INSTRUCTIONAL STRATEGIES

Claim, Evidence, Reasoning, Test, Improve (C.E.R.T.I.fy Your Thinking)

This strategy provides a scaffold for students to use evidence as they formulate and justify their own arguments. Students break down materials and research into smaller pieces for analysis using the following acronym: C=Claim, E=Evidence, R=Reasoning, T=Test, and I=Improve.

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Summary

This critical thinking strategy supports students in using evidence to substantiate claims from a question that has been posed. Students write a conclusion that justifies their claim and supported evidence. Students then engage in a debate with their peers to develop deeper knowledge and understanding of the topic.

Procedure

1. Present students with a question that will allow them to create a **claim**. The claim will answer the question and usually will be one sentence.
2. Have students look for **evidence** to support their claim in provided materials and online research. The more relevant the evidence, the better the claim will be supported.
3. Ask students to write down their personal **reasoning**, which functions as a conclusion. They should provide explanations for why the data they read or heard counts as evidence and supports their claim. This conclusion should be a few sentences in length.
4. Organize students into groups with others who made similar claims. Remind them of classroom norms and rules to maintain while in a debate.
5. Have groups take turns as they defend (**test**) their claims.
6. After 3–5 rounds of discussion, ask if any students want to switch to another group. (Some students may be undecided and not ready to choose a side. In this case, they may choose to create a new group in the center.)
7. Give groups 30 seconds to formulate a final argument for their claim and choose a spokesperson.
8. Have groups take turns sharing their final arguments.
9. Give students an opportunity to revise (**improve**) their reasoning.

ELA variation: Ask students to look at a persuasive text (science journal article, newspaper column, etc.) and annotate the text by labeling the author's claim, evidence, and reasoning. They may then complete steps 4–9. Students could also add their claim, evidence, and reasoning to a large sheet of paper or online document to allow their classmates to see if they all gathered the same components or if there were different perspectives.

McNeill, K. L., & Krajcik, J. (2008). Inquiry and scientific explanations: Helping students use evidence and reasoning. In J. Luft, R. L. Bell, and J. Guess-Newsome (Eds.) Science as Inquiry in the Secondary Setting. Arlington, VA: NSTA Press.