E*ngage*

As you work through your river cutters activity, look for examples of how you could ***engage*** students by *piquing* their curiosity, *hooking* them, and *focusing* their attention on the topic. Here are some questions to guide the process.

1. How could you probe students' conceptions and misconceptions about the river cutters topic?

2. In what ways could you use students' prior knowledge to create interest and generate curiosity about the topic?

3. Come up with some strategies to elicit responses to uncover what the students know or think about the concepts addressed in this topic.

E*xplore*

As you work through your density or pH activity, look for ways to encourage ***exploration*** by allowing students to *handle and manipulate* materials, make *discoveries*, and *talk about* them with each other and you (the teacher). Here are some questions to guide the process.

1. How could experiences be structured to encourage students to gather evidence, try out hunches, and pursue answers to essential questions?

2. How could you scaffold learning experiences to allow the students to explore as much as possible on their own?

3. Come up with some probing questions you could use to redirect students' investigations when necessary.

Explain

As you work through your food web activity, look for examples of how you could help students *make sense* of their observations and questions, *describe* what they see, and give *explanations* for why things happened certain ways. Here are some questions to guide the process.

1. How could you introduce new concepts to guide students to link the concepts back to the experiences they had during exploration phase?

2. How would you assist students to use the new concepts along with evidence from investigations to build descriptions and scientific explanations?

3. What ways could you get students to justify and clarify their explanations of concepts and definitions?

Extend

As you work through your water as a solvent activity, look for opportunities for students to *apply* newly learned concepts and skills to *new situations*, and to *present and defend* their own understandings and explanations of the new situations. Here are some questions to guide the process.

1. How could you help students dig deeper into the concepts and skills acquired?

2. What are some possible new situations in which students could apply or extend the concepts and skills they learned?

3. Identify possible student misconceptions and how you could help students work through them.

Evaluate

As you work through your biodiversity activity, consider what kinds of evidence will reveal what students *understand* about the concepts, what they are *able to do*, and how they'll demonstrate a grasp of the bigger ideas? Here are some questions to guide the process.

1. Describe different ways (formal or informal) you can monitor progress so you can give students feedback on the adequacy of their ideas and inquiry procedures?

2. What kinds of assessments will provide you with the evidence that students understand the concepts and have changed their thinking or behaviors?

3. What are some strategies you could use to help students self-assess their own learning and make adjustments to their tasks?