

PROJECT OVERVIEW

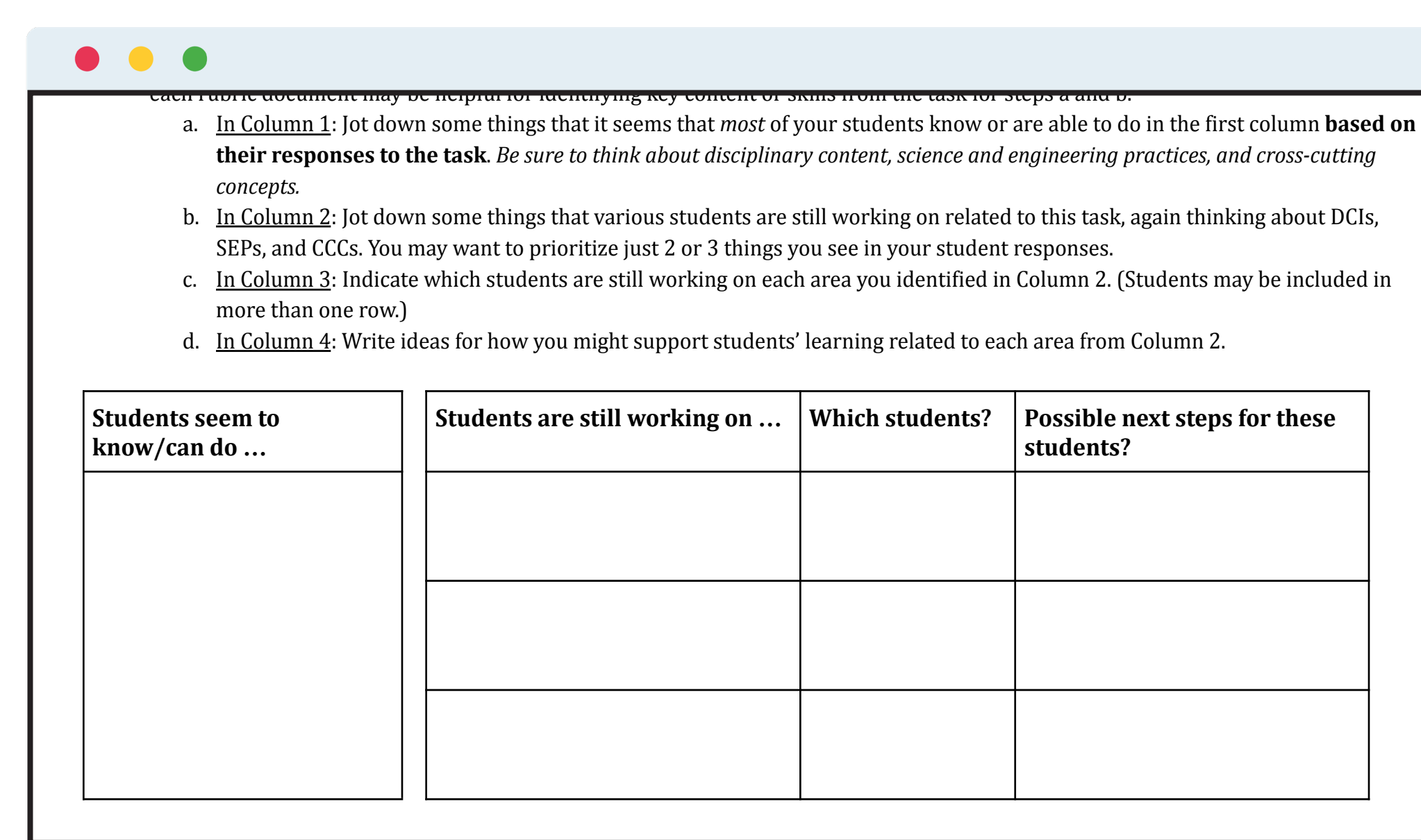
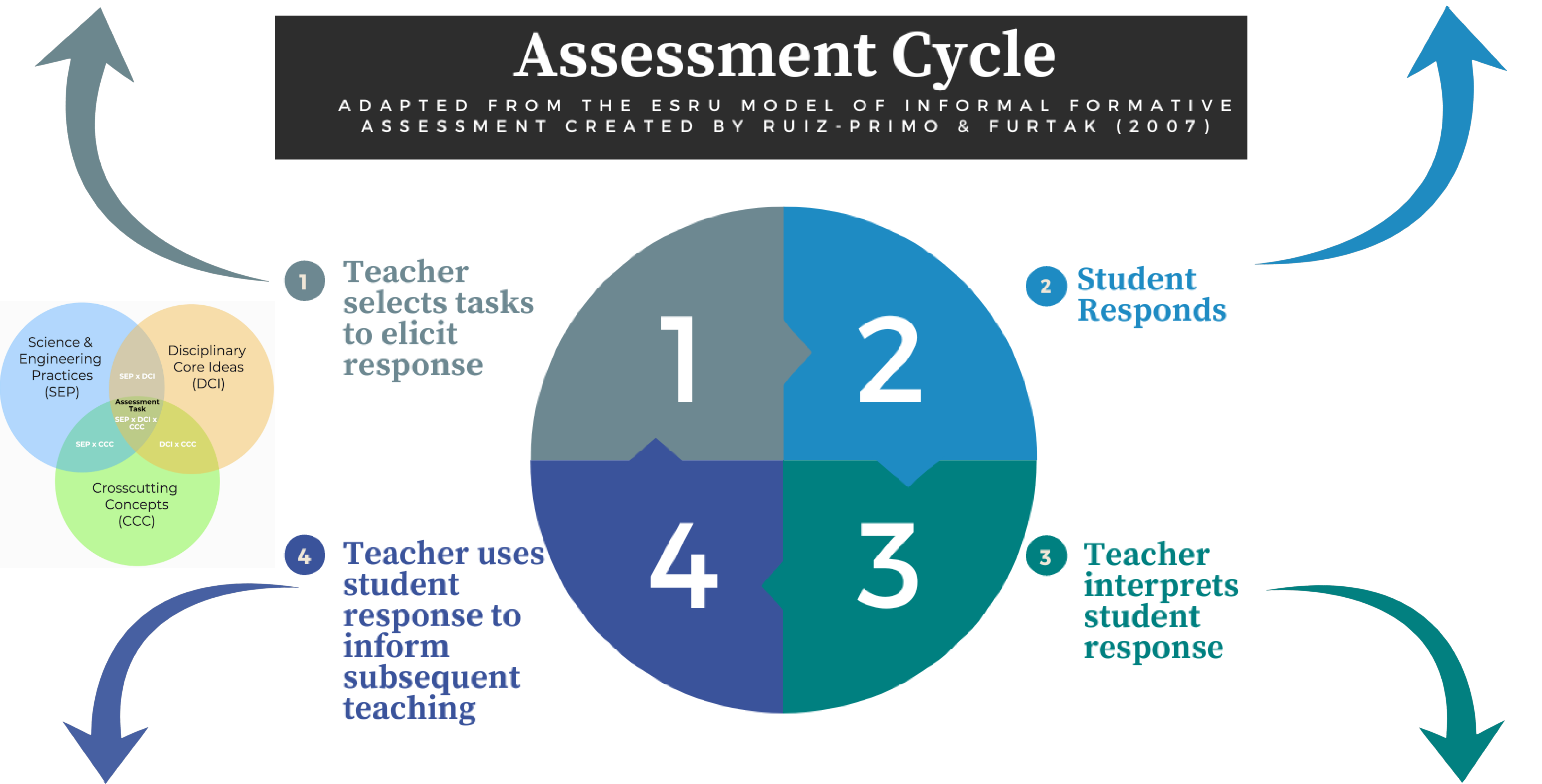
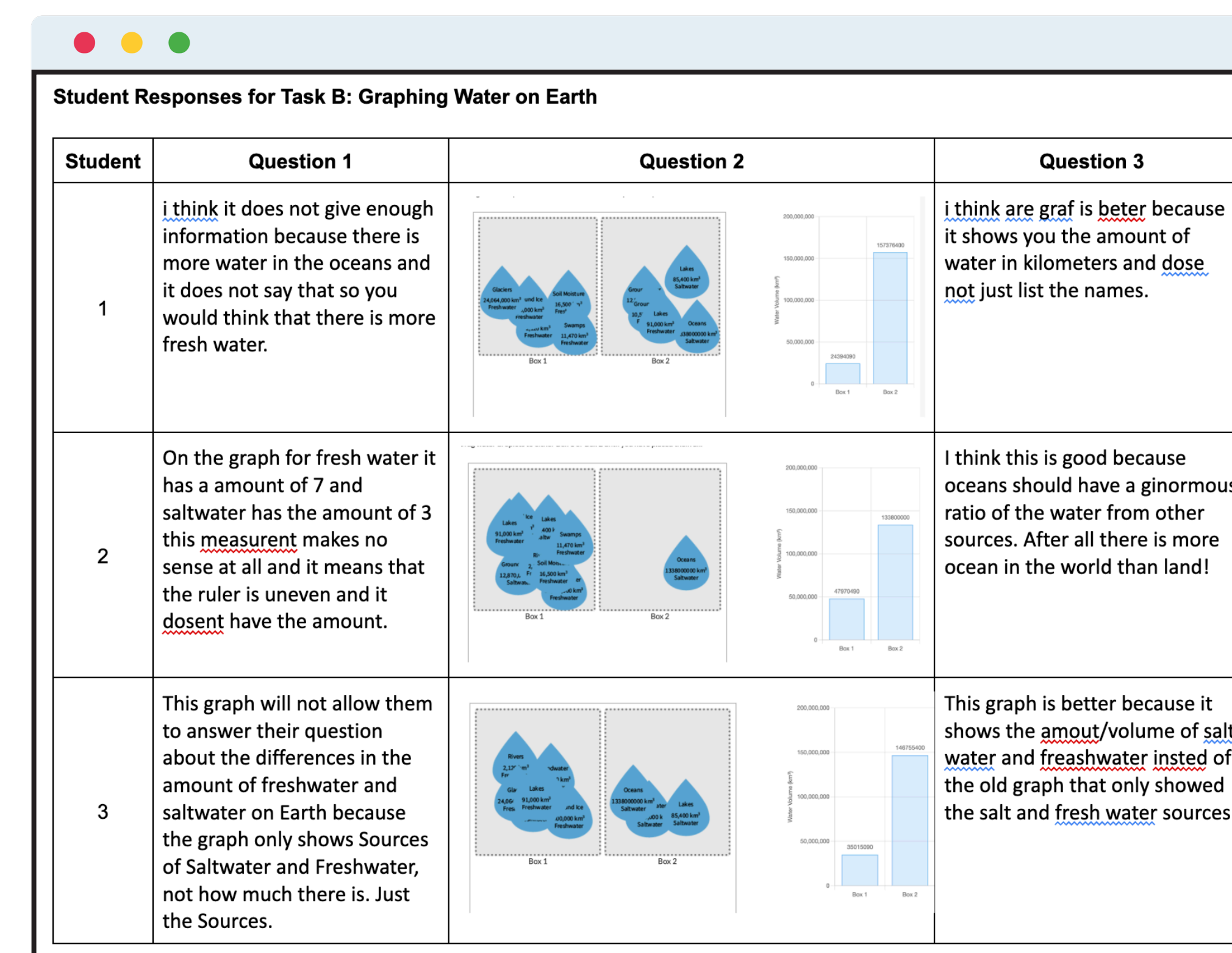
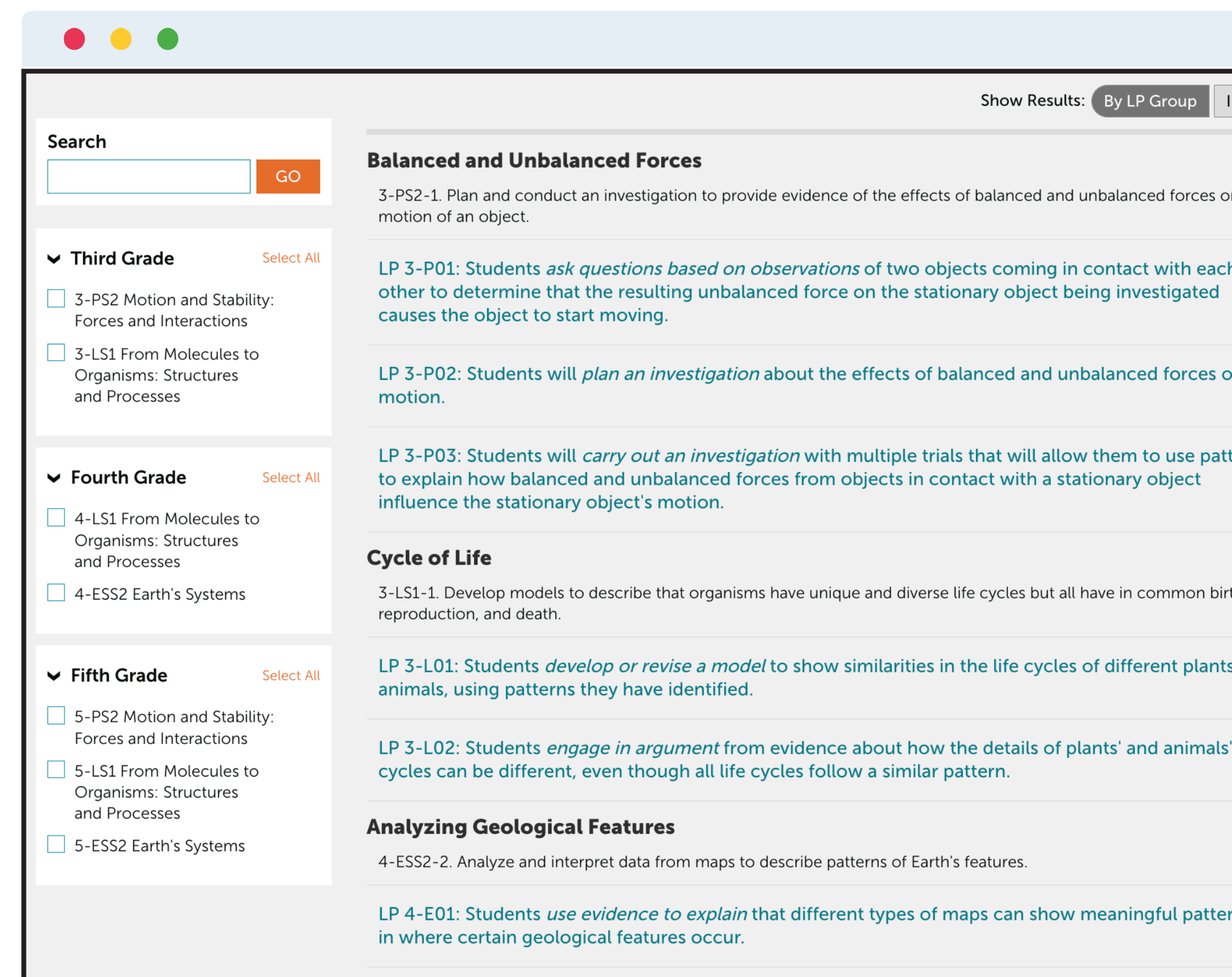
- NSF DRK-12 Early-Stage Design and Development in the Assessment strand
- Collaboration between University of Chicago and University of Illinois at Chicago

Driving Questions and Design Challenges:

- How well do these assessments function with respect to aspects of validity for classroom use, particularly in terms of (a) indicators of student proficiency and (b) tools to support teacher instructional practice?
- In what ways do providing these assessment tasks and rubrics, and supporting teachers in their use, advance teachers' use of formative assessment to support 3-dimensional science instruction?
- Development Challenge #1: Adapting and applying a previously developed model for building 3-dimensional middle school science assessments to the elementary level.
- Development Challenge #2: Applying a professional learning community approach, both in person and online, to build teacher collaboration and capacity to use assessments in a formative manner.

Major Project Work:

- Create 47 NGSS-aligned elementary Science Assessment Tasks for formative use in grades 3–5.
- Work with 9 Teacher Collaborators and 20 Teacher Implementers in the greater Chicagoland area.



Criteria	Issue in Student Responses	Possible Prompts/Questions
1	The student places one or more saltwater sources incorrectly with freshwater sources in a box. OR The student places one or more freshwater sources incorrectly with saltwater sources in a box.	How did you decide where to place each water drop?
2	Student interprets the graph incorrectly, thinking that there is more freshwater than salt water on Earth.	What does one bar on the graph represent? Is one bar always equal to another bar?

Enacting NGSA Tasks in Classrooms

Teacher Implementers completed enactment questionnaires before and after using each NGSA task with their students (AY 2022–23). Analysis of these data is ongoing, but there are early indicators that:

- There is an approximately even split between students working individually vs. pairs or small groups.
- The majority of uses were based on connections to science content knowledge that was being taught.
- Teachers occasionally used tasks to make ELA connections or other science connections (e.g., crosscutting concepts).

*“This task will build off the previous NGSA task we completed last week. I’ve already taught our unit on Ecosystems, Interactions, Energy & Dynamics. I’m using this as an opportunity to see if my students are able to apply the ideas they previously learned. This also extends a bit beyond what was taught in class, so students will have more exposure to a real world science situation.”*

*“We’ve begun talking about percentage of salt and fresh water on earth by using gallon jugs and having the kids guesstimate how much of each we have. I plan on having them compare their initial ideas to what they graph in this activity.”*

Promising Trend: Teachers often had students discuss the task and their responses after completion whole-class or in peer groups). This is more frequent later in the year (after more experience with tasks).

*“After they finished in partners, students joined another pair to share what they learned. They talked about what responses they had in common and what differences they found in their work.”*

Promising Trend: Overall, students are engaged and like the tasks.

*“Students really enjoyed this activity, and they were more confident this second time around. Their answers were more elaborate, conversations went more in depth, and many students recorded their answers using the microphone in addition to typing up their responses.”*



UPCOMING WORK:

- Multi-lingual resources
- Classroom Observations
- Adjustments for Teacher UX

QUESTIONS or COMMENTS?

Please email us: [castrickland@uchicago.edu](mailto:castrickland@uchicago.edu)

*In professional learning sessions, Teacher Implementers built community, conceptualized, and co-created resources to support their interpretation of aggregate student work. These resources helped them to avoid their tendencies to become hyper-focused on individual student responses (with individual scores and feedback) and helped teachers shift focus to instructional next steps to improve the entire class's science understanding.*



Accessible Teaching, Learning, & Assessment Systems



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