



Using an Anchoring Phenomenon to Drive Three-Dimensional Teaching and Learning

Design of Module

- The Using an Anchoring Phenomenon to Drive Three-Dimensional Teaching and Learning module, contains materials to be used in professional learning sessions at the district, school or department level. This module aims to guide educators in implementing authentic learning experiences centered on phenomena that engage students in using all three dimensions of the *Kentucky Academic Standards (KAS) for Science* to make sense of the world.
- Utilizing an open educational resource, this module provides participants with a learning experience symmetrical to the classroom. The evidence-based resources included in this module will assist educators in creating authentic, relevant, phenomenon-based learning opportunities for students.
- This module is divided into five 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 anchoring phenomena drives the learning in the science classroom. Within each session, participants will be planning their next steps for implementing phenomena-based instruction.
- Designed for one and a half to two-hour professional learning sessions, the module allows for adjustments to the timeline and work sessions to accommodate the structures of schools and districts.
- Module facilitators may include, but are not limited to, a department chair, teacher leader or curriculum specialist, district leadership, school administrators, higher ed faculty, 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:

- **Develop** a working definition and criteria for identifying phenomena.
- **Experience** how launching an anchoring phenomenon can support students in sensemaking.
- **Explore** how phenomena-based instruction helps students deepen their science ideas and skills in alignment with the *Kentucky Academic Standards (KAS) for Science*.
- **Build** a cohesive storyline around an anchoring phenomenon.
- **Identify** and **explore** local phenomena to connect and bundle disciplinary core ideas.

Session Focus Questions:

Session A: What is the definition of "phenomena" in the context of science education?

Session B: How does the launch of an anchoring phenomenon engage all students in sensemaking?

Session C: How might utilizing an anchoring phenomenon assist students in growing their science ideas and skills within the context of the *Kentucky Academic Standards (KAS) for Science*?

Session D: Why is a storyline centered around an anchoring phenomenon crucial for achieving coherence from the students' perspective?

Session E: How might exploring and identifying local phenomena support both teachers and students?