Short Answer

Teaching Tips

To help foster a supportive environment for feedback, introduce the importance of feedback and how to give empathetic feedback with our mini-lessons.

The best questions are open-ended and ask students to **justify** opinions, **analyze** material, **articulate** a thought process, or **evaluate** a claim.

⚠ **Avoid** fact-based recall questions.

The best feedback criteria are **positively oriented** and relevant to learning objectives. Criteria can focus on both **content knowledge** and **writing structure.**

- Make students aware of the criteria so they know how to craft their response. Or, have students decide what appropriate criteria would be.
- Emphasize that students have to make a choice about assigning feedback. *Both* or *neither* aren't options!

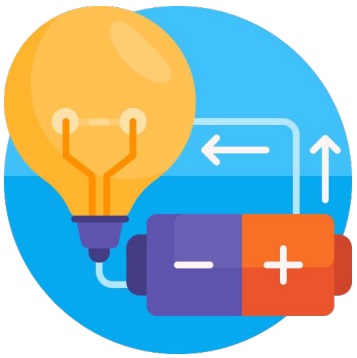
The best discussion questions ask students to **verbalize their thought process** about the feedback they gave. For example: "93% you said Response 1 explained the concept of photosynthesis better. Can someone share what aspect of the response made you think that?"

- Have students **predict** what results will be.
- Focus discussion on the qualities of the **responses** rather than on the students who wrote the responses.

To promote students' **metacognitive development**:

- Encourage students to **ask themselves questions** during the activity:
  - "Does my response meet all the criteria?"
  - "How did giving feedback improve my understanding of the content?"
  - "How can I improve my response using the feedback I got?"
- Provide clear **time signals** throughout the activity.

To **incorporate feedback in the moment,** ask students to reflect on how they can improve their response after receiving feedback. You may want to take time to have them **revise** their responses, either in class or for homework.



Physics

In all Short Answer activities, your students **create** responses, **compare** peer responses and provide scaffolded feedback, then **converse** results as a class.

Short Answer gets your students the immediate feedback they need through social, engaging peer feedback activities and gets you deeper insight into what your students know.

Short Answer can be used at every stage of your Physics lesson plan from lectures to labs.

Bellringer	Get students engaged by using Short Answer to prompt written responses about what stands out from yesterday's class or to preview new material with a warm-up problem.
Check for understanding	Break up lectures with quick feedback activities that get students interacting with one another. Deepen understanding while getting a quicker, more accurate pulse of what they know on an individual level.
Guided practice	Group students together to write responses, solve problems, and give feedback to other groups, or provide a model response in Short Answer.
Independent practice	During Short Answer activities, encourage students to reflect on how their response matches up to the ones voted as the strongest by the class. Invite revision and iteration of responses as another in-class activity, exit ticket, or homework.
Labs	Use Short Answer to bring feedback into the scientific process. Your students can create procedures for experiments, hypothesize results, and infer conclusions from data before bringing them to the class for analysis and debate.
Exit Ticket	Complete a quick, one-round Short Answer activity to leave students thinking about the most important points of the day.
Homework	Have students complete writing assignments about core content and bring them in next class for peer feedback activities and discussion to deepen understanding.

See the following page for two detailed Physics use cases with example questions, feedback criteria for students to evaluate responses with, and standards alignments.

Sample Use Cases: Physics

Note: Short Answer doesn't support math equations yet, but works well when discussing generalized problem solving strategies and procedures.

Mid-Lesson Content Review
Activity Time: 5-10 minutes
Use Short Answer to assess whether students understand new material. Results from the feedback activity inform whether content needs to be re-explained or if the class is ready to move on.

Sample Questions

- Do our mass and/or weight change on the moon? Why or why not?
- Explain what happens to velocity when acceleration is constant.
- How can we determine if an object will float in a liquid?

Feedback Criteria: accurate hypothesis; clear explanation; examples support claims

Standards Alignment Examples

- Write arguments focused on discipline-specific content. *(CC, WHST.9-12.1)*
- Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem. *(CC, RST.11-12.7)*
- Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions. *(CC, RST.6-8.2)*

Observing Experiments and Analyzing Data
Activity Time: 5-10 minutes
After demonstrating an experiment for the class, have students hypothesize why the phenomenon occurred or what the results of the experiment might mean.

Sample Questions:

- What variables in the experiment might explain the pendulum's period?
- Explain why the number of paper clips attracted to the magnet differed based on the magnet's temperature.

Feedback Criteria: uses observations to support claims; accurate hypothesis; clear explanation of reasoning

Standards Alignment Examples

- Conduct short as well as more sustained research projects to response a question (including a self-generated question) or solve a problem; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. *(CC, WHST.11-12.7)*
- Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic. *(CC, RST.6-8.9)*
- Analyze data to support the claim that Newton's second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration. *(NGSS, HS-PS2-1)*