iHub

Engaging in a Co-Design Activity

Samuel Severance

University of Colorado Boulder

This work was supported by a grant from the National Science Foundation (Award #1147590). The opinions expressed herein are those of the authors and do not necessarily reflect those of the NSF.

Aim

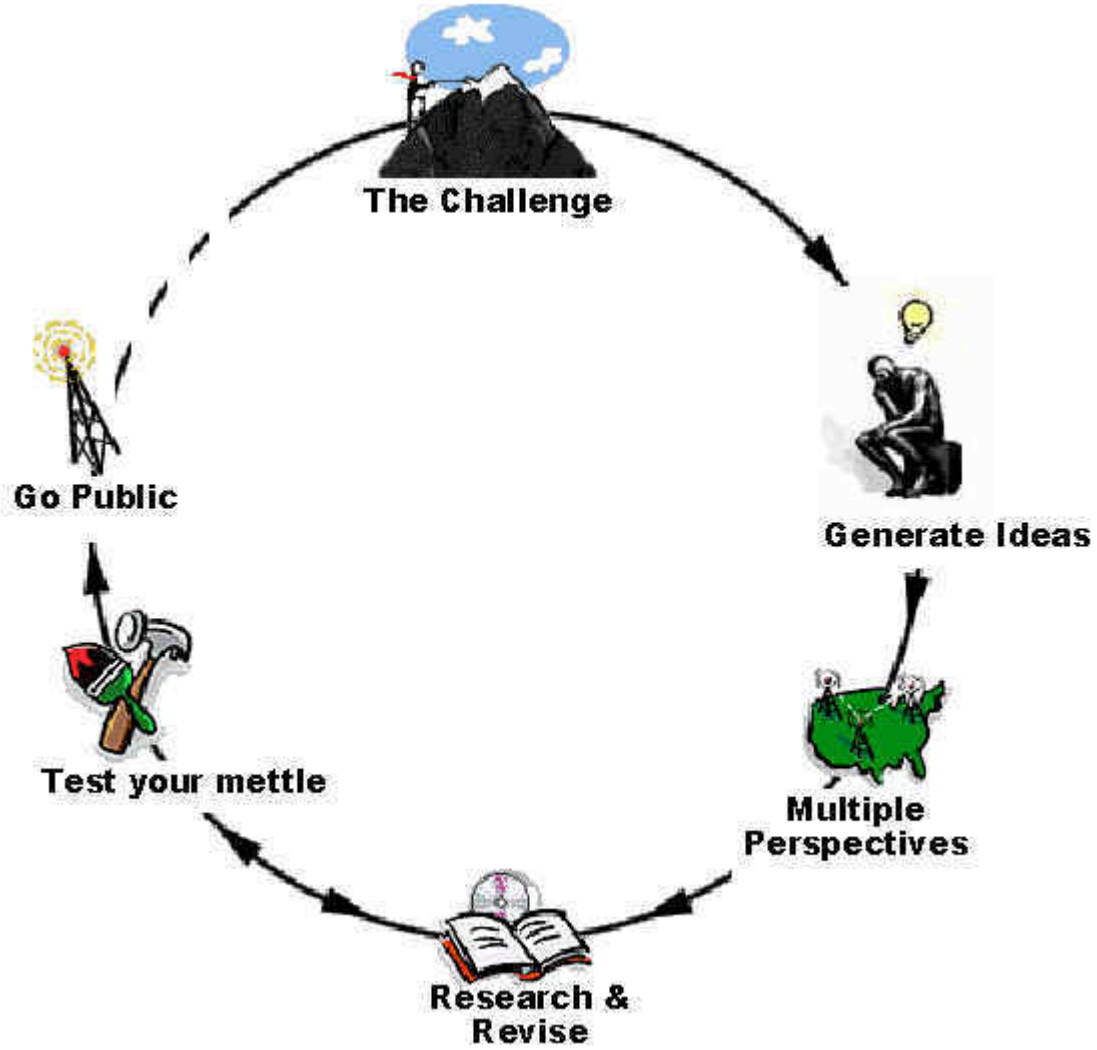
- To decide on what kind of ecosystem(s) we'll model as part of a culminating assessment activity, as well as the key features that need to be in that model
  - Focused on **phenomenon or phenomena***
  - Of sufficient complexity to build understanding toward conceptual flow diagram we created

*Anchoring Phenomena

Qualities of a good phenomenon (Reiser, 2014)

- A puzzling observable event or process
- Generates student interest and questions
- Intersects with numerous PEs
- Can be explored through science and engineering practices

Experiencing an Instructional Model: Challenge Cycle



John Bransford

Dan Schwartz

Generate Ideas

What are some ecosystems (real or fictional) for which students could develop and revise models to help explain some **phenomenon**?

IDEO's Rules for Brainstorming

Defer Judgment

Encourage wild ideas

Build on the ideas of others

Stay focused on the topic

One conversation at a time

Be visual

Go for quantity

Multiple Perspectives

Conduct research in small groups (30 min)

- Unpacking LS-2 group (Jeff)
- Student interest and local connections group (Sam)
- Student difficulties group (Heather)

Each group records their research findings

Research and Revise

Jigsaw into new hybrid groups (30 min)

- Share what was learned
- Select 1-2 ecosystem models that could anchor the unit
- Prepare a 2-minute poster presentation that identifies your choice of ecosystem model(s) and outlines your justifications

Go Public

Give your proposal to the group

- Initial votes for ecosystems (2 sticky dots each)

Develop consensus through discussion:

- What might be a **phenomenon*** within an ecosystem that could anchor the whole unit?
- What other **phenomena** might be good to include and model?

*Anchoring Phenomena

Qualities of a good phenomenon (Reiser, 2014)

- A puzzling observable event or process
- Generates student interest and questions
- Intersects with numerous PEs
- Can be explored through science and engineering practices

References

Reiser, B. (2014, April). Designing coherent storylines aligned with the NGSS for the K-12 classroom. *NSELA Conference*. Presentation in Boston, MA.

Schwartz, D. L., Lin, X. D., Brophy, S., & Bransford, J. D. (1999). Toward the development of flexibly adaptive instructional design. In C. Reigeluth (Ed.), *Instructional-design theories and models: A new paradigm of instructional theory* (pp. 183-213). Mahwah, NJ: Erlbaum.