

"Tips and Tricks to Elevate your Active Learning" Workshop Handout

Sacramento State | Spring 2024 | Cathy Ishikawa

Guiding Motivation

A key component of culturally responsive or equity-minded teaching is **hearing student voices and valuing their thoughts**. Traditional classroom instruction prioritizes the teacher's voice and thinking. Various forms of active learning techniques aim to shift this dynamic, but old habits (both teachers' and students') may work to maintain the traditional dynamic. The techniques in this handout can help you "communicate" (without words) that **students' thinking is important** in your classroom.

Quick tips from Peter Liljedahl's "Building Thinking Classrooms"¹

#1 Get students thinking in the first 5 minutes

While sitting through announcements and lecture, students settle into a passive, receiving state. Peter Liljedahl's research on encouraging thinking in K-12 math classrooms² suggests that starting with active thinking exercises builds momentum toward thinking and sets expectations for what is most important in the classroom.

#2 Decentralize the classroom and have shared communication space

Sitting in chairs facing a teacher and screen in front of the classroom signals to students that it is time to sit and receive information. Having students stand and work at whiteboards around the room changes the dynamic. Using whiteboards allows the instructor to keep track of student ideas, and gives students a record of their thoughts. They can use that record to present to other groups in the whole class discussion, which can be done by walking around the room to each board.

#3 Randomize and rotate groups

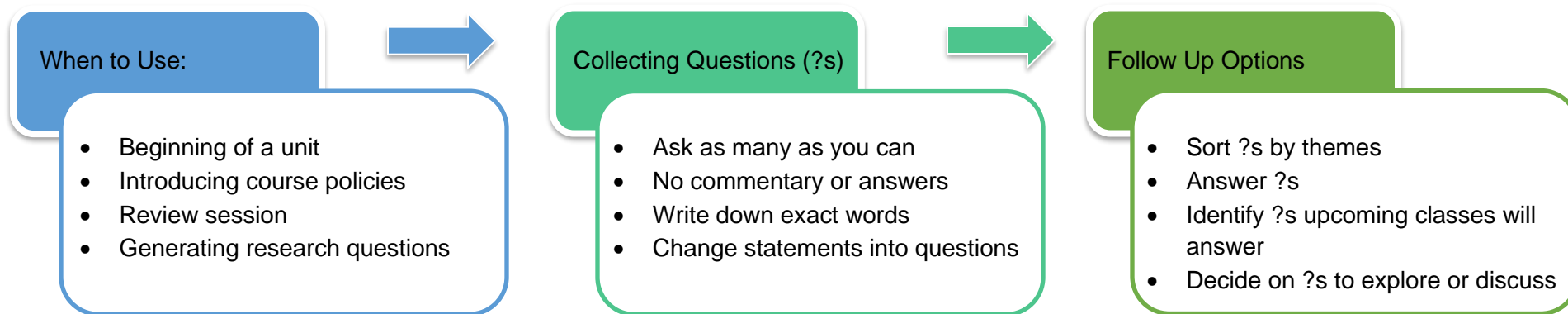
Opinions on group formation vary widely, but rotating groups can (1) introduce students to all their classmates, resulting in greater comfort in whole-class discussions, and (2) allow students to play different roles (even if task-related roles are assigned and rotated, students will tend to take on subconscious roles). Clearly randomizing students lets them know that you are not trying to group them by ability.

¹ Liljedahl, P. 2020. Building Thinking Classrooms in Mathematics, Grades K-12: 14 Teaching Practices for Enhancing Learning (Corwin Mathematics Series)

² Liljedahl, P. 2020. Building Thinking Classrooms in Mathematics, Grades K-12: 14 Teaching Practices for Enhancing Learning (Corwin Mathematics Series)

#4 Use the Question Focus Technique

This technique from Dan Rothstein and Luz Santana³ is great for breaking the ice, building community, and letting students know that questions are valuable. Students can collect questions in small groups or you can collect them from the whole class.



#5 Use alternatives to questions (see table below)

We often try to get students thinking and talking by asking them questions we know the answer to. This is not typically a form of discourse we use in life outside the classroom, and it upholds the idea that the teacher is the sole thought-producer in the classroom. Speaking to students more like we would to colleagues communicates respect for students' ideas and signals that their thinking is valued. This frees students to become independent thinkers, ready to tackle issues of our day!

Additional Resources

Liljedahl, P. 2020. Building Thinking Classrooms in Mathematics, Grades K-12: 14 Teaching Practices for Enhancing Learning (Corwin Mathematics Series)

Rothstein, D. and Santana, L. 2015. Make Just One Change: Teach Students to Ask Their Own Questions

Dillon, J.T. 1988. Questioning and Teaching: A Manual of Practice.

³ Rothstein, D. and Santana, L. 2015. *Make Just One Change: Teach students to ask their own questions*

Alternatives to Questions—Adapted from Dillon (1988)

Alternative Description	Example Question	Example Alternative
<p>Declarative statement Instead of asking questions that provide a hint, get students to notice something, or bring out a specific example you have in mind, state the <i>answers</i> to these questions.</p>	<p>(1) Are their speeds the same? (2) Does 1000 meters per second seem like a reasonable velocity for the runner? (3) What other examples could we consider?</p>	<p>(1) Their speeds are the same. (2) 1000 meters per second seems too fast to me. (3) An example I thought of is _____.</p>
<p>Statement of interest The difference here is subtle. The interest statements convey more respect for the students' ideas and may encourage more participation.</p>	<p>(4) How would you define heat? (5) Do you have an example of ____? (6) Could you expand on that?</p>	<p>(4) I'm interested in how you defined heat here. (5) It would help me understand better if you could give me an example of ____. (6) I'd like to hear more about that.</p>
<p>Statements of (mis)understanding or (dis)agreement These alternatives make your state of understanding or agreement with what a student says clear. Pausing afterward offers an opportunity for others in the class to agree, disagree, or for clarification</p>	<p>(7) Could you say that again? (8) Could you show me that again? (any question to stall) (9) Jeff, are you saying that it's because the air is pushing back? (knowing that this is what Jeff said)</p>	<p>(7) I'm not sure I understand what you're saying. (8) I'm trying to decide if your approach would work in other cases. (9) So, Jeff, you're saying that it's because the air is pushing back.</p>
<p>Student referrals If students have not already brought up the similarity or difference themselves, you can mention it yourself rather than trying to pry it out of them.</p>	<p>(10) Kelly, how did your approach differ from Jan's? (11) How does your answer compare to Mark's?</p>	<p>(10) Kelly started with energy conservation but Jan started with conservation of momentum. (11) It sounds like you and Mark have similar answers.</p>
<p>Provision for student questions In addition to providing "space" for questions through deliberate silence, and instead of asking "Are there any questions?", you can actively encourage questions.</p>	<p>(12) Are there any questions about her solution? (13) Is it ___ that you're confused about? (or trying to anticipate the answer to the unformed question)</p>	<p>(12) Some people may have some questions about your solution. (13) Relax and take a minute to figure out what's still bothering you about that (for a student who gave an unsure answer/question)</p>
<p>Sustaining student questions... ...without turning it back on them.</p>	<p>(14) Well, what do you think?</p>	<p>(14) You're wondering _____. That's a good question to discuss.</p>
<p>Filler</p>	<p>(15) Any question</p>	<p>(15) Mm hmm, yeah, OK, nod</p>
<p>Deliberate silence</p>	<p>(16) Any question</p>	