Qualities of a Good Anchor Phenomenon for a Coherent Sequence of Science Lessons

Instructional sequences are more coherent when students investigate compelling natural phenomena (in science) or work on meaningful design problems (in engineering) by engaging in the science and engineering practices. We refer to these phenomena and design problems here as 'anchors.'

- ☐ A good anchor builds upon everyday or family experiences: who students are, what they do, where they came from. It is important that it is compelling to students from non-dominant communities (e.g., English language learners, students from cultural groups underrepresented in STEM, etc.).
- ☐ A good anchor will require students to develop understanding of and apply multiple NGSS performance expectations while also engaging in related acts of mathematics, reading, writing, and communication.
- ☐ A good anchor is too complex for students to explain or design a solution for after a single lesson.
    - ☐ The explanation is just beyond the reach of what students can figure out without instruction.
    - ☐ Searching online will not yield a quick answer for students to copy.
- ☐ A good anchor is observable to students. Observable can be with the aid of scientific procedures (e.g., in the lab) or technological devices to see things at very large and very small scales (telescopes, microscopes), video presentations, demonstrations, or surface patterns in data.
- ☐ A good anchor can be a case (pine beetle infestation, building a solution to a problem) or something that is puzzling (why isn't rainwater salty?) or a wonderment (how did the solar system form?).
- ☐ A good anchor has relevant data, images, and text to engage students in the range of ideas students need to understand. It should allow them to use a broad sequence of science and engineering practices to learn science through first-hand or second-hand investigations.
- ☐ A good anchor has an audience or stakeholder community that cares about the findings or products.

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