
Developing and Using Models to Construct Scientific Knowledge

Overview: Modeling is a core practice for scientists as they use a variety of models to develop, refine, and communicate their ideas. In this workshop, participants will actively engage in a Pre-AP model lesson with an attention to modeling. They will examine how the Pre-AP shared principles and science areas of focus support student engagement in science practices such as modeling and scientific argumentation. Participants will then consider how they can apply new learning within their own classroom context to support students in constructing and then modifying their own scientific knowledge as new information becomes available.

Teachers will:

- Connect the Pre-AP science area of focus, attention to modeling, to student engagement in constructing and modifying scientific knowledge.
- Plan to support student construction of scientific knowledge through attention to modeling and incorporation of the Pre-AP shared principles.

Agenda at a Glance

Welcome and Opening <i>Establish a collaborative learning environment and introduce, at a high level, the Pre-AP Program.</i> 45 minutes
Why Modeling? <i>Connect personal experience to the process of modeling through professional reading and dialogue.</i> 45 minutes
Zooming In – Pre-AP Science Areas of Focus and Shared Principles <i>Examine Pre-AP science areas of focus and shared principles to determine how they support student construction of scientific knowledge through modeling.</i> 60 minutes
Attention to Modeling in Action <i>Experience a Pre-AP model lesson from a student perspective and analyze evidence of how the development and revision of models support student construction of scientific knowledge.</i> 120 minutes
Attention to Modeling in Your Classroom <i>Connect attention to modeling and the Pre-AP shared principles to the participant’s own classroom instruction.</i> 40 minutes
Reflection and Closing <i>Synthesize the day’s learning to connect best practices and support participant action steps.</i> 20 minutes