Kentucky Department of
EDUCATION

Improving Student Engagement in the Science Classroom Using a Driving Question Board (DQB)

Design of Module

- The Improving Student Engagement in the Science Classroom Using a Driving Question Board module, contains materials to be used in professional learning sessions at the district, school or department level. This module is intended to provide guidance in the successful implementation of a driving question board, supporting the three-dimensional student learning called for in the *Kentucky Academic Standards (KAS) for Science*.
- This module is divided into four sessions. It is recommended that the sequence of the sessions be maintained since each session builds upon one another. Skipping parts may result in less effective learning about how the driving question board can support coherence and equity in the science classroom. Within each session, participants will be planning their next steps for implementing a driving question board.
- This module is designed to be administered in one and a half to two-hour professional learning sessions; however, the timeline and work sessions can be adjusted to best fit the structures schools and districts already have in place.
- Module facilitators may include, but are not limited to, a department chair, teacher leader or curriculum specialist, district leadership, school administrators, higher ed facility, etc. With that in mind, the facilitator notes include content information and potential talking points intended to provide support to a facilitator who does not have extensive science experience.

Goals of Module:

- Explain what a driving question board is and understand its purpose in the science classroom.
- Identify ways that the driving question board can build a community of learners.
- Analyze how a cohesive storyline can be built around an anchoring phenomenon.
- Generate ideas for how a driving question board can be used as a formative assessment tool.

Session A: What is a driving question board and what is its purpose in the science classroom?

- This session provides the foundational understanding of what a driving question board is and its purpose in the science classroom through the exploration of two articles.

Session B: How does the use of a DQB foster a community of learners in terms of student engagement and motivation?

- Using an open educational resource, the participants will engage in a learning experience symmetrical to the classroom centered around an anchoring phenomenon which leads to the development of a DQB.
  This session provides the participants an opportunity to consider how the DQB impacts the student experience in terms of student engagement and/or motivation for learning.

Session C: How can a DQB anchored in a phenomenon be used to build a cohesive storyline?

- This session provides a look into the connections between the *Kentucky Academic Standards for Science* and the student generated questions on the DQB around the anchoring phenomenon.
- Participants will analyze how a cohesive storyline can be built around an anchoring phenomenon.

Session D: Why should the DQB be used as a formative assessment tool to foster an equitable learning community?

- This session will encourage participants to read two STEM Teaching Tools and generate ideas for how a driving question board can be used as a formative assessment tool.

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