

Questioning Continuum

(Teacher Questioning Strategies)

There are various kinds of productive questions. As students are observing, work progressively through the following question categories to inspire "deeper" levels of observation. What new "wonderings" do the observations spark?

	Rationale	Sample Questions
Questions about Details	<p>These questions help students attend to details and connect to the phenomena.</p> <ul style="list-style-type: none"> • First have students take a "macro" view of the whole scene. Then have them move closer or otherwise shift focus so they have a closeup view of a small area. • Ask, What more do you notice when you shift your perspective? • Students should observe using their senses and tools, such as hand lenses, thermometers, or a microscope to extend their senses. • Ask, what new information did you uncover? 	<p>What does it do? What does it feel like? What does it look like? What do you hear, taste, smell? What does this make you think of?</p>
Measuring & Counting Questions	<p>These questions can be answered directly from the activity experience. Children can check their answers themselves.</p>	<p>How many? How long? How often? Which one do you have more of? Is one object longer/shorter than another?</p>
Comparison Questions	<p>These questions can help students to focus their observations, as well as to classify, categorize or order the materials or their findings.</p>	<p>In what ways are these different? In what ways are these the same? Can you describe an order or pattern to _____ ? In what ways can you classify / categorize _____ ? What does it remind you of? What patterns did you notice?</p>
Prediction Questions	<p>These questions help students plan strategies for exploring new materials, properties, or events.</p>	<p>What do you think (predict) will happen next? Why? What do you think would happen if ____ ? What are some different things you could try?</p>
Problem-Posing Questions	<p>These questions involve students in problem-solving situations. They support inquiry, design, critical thinking and experimentation. These questions must be preceded by exploration of the materials, in order to investigate first what possibilities and impossibilities there are. These are more complicated prediction questions.</p>	<p>Can you find a way to _____ ? Is there anything else you could do/use?</p>
Reasoning Questions	<p>These questions stimulate students reasoning and help them to draw conclusions and generalizations; to expand or change their ideas.</p>	<p>What do you think is happening and why? How could you explain _____ ? What is your hypothesis? How might someone else explain or interpret this same phenomenon? What can you do next time? What reasons did you have....? What else might have caused? Why do you suppose.....? How do you decide what to do next? What evidence do you have?</p>
Metacognitive Questions	<p>The following questions help students reflect on their own thinking as they work through the processes of the activity.</p>	<p>How do you know? What do you wonder? What helps you do science? How do you know when to stop, that you are finished? Do you ever give up (abandon) your idea / question / explanation? When? Why? What makes you reverse your explanation? Why do you think that? What were your assumptions?</p>