



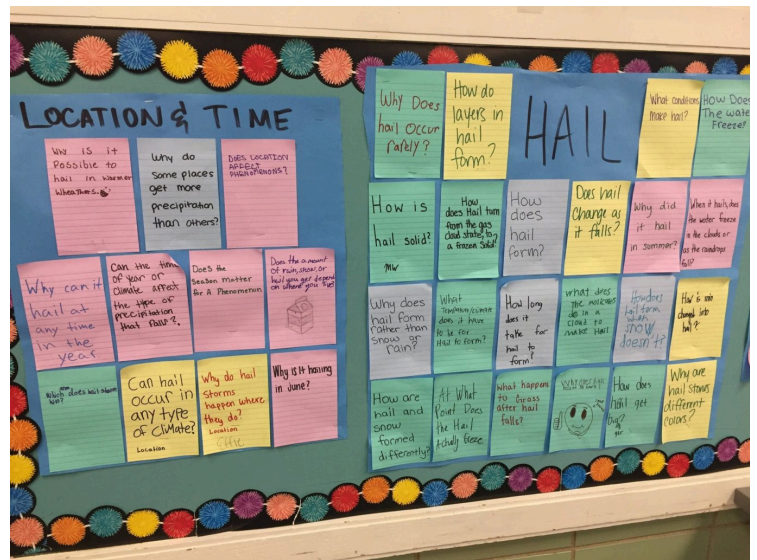
Driving Question Board

By: State Science Education Coordination Committee | Aug 2024

BACKGROUND

Student questions serve as a powerful tool to guide and structure science education. They foster inquiry, connect learning to real-world contexts, integrate scientific practices, and promote critical thinking skills, ultimately contributing to a more effective and meaningful science education experience for students.

A driving question board is a tool to generate, record, and revisit student questions throughout a phenomenon-based unit/storyline. The purpose of a driving question board is to direct student investigation of a phenomenon and to support student-centered science learning. A publicly displayed driving question board allows students to see how their questions are driving the unit while capturing student's wonderings about a phenomenon. It encourages inquiry and fosters a sense of ownership.



CLASSROOM APPLICATION

When observing a classroom in which the instruction utilizes a driving question board, the following **student actions** should be visible:

- At the beginning of the unit, students generate questions about the anchoring phenomenon.
- Students organize their questions into sub-categories, which can provide a pathway for investigating the anchoring phenomenon.
- Students communicate their thoughts, findings, and reflections related to the driving question effectively, either through discussions, presentations, or written work.
- Throughout the unit, students revisit their questions, discuss answers, revise questions, and add new questions to the board.
- Students modify their understanding of anchoring phenomena using supportive phenomena and/or life experience.
- Students explore the driving question from multiple disciplinary perspectives, recognizing the interconnected nature of scientific knowledge.

To support instruction that utilizes a driving question board, **teachers' plan** by:

- Selecting an anchoring phenomenon and introductory activity that is engaging and robust enough for students to generate meaningful questions.
- Guiding students to organize questions into categories and sequencing categories.
- Creating a physical (butcher paper, whiteboard area) or digital (padlet, google slides, etc.) board that all students can access throughout the unit.
- Revisiting the anchoring phenomenon and driving question board throughout the unit to make connections between student questions and learning activities.
- Allowing students to answer their questions and add additional questions.
- Continuously monitoring student responses and adjusting instruction as needed to address misconceptions, provide additional support, or offer extensions for further exploration.
- Exploring ways to integrate driving questions across multiple disciplines to create a holistic and interconnected learning experience.
- Creating opportunities for collaborative learning, such as group projects, discussions, and peer interactions, to enhance students' ability to work together in addressing the driving question.

IMPLEMENTATION RUBRIC

Basic	Emerging	Effective	Exceptional
Question board contains teacher questions about anchoring phenomena.	Question board contains student questions about anchoring phenomena.	Question board contains student questions about anchoring phenomena which are organized into categories.	Question board contains student questions about anchoring phenomena which are organized into categories and used to drive a cycle of inquiry, deepening understanding of the phenomena.
Question board utilized only at the beginning of the unit to brainstorm student questions.	Question board is revisited throughout the unit to stimulate discussion and reflection.	Question board is revisited and edited throughout the unit to process new knowledge and develop new questions.	Question board serves as a central hub throughout the unit, driving ongoing investigations and deeper knowledge acquisition.

RESOURCES

[Using Effective Driving Questions in Science to Help Make Sense of the World](#) (Akgun, 2022)

[Open Sci Ed Professional Development Resources on Driving Question Boards](#)

[The Driving Question Board](#) (NSTA)

[DQB One-Pager](#) (Kentucky Department of Education)

[Keys for Driving Question Boards](#), National Center for Science Education



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