

DISCUSSION LEADING TIPS FOR THE INSTRUCTOR

Because student-to-student discussions are so valuable...It's definitely worth taking the time to thoughtfully incorporate student-to-student discussion into your instruction.

Students who participate in meaning-making discussions on a regular basis will come to understand that:

- their ideas will be valued, listened to, and built upon.
- their questions can lead to more questions, and will spark other ideas.
- their own ideas and curiosity can guide the discussion.
- hearing other points of view can help them to understand a big idea.
- they are smart and capable in science.

At first, leading thought-provoking discussions may be challenging for instructors, and participating in discussions can be challenging for many students. This document provides ideas and resources to help instructors in developing the skills required to lead productive, meaning-making discussions.

Be Patient with Yourself and Students

- **Discussions are messy.** It's impossible to lead a perfect discussion. There's always room for improvement, and there are also many different pathways you can take. Let go of the idea that a discussion should always end with a neat and tidy conclusion. Embrace the idea that learning is a process, and discussions are a forum for accurate and inaccurate ideas to be brought into the open and examined by the group, and for the instructor to learn more about what's going on in learner's minds.
- **Be self-evaluative, but be kind to yourself.** If you are new to leading discussions, and you find your first attempt disappointing, don't quit leading discussions! Just pat yourself on the back for effort, and discuss the experience with others, so you can decide what you might do differently, and try again. It takes practice to be an effective discussion leader (but it's really worth it!). Don't be discouraged if discussions don't go smoothly at first. Learners need practice with discussion, and instructors need practice leading discussions.

Nurture a Culture of Respectful Discourse

- **Introduce discussion norms and model respectful talk.** Discussion norms might include: *listen actively and share ideas; use evidence; keep an open mind; share responsibilities; disagree productively; work toward a deeper understanding.* Learners need to feel safe, both from a fear of ridicule, as well as a fear of being "wrong." Learners should feel that what they think is valued by others and by their instructor.
- **Nurture a culture of intellectual curiosity.** Many learners are accustomed to education being a one-way delivery of information and need some modeling and coaxing to share the sorts of tentative questions and ideas that are involved in intellectual inquiry and discussion. They may also be afraid of admitting what they don't know in the presence of peers and especially leaders. Show your own interest in the subject, including asking your own questions and describing confusions. Show genuine interest in and acceptance for learner's contributions, and encourage other participants to do the same. Participate in conversations and investigations by actively trying to figure things out together as fellow collaborators. You may also want to build on the conversational language styles used by your learners.
- **Encourage participation from all learners, but don't require equal participation from all.** Just because some learners aren't speaking doesn't mean they're not engaged. Some learners will happily talk in pairs, but will be reluctant to speak in a larger group. With some encouragement and a non-intimidating question you may get a quieter person to share, but by forcing participation you could embarrass them and turn them off.
- **Point out and model examples of productive discussion and science talk.** In order to help student learners improve their discussion participation skills, it's useful to point out examples when you or others model good discussion

practices, such as asking for evidence, or building on someone else's idea. Encourage learners to politely monitor each other's discussion practices as well.

- **Include and support students by offering sentence starters.** Create a board that shows sentence starters that students can use within the discussion. This helps students formulate their statements, and supports English Language Learners. Possible sentence starters to include: *I agree because... I wonder if... I disagree because... I'm not sure, but I think... In my experience... The evidence seems to show... Maybe... The evidence makes me think... I notice... What if...*
- **Have learners periodically self-evaluate their discussions.** After or mid-way in a discussion, you might ask the learners what aspects of discussion they have done well, so far (see discussion norms above), and which aspects of discussion skills they could improve upon and grow.

General Tips and Practices to Encourage Participation

- **Start out with mostly pair talk and work up to larger group discussions.** Talk in pairs is much easier for learners to participate in and also for instructors to manage. Start out with mostly pair discussion strategies, and work up to occasional whole group discussions, when you feel ready.
- **Give talk options.** Provide many opportunities for learners to talk in pairs and small groups to encourage peer-to-peer learning, as well as to help them prepare for whole group discussions. Break up large group discussions with *Turn & Talks*.
- **Keep discussion as learner-driven as possible.** Challenge students to respond to each other and grapple with each other's questions. Avoid getting carried away with interjections of your own stories and perspectives.
- **Mix discussion with activity.** Especially with children, mix up discussion with activity and other strategies. Just the act of moving to a different spot can re-invigorate learners.
- **Use rich experiences of learner-driven exploration of nature to develop science language and conceptual vocabulary.**
- **Pay attention to learners' conceptual frameworks.** What are their ideas? What is their background knowledge? Ask, listen and probe.
- **Pay attention to known common misconceptions.** Knowing that most learners think soil is the main "ingredient" of trees can help you frame and guide a discussion about where the mass of a tree comes from. If you are aware of their incorrect ideas, you can provide pivotal pieces of evidence into the discussion. Awareness of common misconceptions can also help you recognize and understand statements made by learners.
- **Conclude the conversation by summarizing what has been discussed and by providing students a chance to reflect on their own learning.** Ask them to think about what surprised them, new questions they have, what has changed in their thinking, or to respond to the prompt: "I used to think... Now, I think..."

Thoughtfully Plan and Ask Questions

- **Plan questions in advance, but be willing to improvise.** Small adjustments in phrasing can sometimes make or break a discussion question, so it pays to plan and be thoughtful about them. It's also true that many great questions are improvised on the spot, based on participants' emerging interests. Try to ask engaging, broad questions, and be ready to shift to another question if interest decreases. A great discussion-inspiring question is "gold," so write them down when you find them, use them again, and share them with others. Try to figure out what is interesting to your students. Questions that have some "gray area" can make the discussion more interesting.
- **Accept and probe.** In general, give neutral accepting responses to learner statements, and ask other learners for their responses to other learners' statements. Probe for clarification using follow-up questions to find out more what learners are thinking.
- **Use wait time.** It can help to pause ~3 seconds after asking a question before calling on anyone, to allow more time for thinking and for more learners to chime in. Allow learners to struggle with questions and ideas, rather than immediately providing them with an answer.

Responding to Students and Guiding the Conversation

- **Moderate, don't dominate.** Attend to the group dynamics. Instructors need to balance offering guidance while also allowing learners to drive the discussion.
- **Be a collaborator with your learners.** Participate in conversations and investigations by actively trying to figure things out together.
- **Relate learner experiences to content.** Use rich experiences of learner-driven exploration of nature to develop science language and conceptual vocabulary. For example: Maria found a beautiful caddis fly exoskeleton on the trail by the riparian habitat and was able to point out how that exoskeleton was an excellent adaptation that helped the insect survive...What other insects do you think we might encounter tomorrow in the redwood forest, meadow, oak woodland habitat?
- **Make choices.** Different topic threads can come up during a discussion, and you can't pursue them all fully as a group. Although you are often trying to make sure every idea is heard and acknowledged, the discussion leader can help keep the group focused by choosing which paths to spend more time pursuing. You can direct the conversation by asking follow-up questions, and also by choosing to cut off the discussion or table it for later.
- **Seek out the edges of your own understanding.** Don't be afraid when discussions steer towards topics and questions that you don't fully understand. Let learners see you brainstorming and grappling with ideas. Engaging in authentic inquiry together makes you a "guide on the side." Some educators may avoid discussing unfamiliar topics because they are afraid they will lose respect from their learners. When you take time to figure things out along side your learners, you actually gain their respect for being a curious and scientific thinker.
- **If a discussion feels false or inauthentic, take the opportunity to reflect on what you're actually trying to do.** It may be because the learners know that your real intention is delivering content, or trying to lead them to a specific answer. In those cases you may be pretending that it's an open discussion, when you should probably just tell them what you want them to know.