

Setting up a Driving Questions Board

A Driving Questions Board (DQB) is one of several possible sensemaking strategies that can help students develop and organize questions they have about the Anchoring Phenomenon or problem. As students refer to the DQB throughout the unit, they use their experiences with the three dimensions of the NGSS to ask, answer, modify, and develop new questions. DQB encourage student engagement and ownership of learning by valuing students' background knowledge and curiosity. Other strategies designed for this purpose are KWLs, Anticipation Guides, and Talking Drawings.

Determine a place for your DQB. Choose a location that students can easily return to as they develop their understanding of the unit phenomena and problems.

Begin the unit by reading aloud the introductory vignette in the Student Book, sharing the Unit Issue and Anchoring Phenomenon.

Step 1: After reading the introductory story in the Student Book, post the Unit Issue. Ask students to relate this issue to their own lives and experiences. **Step 2:** Post the Anchoring Phenomenon, and ask students to verbally brainstorm questions they have about this phenomenon. Help them relate the phenomenon to the issue and explain that understanding the phenomenon will help them understand the science concepts related to the issue.

After initial student questions have been generated as a class using the Unit Issue and Anchoring Phenomenon, move to **Step 3:** Give students time to write their questions in their notebooks. While they do this, post the Unit Issue and Anchoring Phenomenon cards at the top of your DQB if you haven't already done so. **Step 4:** Have students share and discuss their questions with their group. Encourage students to prioritize the most important questions from their group to share with the class. Students can write these questions on sticky notes or index cards that can be later displayed on the DQB. You can use different colors to represent different classes.

Step 5: Work with the class to categorize students' questions into groups, and then use the unit's suggested driving questions to organize these categories or co-construct similar driving questions with the class. **Step 6:** Have students organize their group's questions at their desks by using the driving questions as a guide. Have students share their questions for each driving question category with the class and then place them accordingly on the DQB. As students' questions are rearranged under the driving questions on the board, edit for duplicates as needed. **Step 7:** If you find that one or more of the driving questions does not match up with any student-generated questions, give groups time to develop additional questions around the topic either at this point or before you introduce the activities that address that particular driving question. You may want to create an additional category for questions your students develop that do not fit with any of the driving questions. Tell students that they will investigate, revisit, and add to their questions as they go through the unit.

Use the following questions to encourage sensemaking when revisiting the DQB throughout the unit. You can rearrange, add, or remove questions from the DQB as the sensemaking discussions dictate.

How is this unit related to other topics that we have studied before?

Can you use a crosscutting concept to explain the similarities between this topic and another topic we have studied before?

How does this phenomenon connect to the overall issue?

How are these phenomena related?

Which questions have we answered? What evidence from class can you use to answer them?

How is your question related to another question?

How is this topic important to our community?

How is this topic important to you or someone you know?

What new questions do you have?

What do you already know that you can apply toward understanding this phenomenon or problem?

Which question do you think is the most important to answer to help you understand the phenomenon? Why?