

## STEPS TO CONDUCTING A GUIDED INQUIRY LESSON

\*Guided Inquiry lessons are meant to take place over several days. Do not try to do all steps in 1 day. It is too overwhelming for the teacher and students!

### STEP 1: Display Big Idea & Standard Addressed

TIME: Day 1, approx. 5 min.

The big idea is simply the standard being addressed throughout the unit written in student friendly terms. It should be displayed in the class throughout the unit usually near the science working word wall.

Ex. *BIG IDEA: Materials come in different forms (states) including solids, liquids, and gases. CA Standard: 1a Students know solids, liquids, and gases have different properties*

### STEP 2: Kit Inventory

TIME: Day 1, approx. 15-20 min. depending on grade level

Gather all materials needed to conduct the inquiry before doing the inventory (this may be materials for several experiments within a given unit). Showcase each item to the class asking probing questions about the items. Be sure to name each item, label it, and place it on your working science word wall. Whenever possible, use the real objects on the wall. This is an opportunity to engage your students in the upcoming unit. Let them make conjectures about the lessons to come and more importantly it is a chance to build vocabulary.

Possible probing questions include: *What do you think this is? What do you think it is used for? How do you know what it is made of? Do you know of any other objects that are similar to this?*

### STEP 3: Engaging Scenario

TIME: Day 1, approx. 5 min.

Read and discuss the engaging scenario being used to capture student interest for the inquiry. An engaging scenario is how you present the problem to be addressed through a story format. You will need to guide students to identify the problem faced in the engaging scenario. The identified problem will lead to a focus question.

### STEP 4: Focus Question

TIME: Day 2, approx. 5-10 min.

Using guiding questions, lead the students to identify the problem in the engaging scenario. You may need to provide the question to the students. Write the focus question on the board for students to copy into their notebooks. The focus question usually is a *how can we find out* or *how do we....?* type of question. Leave the focus question displayed on your science wall near the big idea throughout the experiment.

Ex. Guiding questions for teachers

*What is it we need to investigate? What is the problem that needs to be solved?*

Sentence starter for focus question: *How can we find out \_\_\_\_\_?*

### STEP 5: Prediction

TIME: Day 2, approx. 15 min.

Review the focus question from the previous day. Have students offer suggestions on how to solve the problem. This is an important time for a class discussion. After most of the class has shared their ideas, provide time for students to write their predictions answering the focus question in their science notebooks.

Guiding questions for teachers: *How do you think you can solve the problem? What do you think you can do to help solve the problem?*

Sentence starter: *I predict that if we/I \_\_\_\_\_ then \_\_\_\_\_ because \_\_\_\_\_.*

### STEP 6: Procedure and Data Collection

TIME: Day 3, approx. 30-60 minutes, depending on your experiment

Plan and discuss how you will record the information students are going to observe in the experiment. Depending on the age of the students, you may need to provide charts or concept maps for students to fill in as the inquiry takes place.

*Student drawings, graphs, diagrams, and charts are all examples of appropriate data collection materials.*

#### **Textbook Strategies and Making Meaning Conference**

Data Collection is the time you will use the science text and other materials to support the concepts being taught. Making meaning conference is a time for discussion of material learned during the investigation. Make connections and review more vocabulary between readings and investigation. Depending on the lesson, making connections and meaning of the concept may go into the next day's lesson.

### STEP 7: Claims & Evidence

TIME: Day 4 approx. 15-30 minutes

Discuss what happened in yesterday's experiment and use any textbooks or materials to further understanding. Provide guiding questions to your students

that they will answer in declarative sentences to make claims based on information gathered during the investigation and textbook reading.

Guiding questions: *How do we know this? What did we do to find out this? Where do you see in your data collection the information to support what you learned? Why do you think...?*

Sentence starters for claims based on evidence: *We/I know that \_\_\_\_\_ because \_\_\_\_\_.*  
*We/I claim \_\_\_\_\_ because \_\_\_\_\_.*

### STEP 8: Conclusion

TIME: Day 5

Review the focus question. Have students reread their predictions. Were they able to solve the problem? Students write a sentence explaining if the evidence supported or did not support their predictions.

Sentence starters: *We wanted to know \_\_\_\_\_.* *We/I predicted that \_\_\_\_\_.*  
*We/I found out that \_\_\_\_\_.* *The evidence did/did not support my prediction because \_\_\_\_\_.*

### STEP 9: Reflection

TIME: Day 5

Read the big idea to the class. Ask students what evidence they have that supports the big idea. Students write ideas on what they learned about throughout the investigation. Ask students to write something else they want to know about the topic.

Possible sentence starters: *What would happen if \_\_\_\_ ? I'm wondering if \_\_\_\_\_.* *I learned that \_\_\_\_\_ and I would like to know \_\_\_\_\_.*