

What is CER?



/klām/
The Answer
<what I know>



/'evədəns/
The Supporting Details
<how do I know>



/rēz(ə)niŋ/
The Connections
<why do I know>

CER, which stands for Claim, Evidence, Reasoning, is a structure or template for writing an argument or conclusion.

Every strong argument or conclusion has the same parts: a claim (or argument), facts to support the claim, and reasons explaining how to evidence supports the claim.

In science, students can use CER to write conclusions for lab reports. But, more importantly, it can be used as a structure for debates or to gauge student thinking when presented with a problem or question.

Thus, CER is a tool for students to develop and practice their skills in scientific analysis and critical thinking.

Q: Do Lobsters feel pain?



/klām/
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Lobsters do feel pain.. Researchers at Queen's University in Belfast found that crabs - which, like lobsters and prawns, are invertebrates - learned to avoid the shelter in a laboratory tank where they had repeatedly received an electric shock. In another experiment at Queen's University, researchers a light acid was placed on the antenna of a prawn. In response, the prawn would repeatedly rub the area for a long time. However, the response was reduced if a local anaesthetic was applied. Therefore, lobsters must feel pain because the response of similar invertebrates to painful stimuli - whether it be nursing, grooming, or avoidance - is representative of how all organisms would behave when experiencing pain.

Q: Do Lobsters feel pain?



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Lobsters do not feel pain.. In order to feel pain, an organism must have a brain that is advanced enough to process pain. In other words, no brain, no pain. Lobsters, like grasshoppers and other insects, are invertebrates. The nervous system of grasshoppers and lobsters are primitive and are made up of a small concentration of nerve cells called ganglia. Lobsters do not have a developed brain like humans, dogs, and other mammals. This primitive nervous system will allow lobsters to react instinctively, like using escape mechanisms to avoid electric shock. However, the primitive nervous system also means lobsters do not have the ability to develop a conscious response or to process pain.

PRACTICE: Write CER statements for the following prompts



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- 1. Foods labelled organic are better for people to eat.**
- 2. More money should be spent on <science A> than <science B>.**
- 3. <science discovery or invention> is the most significant discovery/invention in the last 10 years.**
- 4. The smartest organism on earth is <>.**
- 5. 10 years from now, a career that would be in demand is...**