Appendix F

Things to Avoid in a 5E Lesson

Engage

*Goal:* To get the students curious and interested in the lesson topic and (usually) to establish the science inquiry question for the lesson.

Things to avoid:

* Using activities that don’t raise questions or provoke curiosity
* Basing a lesson on one or more questions that students already know the answer to
* Giving away the key lesson concepts in the lesson engagement
  + In alignment with the “Figuring Out” principle of inquiry, the lesson concepts are supposed to be figured out by the students in Explore/Explain; the teacher is not supposed to reveal the lesson concepts at the very beginning of the lesson.
* Starting the lesson with vocabulary words and definitions
  + Although certain terms will occasionally be defined in “engage”, most vocabulary words can be defined more naturally when they first appear in the lesson.

Note: The “engage” is not just whatever you choose to do first in the lesson. This portion of the lesson has a specific goal, stated above.

Explore

*Goal:* To explore students’ ideas about the lesson topic and allow the students to collect data that will help the class answer the inquiry question.

Things to avoid:

* Having students collect data without making predictions and sharing their reasoning for their predictions
* Using activities that don’t have any hands-on student involvement (experimenting, drawing, modeling, etc.).

Explain

*Goal:* To allow the students to use their data (experimental data from the lesson, prior experiences, etc.) to answer the science inquiry question.

Things to avoid:

* Interpreting the data for the students
  + The students are supposed to be doing the explaining, not the teacher!
* Explaining the data without explicitly addressing the science inquiry question

Extend

*Goal:* To solidify and extend the students’ understanding of the lesson concepts by allowing them to apply those concepts to new situations.

Things to avoid:

* Introducing brand new concepts that are deserving of their own 5E lesson plans

Evaluate

*Goal:* To assess the degree to which the students have learned the key lesson concepts

Things to avoid:

* Assessing a small portion of the key lesson concepts, rather than the complete set of concepts
* Assessing ideas that are only tangentially related (or unrelated) to the key lesson concepts