

Is it Evidence?



Which of the following are examples of EVIDENCE that you might use when making a Scientific Explanation?

- | | |
|---|--|
| <input type="checkbox"/> Personal opinions | <input type="checkbox"/> Something you saw in a movie |
| <input type="checkbox"/> Text from a science article | <input type="checkbox"/> An interview with an expert |
| <input type="checkbox"/> Background knowledge | <input type="checkbox"/> A hypothesis |
| <input type="checkbox"/> Personal experiences | <input type="checkbox"/> A chart or graph |
| <input type="checkbox"/> Data from a data table | <input type="checkbox"/> A photograph |
| <input type="checkbox"/> Observations that another student made | <input type="checkbox"/> A drawing |
| <input type="checkbox"/> Measurements | <input type="checkbox"/> An observation you wrote in a notebook |
| <input type="checkbox"/> A prediction | <input type="checkbox"/> A model |
| <input type="checkbox"/> Notes you took during class | <input type="checkbox"/> Results from an investigation you conducted |

Describe your rule for something to be considered EVIDENCE...

Is it a Scientific Explanation?

Facilitation Notes

Purpose

The purpose of this assessment probe is to elicit learners' ideas about what constitutes EVIDENCE in a scientific explanation. If these ideas are not uncovered they could prevent a learner from fully understanding the CER framework.

Explanation

This probe is intended to uncover ideas about what constitutes EVIDENCE. This could be confusing to students as they also learn about evidence in other content areas. In English/Language Arts, EVIDENCE is typically Text-Based Evidence. In Social Studies,

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evidence can take many forms. The intent of this probe is to uncover how students are defining evidence. Are they confining evidence as only data from a data table or text?

All of the items could be evidence except the following:

- Personal Opinions
- Background Knowledge (could be evidence if a student has factual knowledge)
- A Prediction
- Something you saw in a movie (could be evidence if the movie/video is providing factual information)
- Hypothesis (based on evidence but is not itself evidence)

Facilitation Considerations

This probe is a Formative Assessment Classroom Technique (FACT) called a *Justified List*. It begins with a statement about a concept. Examples that fit (or

possibly do not fit) the statement are listed. Learners check off the items on the list and provide justification explaining their rule or reasons for their selections. This assessment probe can also be used to provide an opportunity for learners to engage in the ideas on the list and modify their thinking based on new evidence or research.

Misconceptions

Learners may have a variety of misconceptions regarding the term EVIDENCE and what is an adequate source of EVIDENCE. The examples in the probe represent a range of sources that students may consider when supporting a CLAIM with EVIDENCE as part of a scientific explanation.

Administering the Probe

This probe is best used at the beginning of instruction on a CER framework OR just after some initial instruction. Learners should be encouraged to share their choices and thinking with a partner. The teacher should circulate around the room to observe the responses, and the conversation occurring between partners. Use this information to inform your ongoing instruction on the CER framework.

It is recommended to immediately use this probe to debrief as a whole class. What ideas do they have about EVIDENCE? What opportunities do you have to move students' understanding of EVIDENCE forward during upcoming instruction?

References

Supporting Grade 5-8 Students in Constructing Explanations in Science, McNeill & Krajcik (2011)
http://books.google.com/books/about/Supporting_Grade_5_8_Students_in_Constru.html?id=PzlbwAACAAJ

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Based on the Formative Assessment Probe framework developed by Page Keeley in her [Uncovering Student Ideas in Science](#) series