

## Professional Development Situation: Coaching

Skill Focus: Modeling Science Practices

Time Required: 15 minutes

# DIGGING DEEPER

Participants will expand an upcoming lesson to learn to engage youth in conceptual STEM learning.

## Agenda

Making It More Conceptual—15 minutes

## Materials

- The participant will need to bring an example activity that they have done with youth.
  - As backup you can bring an activity you have used before.

## Before the Session

- **Read this coaching guide** to become familiar with the content and allow time to personalize the activities to best suit your presentation style.
  - *Italics indicate text that can be read aloud or emailed to the participant.*
- Send an email to the participant being coached:
  - *Our coaching session is scheduled for DATE at TIME. We will focus on “Modeling Science Practices”. **Bring a recent activity you have tried or one that you plan to use in the future.** Please feel free to contact me with your questions or concerns at CONTACT INFORMATION.*
- Gather all materials needed for the coaching session.

## During the Session

### Making it More Conceptual (15 min)

- Remind the participant that today you will be talking about how to make STEM activities conceptually rich.
- Ask the participant to summarize the lesson or activity plan that they brought.

- Ask whether they think it asks youth to engage deeply with the causes of a phenomenon or if it is more superficial.
  - *Do you think this activity can be improved to make it more conceptually deep?*
- Note: Here are some examples of deep and shallow conceptual learning.
  - Deep: modeling phenomena in a way that explains why something happens
  - Shallow: memorizing vocabulary
  - Deep: generating workable solutions based on science models or concepts
  - Shallow: making predictions without any background knowledge
- Now focus on ways to deepen the conceptual engagement presented in the lesson. Things you can focus on:
  - 1. Be wary of vocabulary instruction unless it allows youth to engage the “big ideas” first.
  - 2. Be wary of worksheets that coloring, copying, or answering a list of questions. These can be deeply conceptual, but they are usually just busywork.
  - 3. To the extent you can, try to model the kinds of thinking that scientists engage in, like asking authentic questions about the world, gathering evidence, and coming up with an explanation.

## After the Session

- Follow up with your participant to see if they have tried any of the activities you modified. Try to be supportive and helpful, not evaluative.

Want to Earn Credit? Click2Science has teamed up with Better Kid Care to provide continuing education units. Check it out at: <http://www.click2sciencepd.org/web-lessons/about>