provides clarity for the listeners, both teacher and students. Revoicing the student’s idea as a question provides more “think time” for the child to think through and clarify his or her ideas. It is also a way to make sure the listeners can follow the discussion. Example: *Let me see if I have your thinking right. You are saying that you think the water is there even though we can’t see it?*

2. **Restating Other Students’ Ideas:** This talk move asks other students to repeat or reword what other students share during the probe discussion. The benefit to using this talk move during probe discussions is that it gives all students in the class more time to process, think about, and evaluate others’ explanations and arguments. It also provides another version of the explanation that may be easier for others to understand since it is restated in the language of children. After another student restates their thinking, the teacher follows up with the student whose idea was restated. As a formative assessment strategy, restating others’ ideas provides the teacher with additional clarification of students’ thinking. Example: *Can someone repeat Jamal’s idea in their own words? [A student restates Jamal’s explanation] Jamal, is that what you were thinking?*

3. **Applying Own Reasoning to Others’ Reasoning:** When students answer a probe, they make a claim (their answer...
choice) and share their reasoning for their claim. This talk move helps students zero in and focus on the reasoning their peers use to explain their claim. They can support others’ explanations with additional ideas or offer a rebuttal. The talk move helps students compare their own thinking to someone else’s and in the process be more explicit about their own reasoning. Example: What else can you add to Emma’s idea about why the temperature will change?

4. **Prompting Students for Further Participation:** After bringing to the surface and clarifying the different ideas that emerge during a probe discussion, the teacher prompts others in the class to contribute by agreeing, disagreeing, or adding on to what was already shared. These talk moves encourage everyone to evaluate the strength of others’ arguments and ways of thinking. It promotes accountable discussion by expecting everyone to contribute. Example: What do others think about the explanations we have shared so far? Is there anything you would like to add or change?

5. **Asking Students to Explicate Their Reasoning:** This talk move encourages students to go deeper with their thinking and be more explicit when explaining their ideas. It helps them focus on the evidence that supports their answer choice and build upon the reasoning of others. Example: What evidence did you use to decide that the best answer is the weight stays the same?

6. **Using Wait Time:** This is a silent move used during productive talk. One of the hardest things for teachers to do during a probe discussion is refrain from commenting immediately on students’ responses. There are two types of wait time that should be used during science
discussions. The first is for the teacher to wait at least five seconds before posing a question so the students have adequate think time (this can feel agonizingly long!). The second is for the teacher, as well as the students, to practice waiting at least five seconds before commenting on someone else’s response. This strategy is especially important to use with English language learners or children who lack confidence in sharing their thinking. It provides more time for them to construct an explanation or evaluate the ideas of others.

Table 1 shows an example of how talk moves are used to orchestrate a science discussion using the probe “Watermelon and Grape” (Figure 1; Keeley 2013). These moves can be applied to any of the probes in the Uncovering Student Ideas series as well as probing questions you might develop to learn more about what your students are thinking and how their ideas are evolving throughout instruction. To learn more about talk moves in the science classroom, the TERC Inquiry Project has a set of professional development tools, including several videos and an excellent primer on science talk at http://inquiryproject.terc.edu. As a strategy, talk moves help teachers facilitate productive science discussions, encouraging students to do most of the talking while the teacher carefully listens and considers what the next instructional decision will be.

### TABLE 1.

Talk move examples

<table>
<thead>
<tr>
<th>Talk Move</th>
<th>Example of using the talk move with a formative assessment probe</th>
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</thead>
<tbody>
<tr>
<td>Revoicing</td>
<td>“So let me see if I understand the reason for your prediction. You think the watermelon will sink because it is bigger than the grape?”</td>
</tr>
<tr>
<td>Restating Other Students’ Ideas</td>
<td>“Who can restate Latisha’s rule in their own words about why things float or sink?” [A student says, “Latisha’s rule is the big things sink and small things float.”]</td>
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<tr>
<td>Applying Own Reasoning to Others’ Reasoning</td>
<td>“Can you tell us if you agree with what Sam said about it depends on heaviness for its size? What do you think about Sam’s reasoning?”</td>
</tr>
<tr>
<td>Prompting Students for Further Participation</td>
<td>“What do others think about the ideas we have so far about floating and sinking? What would you add or change to our list of ideas?”</td>
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<tr>
<td>Asking Students to Explicate Their Reasoning</td>
<td>“Maddie, can you say more about that? How did your thinking about large boats help you choose that answer?”</td>
</tr>
<tr>
<td>Using Wait Time</td>
<td>“I want everyone to think first and then I will ask you to explain why you chose float or sink.”</td>
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Table adapted from Ready, Set, Science! (Michaels, Shouse, and Schweingruber 2008)

References

