I-SMART Goal 2 Scenario-based Tasks

Chapter 2: Testlet Co-design

Overview of Chapters

1. Introduction
2. Testlet co-design
3. Testlet prototype walkthrough
4. Think-aloud study
5. What we learned

I-SMART Goal 2

Design, develop, and evaluate learning map model-based assessments that incorporate science disciplinary content and science and engineering practices in highly engaging, universally designed, technology-delivered formats.

Focus of This Study

- Co-design and evaluate testlets for “secondary population" students
- Scenario-based tasks to evaluate range of depth of knowledge (DOK)
- Deeper application of UDL principles
- Greater emphasis on formative use of instructionally embedded testlets


Why co-design?

Co-design for equity and agency

Co-design gives students a say in how they want to show their learning and interact with concepts.

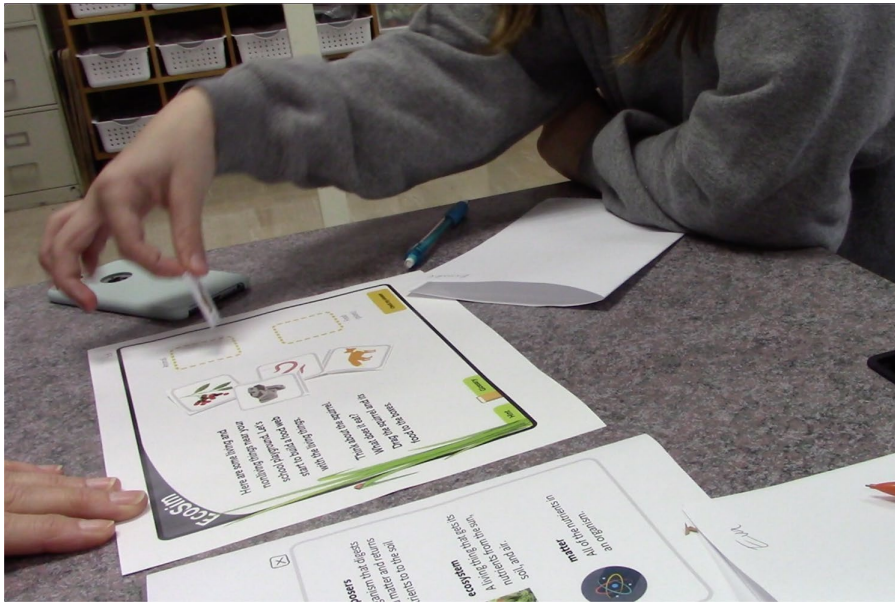
Co-design for formative feedback

Lower fidelity (rough) prototypes

- invite feedback and out-of-the-box thinking
- make thinking and learning visible for everyone — designers, researchers, students

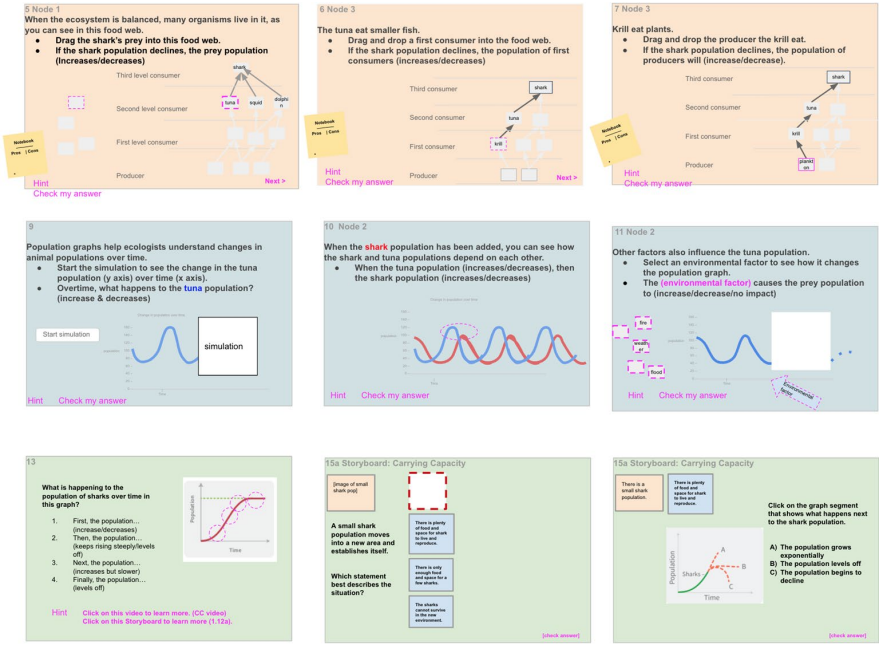
The co-design process

1. Rough concepts
2. Two rounds of paper prototypes
3. Refined & coded interactive prototypes



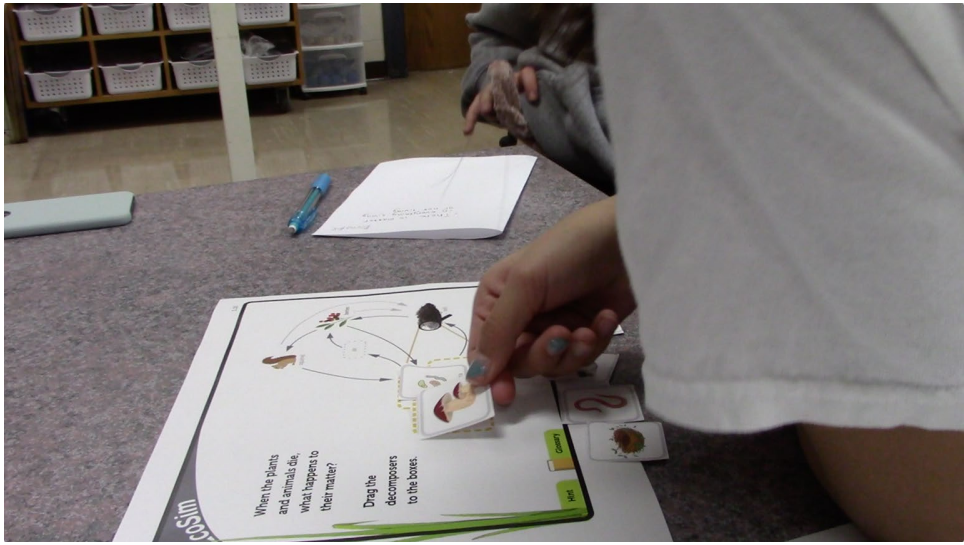
1. Rough concepts

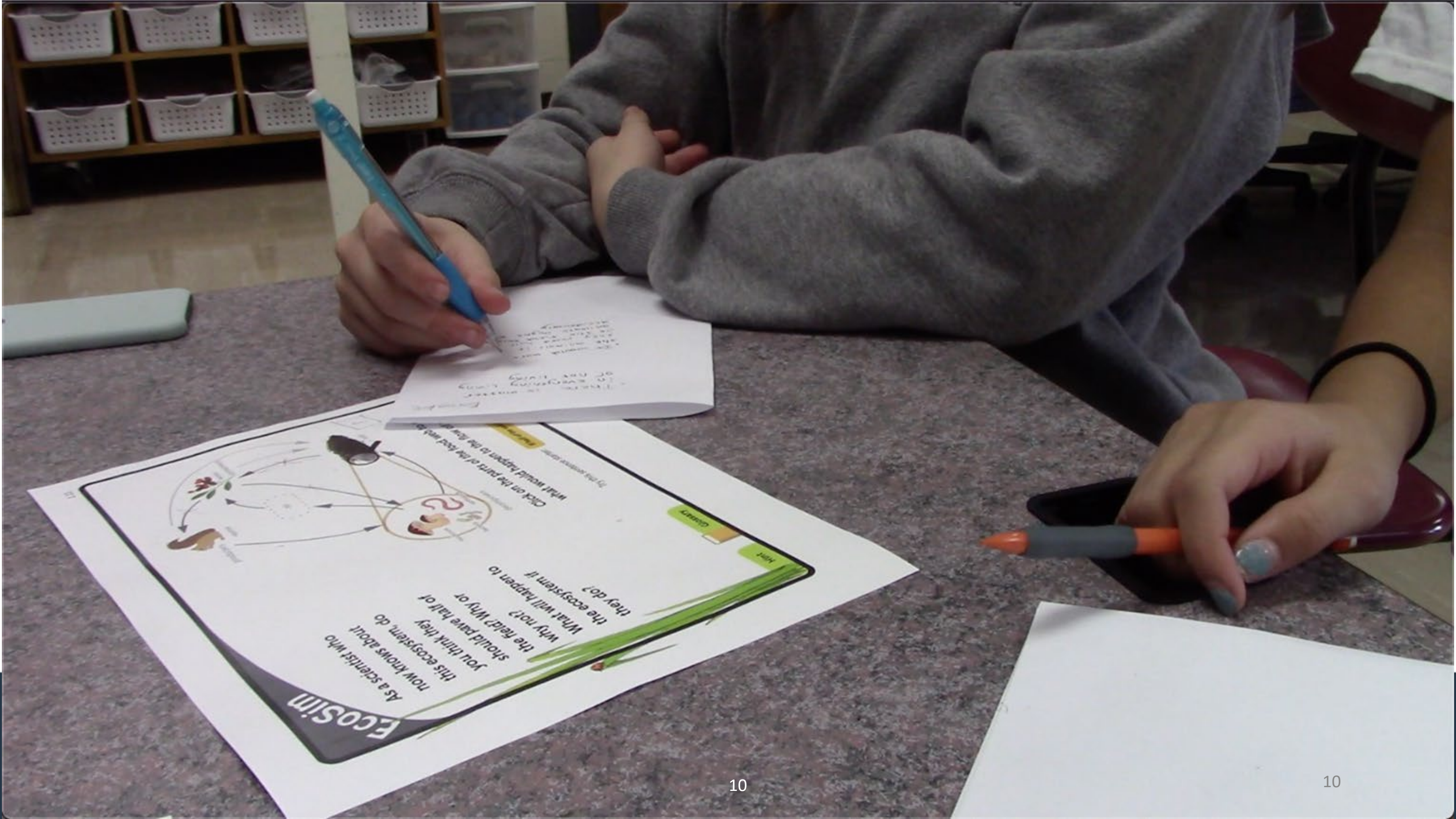
Rough concepts leveraged UDL to provide students multiple means for students to demonstrate their knowledge, skills, and understandings.



2. Paper prototypes

The students operated on two rounds of paper prototypes, providing us with formative feedback and new ideas.



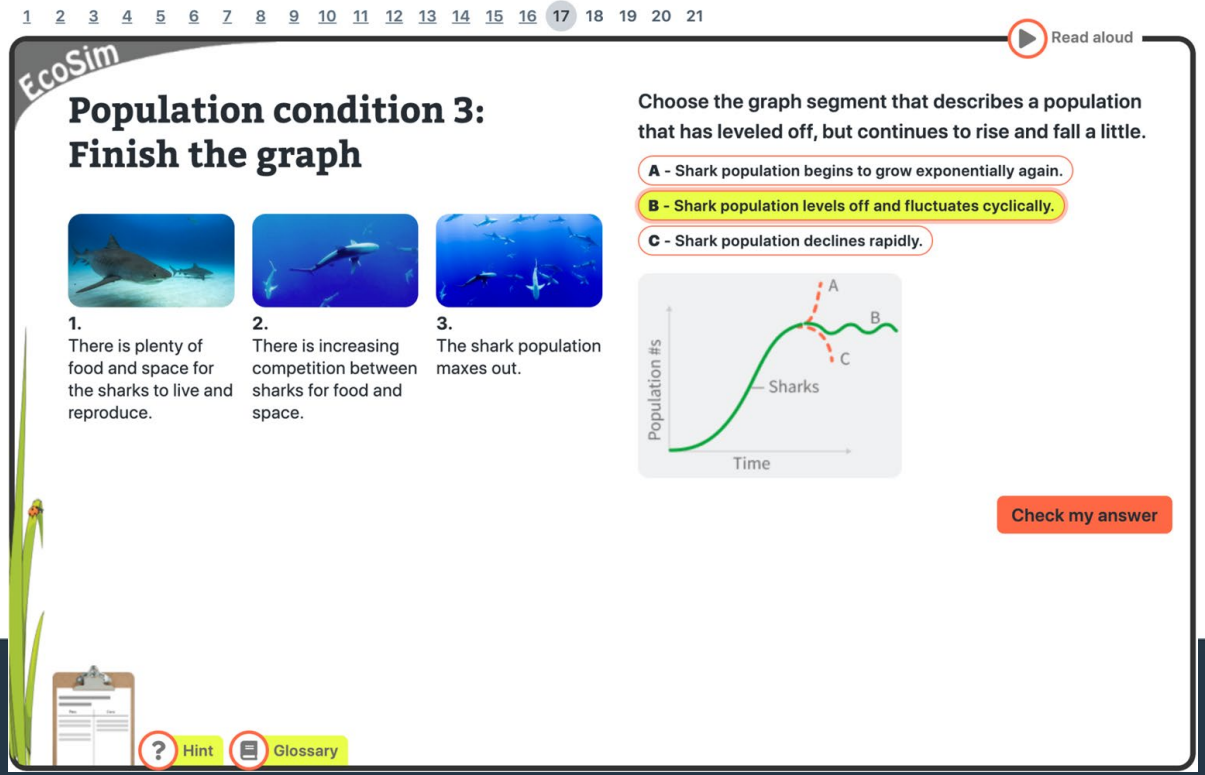

EcoSim
As a scientist who
now knows about
this ecosystem, do
you think they
should pave half of
the field? Why or
why not?
What will happen to
the ecosystem if
they do?
Hint
Glossary
Click on the parts of the food web to
what would happen to the flow

10


To help the principal
decide whether to
pave the field, let's
explore this ecosystem
like a scientist.
Here's a food web for
this ecosystem.
Explain what is going
on with the plants,
animals, decomposers,
soil, and air. Why are
there arrows?
Hint

3. Refined & coded prototypes

Refined prototypes were then coded for cognitive labs (think-alouds).



What we learned from students through co-design

- Tease out authentic scenarios
- Provide choice
- Capture deep thinking
- Lower barriers to interactive interface
- Make work products readily available

Next Up …

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