FACILITATING MEANINGFUL STUDENT-STUDENT DISCOURSE

Creating a classroom environment that values meaningful student-student discourse does not happen by itself. It takes purposeful facilitation moves and types of questioning from the teacher for this to occur. The resources below can help provide teachers with schema for how to approach 1) supporting small-group discussions, 2) facilitating whole-class discussions, and 3) a general set of talk moves that can be used in any context (1 on 1, small group, or whole class discussions) to put the intellectual work of the lesson on students.

Food and Agriculture

Center for Science Education

Supporting Small-Group Discussions

When students are working on a task in small groups, teacher talk with students can be formulated to value student thinking, to be responsive to student thinking, and to help students think together. While there is no exact formula on how to use talk moves in a specific interaction, the below strategy can give you a generalized approach for how to support students working and thinking together in small group conversations.

1. Listening and Eliciting Observations

Circulate the room and move from group to group. Approach a group and listen to student conversations to get a sense of their current thinking.

If students have made a relevant observation and agree on it, skip to Step 2 below.

If students are struggling to make a relevant observation or are focused on an unimportant part of the task, ask a question that...

- elicits a relevant observation
- refocuses/redirects their attention to a new observation

2. Being Responsive to Student Thinking

After students agree on a relevant observation and/or are discussing what they think it means, elicit and listen to their reasoning using

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Pressing Questions.

As students share their thinking, be responsive to their ideas. Depending on student ideas/responses, flexibly move between each of these potential types of talk:

- Facilitating Student-Student Talk
- Follow up and revoice student ideas
- Pressing and Challenging
- Probing

This step may involve as little as 1-2 questions or several more, depending on the goal of the conversation, current student thinking, and student responses.

3. Leaving the Group

Aim to spend no more than 2-3 minutes with a single group. As your time with a small group comes to an end, leave students with a new question to press their thinking further or a new task to complete prior to returning to their group.



		Teacher Discourse Moves
Category of Talk Move	Goal for Talk	Description & Examples
Probing	Eliciting Observations	 The teacher asks students to share an observable feature of the task. <i>"What did you see happen?"</i> <i>"Tell me more about (observation)"</i>
	Redirecting & Focusing	The teacher redirects students' attention to a specific observation or a specific feature of a task or another student's idea. Often, these are features students may be overlooking or may be a productive counterexample to current ideas. Occasionally students can be overwhelmed by a question or task in a way that requires drawing attention to a small part of the problem. (Points to specific features of a task) "What did you see happen with?" (Points to specific idea). How do you think that relates to (observation)?" "Instead of looking at everything, let's focus on"
Pressing and Challenging	Pressing	 The teacher asks students to explain the significance of their observations relative to the target science ideas in the investigation. <i>"Why do you think"</i> <i>"Why is important?"</i> <i>"How come"</i> <i>What can you infer from that observation?"</i> <i>"Can you explain what you are seeing? Why does it work that way?"</i>
	Challenging	 Students provide an idea that you identify as not moving toward the big science idea for the investigation. The teacher provides a challenge or counterexample to this idea. "Does it always work that way?" "How does that idea compare to's idea?" "What if happened instead?"

		 "What about" "I hear you saying Did you think about"
	Pressing for Evidence	 The teacher presses students to use evidence to support their idea. <i>"What evidence do you have for that? What evidence supports (repeat idea)?"</i> <i>"Can you cite the specific evidence that supports this claim?"</i>
	Pressing on Vocabulary	 A student uses a science vocabulary term but it is not clear if they are simply saying the word because they think it is "right" or if they understand its meaning and how to explain its meaning in the current task context. <i>"What do you mean by (vocab term)?"</i> <i>I'm not sure what you mean by Can you say more?"</i>
Following Up & Revoicing Student Ideas	Following Up	 Follow-ups are requests for additional ideas and information from students. Follow-ups signal that the teacher is interested in hearing more of student thinking. Can you tell me more about that? Can you explain/describe it in a different way? What do you mean by that?
	Repeating / Rephrasing	 The teacher wants to rephrase a student's idea to highlight it, slightly adjust the meaning, or provide encouragement and validation for a student's contribution. <i>"So, let me see if I've got what you're saying. Are you saying?"</i> <i>"I heard you say (repeats and adjusts meaning)"</i>
	Revoicing to Highlight or Repair	Revoicing means that the teacher listens to an extended statement a student has made then paraphrases and rebroadcasts what the student has said. This can be done to either focus on an idea or sensitively clarify an ambiguous idea.
		 "We've just heard a number of different ideas, so let me focus on one" "I heard you saybut did you mean to say rather than?" "Is this a summary of what you are saying? (Summarizes)"

	Connecting to Students' Lived Experiences	 The teacher hears a lived experience students bring up and uses it to further the conversation. The teacher can also bring forward experiences that may be relevant. <i>"Do you know of anything similar to this in your own lives?"</i> <i>"What experiences do you have that are similar to this?"</i> <i>"What you said is kind of like (describe a lived experience that students know)."</i> <i>"This reminds me of (describe a lived experience that students know)."</i>
Facilitating Student- Student Talk	Opening Up Cross-Talk	 A student poses an idea, and you want to hear the thinking of other students in response to the original idea. "Do you agree/disagree? Why?" "Are you saying the same thing as or something different, and if it's different, how is it different?" "What do people think about what said?" "Does anyone want to respond to that idea?" "Why do you agree/disagree with that idea? Why does/doesn't it make sense?" "Who can add onto the idea that I is building?" "Can anyone take that idea and push it a little further?" "Who can explain what means when she says that?"
	Generating Consensus	 An idea or ideas is/are on the table, and you want to make sure that the class agrees that this is something we can all move forward with. <i>"Is</i> an idea we're ready to move forward with? Or are there any revisions we want to make to it?" <i>"It sounds like we are agreeing on</i> Is that accurate?" <i>"It sounds like we still aren't sure about</i> Is that the case?" <i>"It looks like we have</i> main ideas we've come up with so far. Is there anything else to add or revise, or should we move forward with these?"
Leaving Questions	Leaving Questions	 The teacher leaves the small group with a question to discuss or a task to complete that will help them further reason about something unobservable. <i>"I'm going to leave you with this question to think about. (Poses a new question from any category above)."</i> <i>"When I come back to your group, I want to hear your thoughts on this question"</i> <i>"I want to hear your ideas about (new task students are to complete that builds on their lines of thinking</i>

Adapted From <u>SERP Talk Moves Map</u>, <u>TERC Talk Moves</u>, <u>Ambitious Science Teaching</u>, and Chicago Public Schools Classroom Discourse Strategies.

Facilitating Whole-Class Discussions

One common challenge in facilitating whole-class discussions is how to have students authentically build a class consensus that aligns with the learning outcome when among students or student groups, there is a large range of different student responses to a task. The <u>Five Practices</u> can help facilitate students sharing their ideas with the class while also having students develop a class consensus. While the Five Practices can provide a framework for how to approach whole-class discussions, you can at the same time use the Teacher Discourse Moves on page 3 within each step of the 5 Practices to facilitate student-student discussions.

Practice	Description of Practice & Considerations for Enactment
Prior to instruction, Anticipate student ideas related to the task and potential ways students might solve or engage with the task.	 Read the provided sample student responses (or come up with your own) and compare them to the responses you imagine that your students will provide. Consider: How might students think about, solve or approach the task? What specifically will they say? Given their potential responses, how will I ask questions, use tools (e.g. representations, analogies, etc.) to support their engagement and help them connect to underlying science learning goals?
During small group work, Monitor students' thinking and work during the task	 Listen to student discussions and look at student artifacts as you circulate groups while they work. Keep track of the different approaches and reasoning that each group is using to complete the task. Consider: What evidence is there that students have achieved the learning goal so far? What have they been successful with? What are they missing? Use the formative assessment rubrics provided to gauge student levels of performance. How can I make sure that each group has something productive to share in the whole class discussion? This can be a small part of the learning goal, or a larger part of it. What questions can I use from the Small Group Discourse tool (above) to support students in pushing

	their responses to the next level?
When moving from small group work to a whole-class discussion, Select examples of student work to use in whole class discussion	 Choose 3 or more examples of student work. Consider: Choosing artifacts that show less evidence of proficiency so you can highlight facets of their work that they did do well with. Choosing artifacts that show common errors or misconceptions so you can use these to have students in the class identify the error and give feedback. Choosing artifacts from different groups that seem to contradict each other so you can have students discuss and argue about the differences and try to resolve the contradiction. Choose at least one artifact that represents a proficient response, or two artifacts that together have different and complementary proficient features, so that students can see exemplar responses.
With the examples of student work you have identified, Sequence the order in which you want to discuss the student work examples	 Determine the order in which to share student artifacts depending on the goal you have for the whole-class discussion (there can be multiple goals!). Consider: Start with artifacts that show less proficiency and ask students to point out a strength in the artifact. Sequence the choices of the remainder of the artifacts such that each successive artifact has a new strength that students can find and discuss. Focusing the share out on contrasting artifacts to engage students in argumentation. Spend more time having students use evidence to argue about which artifact or feature of each artifact they support and why. Ending the share out with artifacts that are closer to proficient responses so that students can see exemplar responses.
During the whole-class discussion, Connect students' thinking to each other and build towards key science ideas.	 As students are sharing discussing their artifacts, use the Student-Student Discourse Moves to facilitate the class discussion towards the learning goal. Consider: How can I make sure I elevate facets of all students' work in a meaningful way? How can I make sure to hear from as many students as possible in the discussion? How can I facilitate the conversation such that students make choices about which artifacts and/or facets of artifacts they want as a part of the class consensus? Or which they disagree with and want to leave behind?

important to have in the class consensus. This way, even groups whose artifacts are less proficient can contribute to the class list.
