



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.



Trigonometry

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 Trigonometry lesson plan from lectures to in-class practice.

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.
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 Trigonometry use cases with example questions, feedback criteria for students to evaluate responses with, and standards alignments.

Sample Use Cases: Trigonometry

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

Procedural Knowledge and Problem Solving

Activity Time: 5-10 minutes

Use Short Answer to nail down foundational algebraic skills and crowdsource strategies for solving problems, opening up discussion to address common mistakes and misconceptions.

Sample Questions

- Describe how you know if a trigonometric function is even or odd.
- Without actually solving the problem, describe the steps you would take to solve the problem: "Kelly is 5 feet, 5 inches tall and her shadow from the sun is currently $\frac{2}{3}$ her height. Find the sun's current angle of elevation to the nearest degree.

Feedback criteria: accurate; efficient; easy to understand; detailed procedure

Standards Alignment Examples

- Construct viable arguments and critique the reasoning of others. (*CC, PRACTICE.MP3*)
- Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems. (*CC, HSG.SRT.C.8*)

COMING SOON: Solving Equations and Showing Work

Activity Time: 10-15 minutes

Have students solve any trigonometry word problem in Short Answer, then give feedback to peers on how their solution can improve. Bonus points for asking students to write how they solved the problem! (In the future, students will be able to upload a photo of their work.)

Sample Questions:

- In a right triangle, there is one right angle b and two complementary acute angles e and n . If $\cos(e) = 112/113$, find $\sin(n)$. Explain your reasoning.
- Vinutha and Andrew stand on opposite sides of a 145-foot gorge. They can see Stephen at a 60° angle of depression in the gorge. How far are they each from Stephen? Show your work and explain reasoning.

Feedback Criteria: accurate result; efficient; creative approach; clear explanation of thought process

Standards Alignment Examples

- Make sense of problems and persevere in solving them (*CC, PRACTICE.MP1*)
- Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems. (*CC, HSG.SRT.C.8*).
- Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures. (*CC, HSG.SRT.B.5*)