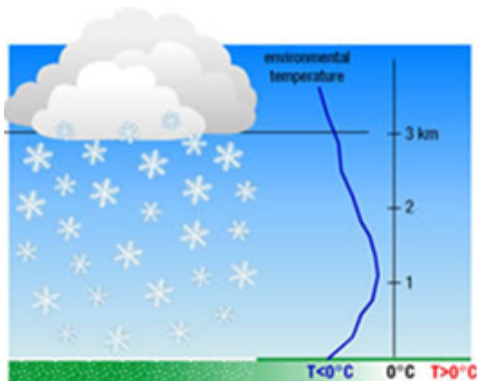


Claim-Evidence-Reasoning (CER)

How do snowflakes form?





Claims



Claims are the statements that answer your original question.

- The claim must be accurate, specific, and answer the question.
- The claim is usually one sentence in length.





Evidence



The evidence is all the scientific data that supports your claim.

- It can come from a variety of sources such as: textbook, reading selections, videos, lab investigations, class notes, etc.
- It should include both qualitative and quantitative data.
- It is important to have numerous pieces of evidence in order to prove your claim.





Reasoning



- Reasoning is the explanation that connects your claim to the evidence that supports it or why you think your claim (answer to the question) is correct .
- It shows why the data you chose counts as evidence.
- It shows a detailed understanding of the scientific principles involved and uses correct science vocabulary.
- This explanation acts as a conclusion.
- If evidence is from an experiment, it can be the “conclusion” of the lab.
- It is usually several sentences in length.





What do you know about snow?

How does it snow?

Youtube: Science of Snowflakes

<https://www.youtube.com/watch?v=fUot7XSX8uA>





Claim-Evidence-Reasoning (CER)

Assignment: Write a scientific explanation that answers this question: How do snowflakes form?

Claim (Write a sentence that states how snowflakes form.)

Evidence: (Provide data about the weather conditions including quantitative data to support your claim about how snowflakes form.)

Reasoning: (Write a statement that connects your evidence to your claim about how snowflakes form.)





Getting Started: Prewriting Science Ideas



- What is a possible claim?
- What science words will you want to include?
- Where will you look for your evidence?
- What sentence starters can you use to present your evidence?
- What reasons show that this is good evidence?
- What writing words can you use?





Show Your Evidence

Sentence Starters



- According to the text...
- On page ____, it said ...
- The author wrote...
- For instance...
- From the reading, I know that...
- Based on what I read...
- The graphic showed...
- For example...





Writing Words



- “Uncertainty” words: usually, generally, suggests, indicates
- Sequencing words: first, second, third
- Therefore
- Because
- If... Then...
- However





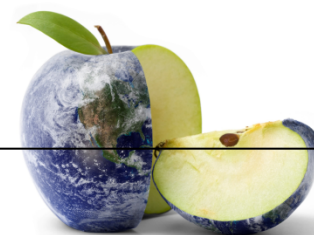
Providing Feedback on a Student's CER

WHAT TO COMMENT ON:

- Components of the explanation:
 - claim
 - evidence
 - reasoning
- Science content of explanation
- Holistic quality of explanation

HOW TO COMMENT:

- Explicit and clear feedback
- Point out strengths and weaknesses
- Provide suggestions on how to improve
- Ask questions to promote deeper thinking





Multiple Choice Question

- Claim
 - The correct answer choice is ...
- Evidence
 - Facts from background information
 - Data from the table or graph if applicable
- Reasoning
 - Reasons for excluding other answer choices
 - Scientific background knowledge that explains why the answer is correct beyond what is given in the graph, table or background information.





Claim, Evidence, Reasoning after Viewing a Video or a Documentary

- What is the claim the reporter is making?
- What evidence does he or she cite in the report that supports that claim?
- What is the scientific explanation?

