Creating Student Discourse in an Asynchronous Learning Environment

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THE PROBLEM

An asynchronous remote learning environment makes it difficult for students to present their thinking and consider and the thoughts of their classmates while model building.
THE INSPIRATION

*Photo from Page Keeley Twitter 11/16/2017*
THE LIMITATIONS

1. Cost/obtaining resources
2. Original books are print form
3. Limited to topics in books
   (tend to be middle school/9th grade)
1. Canned responses (not from YOUR students)
A MODEL FOR ASYNCHRONOUS DISCOURSE

LAB
Students collect lab data and build their own model

CLASS DISAGREES
The teacher compiles student defenses and creates a second probe to help expand thinking

PROBE
The teacher compiles student models and creates their own Keeley-esque probe

CLASS AGREES
The teacher compiles student defenses to help students construct notes in their own words
Conservation of Mass

AN EXAMPLE LESSON
REMOTE
YouTube: “Mass Change Lab” - Scott Milam

HYBRID
Split mini-labs among students → 1 student/mini-lab
- Ice melting in water
- Alka-seltzer in water
- Burning steel wool
- Dissolving sugar
- Forming a precipitate
- Folding aluminum foil
Each student documents their observations and shares with the class

Students create before and after particle models to explain their observations for each experiment.
THE PROBE

Students create and turn in what they think the particle models look like for each experiment.

You pick 3-4 particle models that represent common alternative conceptions for the class to examine.
If your class is split between which particle model is correct, create a second probe to dive deeper into their thought process.
PROS AND CONS

**PROS**
- Students have the chance to explain their thinking
- Students can answer questions on their own time
- Teacher can pinpoint which alternate conceptions to address
- Teacher can create canned responses if time is an issue

**CONS**
- There is no replacement for in-person class discussion - no opportunity for follow up questions
- It is a time commitment to wait for students to respond so you can compile their answers