INSTRUCTIONAL STRATEGIES

Using Phenomena to Drive Science Instruction

Students engage with phenomena that can be explained using core concepts from the science standards, thus providing a focus for learning that requires integration of crosscutting concepts and science and engineering practices.

LEARN.K20CENTER.OU.EDU/STRATEGIES

USING PHENOMENA TO DRIVE SCIENCE INSTRUCTION

Summary

The purpose of science learning is for students to build ideas (based on evidence) that explain and predict natural phenomena so they can apply that learning to real-world contexts. When science instruction is centered on a phenomenon, the focus switches from learning about something to figuring out why it happens. This is done by engaging students in activities to gather evidence that will help them explain a phenomenon. Students then become actively involved in learning to think scientifically and critically.

Procedure

1. Identify what you wish to target from the science standards.
2. Identify a phenomenon (observable objects or real events that can be familiar or unusual) that can be explained using the concept from the standard while also capturing student interest.
3. Present the phenomenon to students in the form of a description, picture, video, or actual experience. Have them create an initial explanation or explanatory model of the phenomenon.
4. Engage students in an activity or series of activities providing them with evidence or information that applies to the targeted concept.
5. Discuss to help students clarify how the evidence applies to the concept.
6. Have students revise their initial explanation (or model), including new evidence or information they have gathered.

Next Generation Science Standards. (2016). Using phenomenon in NGSS-designed units and lessons [Video]. Phenomena. http://www.nextgenscience.org/resources/phenomena