Instructional Strategies – Constructing Explanations

A scientific explanation is an explanatory account that articulates how or why a natural phenomenon occurs that is supported by evidence and scientific ideas.

Potential Instructional Strategies for *Constructing Explanations*
1. Discuss key features of explanations in science: explanatory account, science ideas and evidence. An explanatory account describes how or why a phenomenon occurs. Science ideas are key concepts or principles students apply to make sense of a specific phenomenon (e.g. example). Evidence is scientific data such as measurements and observations.
2. Create a poster with the key features for a scientific explanation, such as that it shown how or why something occurs.
3. Revise explanation questions in curriculum or lessons to ensure that students need to answer with more than a simple "yes" or "no"; rather, they require an explanatory account.
4. Provide examples of strong and weak examples (e.g. describes a phenomenon instead of explaining it). Critique the examples as a class.
5. Provide students with scaffolds such as sentence starters, questions or graphic organizers that highlight the key features. For example, a graphic organizer could include three sections labeled: 1) Your explanation – the how or why?, 2) Big science ideas that support your explanation, 3) Evidence that supports your explanation
6. Ask students to highlight the key features of an explanation (explanatory account, science ideas and evidence) in their own or a peer's writing.
7. Ask students to give feedback to each other about written explanations. Provide sentence starters to students to help them make specific statements about the explanations. Examples of sentences starters can include "I have a question about your evidence…", "I am not sure that your writing explains why _____ occurs. Can you explain that to me?, or "How can we use our big science ideas to help explain _____?"

For a classroom example of instruction using this science practice, visit our website at www.sciencepracticesleadership.com and click on the Grade 5 Exemplar under Case Studies.