

Task

Journal

Two journal entries over course of the unit will ask students to explain, interpret, and apply concepts. Journals will also provide opportunity for self-knowledge.

Begin class by reminding the students of the essential question that we are trying to answer. Ask one group member from each group to come up to the board and record their decimal approximations for Opposite/Hypotenuse, Adjacent/Hypotenuse, and Opposite/Adjacent for each triangle. Ask the students if they notice any patterns here.

The students should eventually see that the O/H ratio is the same or roughly the same for all 3 or 4 triangles regardless of size. Explain that the mathematicians noticed this phenomenon and called it **sine**.

The students should see that the same is true for A/H, which the mathematicians called **cosine**, and O/A, which was called **tangent**.

Have students take notes on the three trigonometric ratios sine, cosine, and tangent. Tell them that the phrase SOH-CAH-TOA can be used to help them remember the three different ratios: $\sin \theta = O/H$, $\cos \theta = A/H$, and $\tan \theta = O/A$. sing the SOH-CAH-TOA song to the tune of “Oklahoma!” (See attached lyrics).

- ✓ Assign **journal entry #1**. The prompt is: ***“Please take some time to reflect on the activities completed in class, and summarize in your own words what you’ve learned about the development of right triangle trigonometry.”***
- ✓ Assign **journal #2**. The prompt: ***come up with your own definition of trigonometry based on what you have learned so far. Name two important things that right triangle trigonometry allow us to do. Then come ups with at least three specific examples of when you would need to use right triangle trig in the real world.***
- ✓ Your entries should be at least 5 sentences long, and refer to specific things that the mathematicians did or looked for when coming up with trigonometry.

Rubric:

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| 3 | The journal entry thoroughly addresses the questions presented. Students have a clear and complete understanding of concepts discussed in class. |
| 2 | The journal addresses some of the questions presented. Students have a clear understanding of some but not all concepts. |
| 1 | The journal entry barely addresses questions presented. Students have no understanding of concepts discussed in class. |