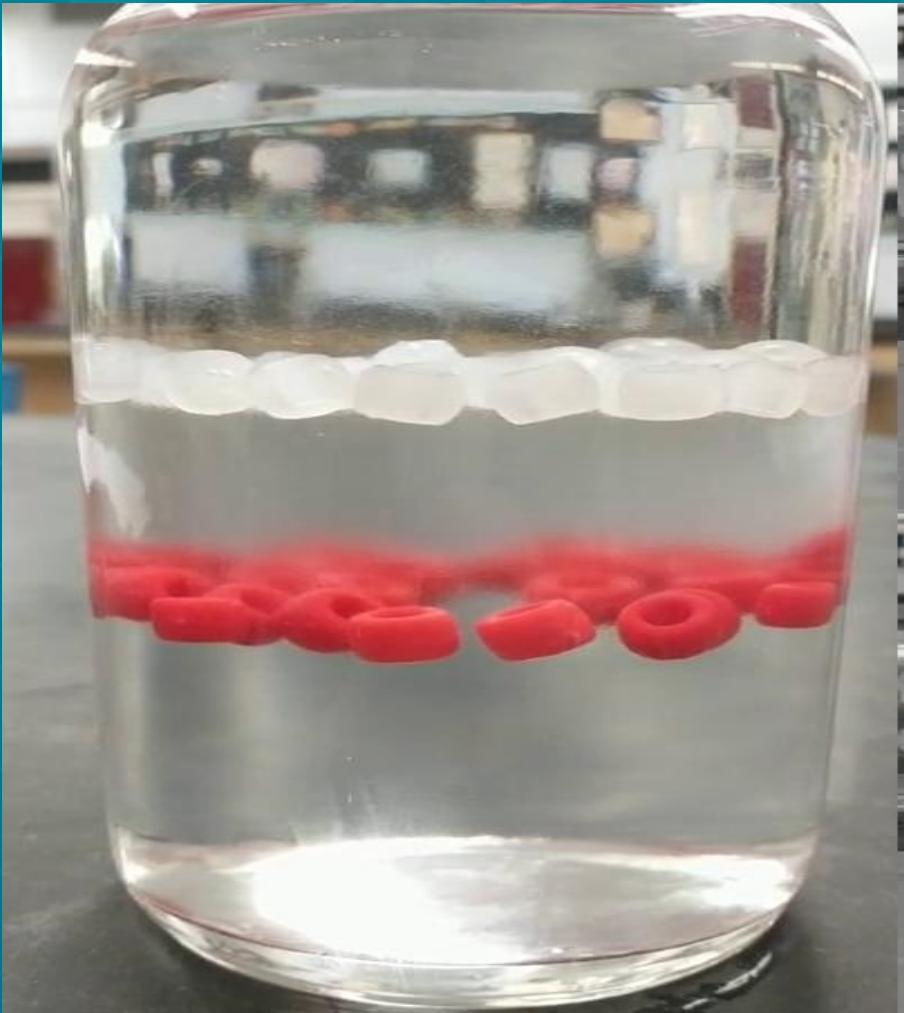


Learning Like a Scientist



BBHMS 8th Grade Science Team:

Kelly Kroesen, Kiersten Franklin, & Kourtney Samuelson

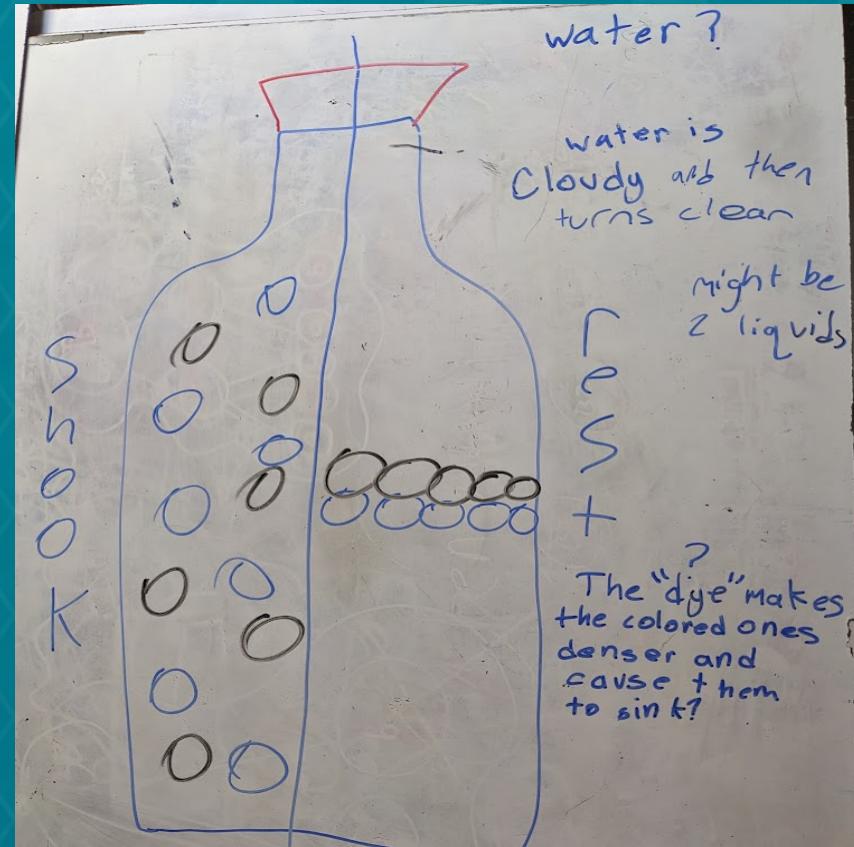
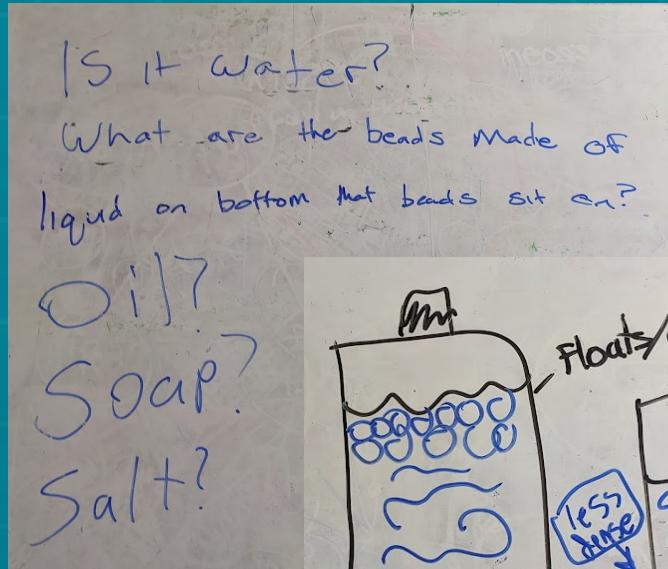


Mystery Bead Bottle Activity:

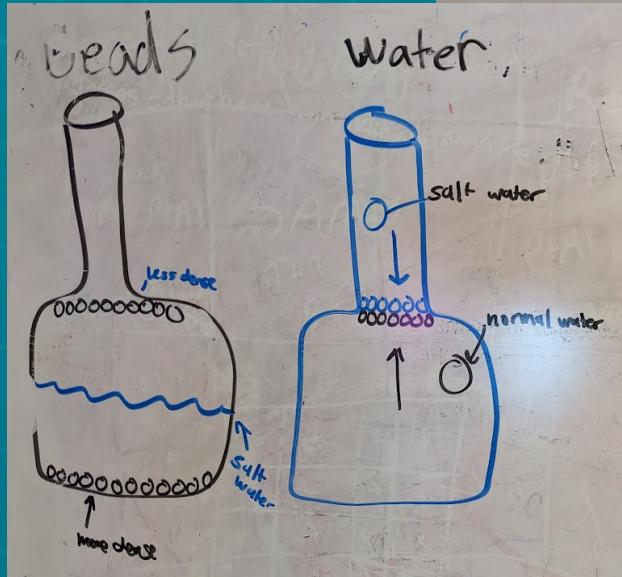
What do you think is causing the beads to behave this way?



Let's Look at Some Student Thinking...



Let's Look at Some Student Thinking...

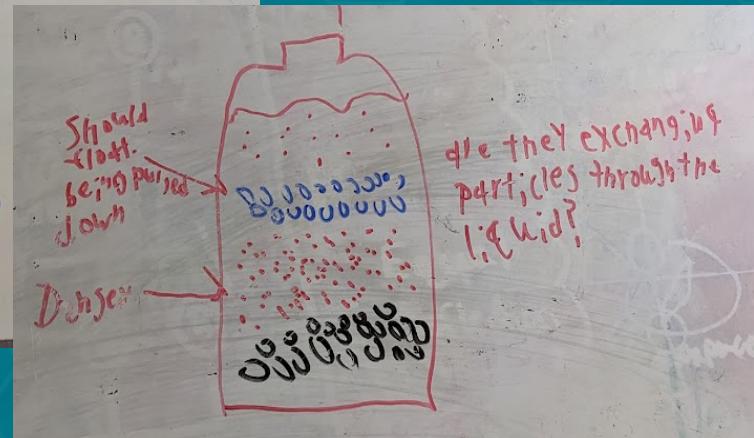
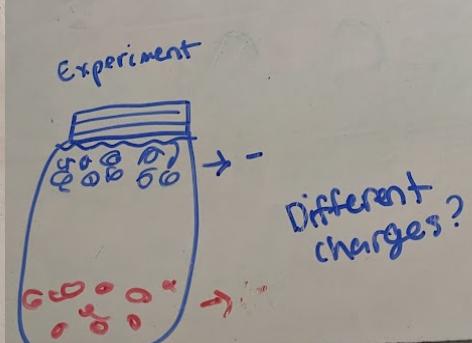
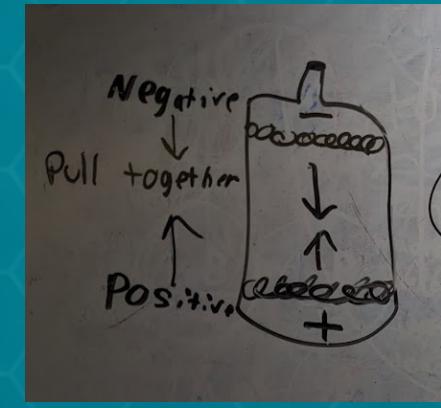


Observations:

- they are different colors
- you have to shake (friction) to activate

Ideas/questions:

- Are they different materials?
- Why do they separate and come back together so quick?
- is there anything special in the water?
- do they have different charges?



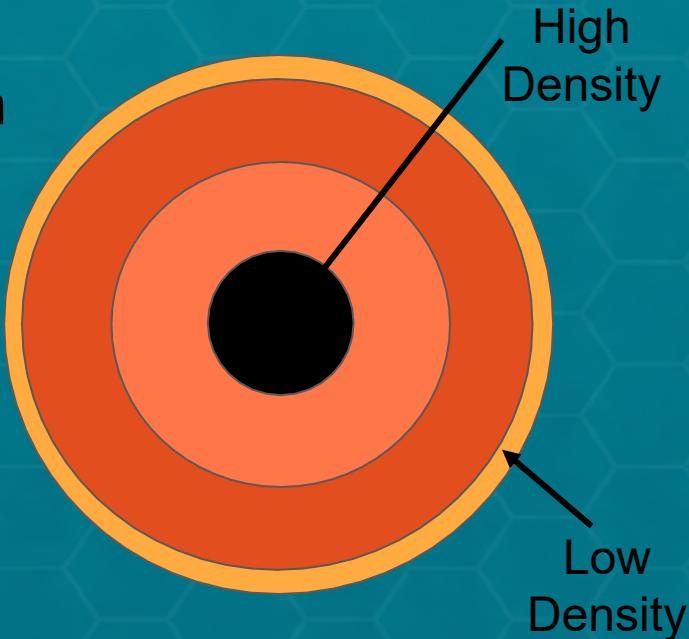
Earth's Interior Unit

How does this activity help drive student learning about Earth's Interior Unit?



**Planetary
Differentiation**

Refreeze



Curiosity & Discovery Drive Learning

“A 2014 study into curiosity and learning from the University of California reveals that CURIOSITY allows the brain to retain information better than when curiosity is not present.”

Disciplinary Literacy by Releah Lent

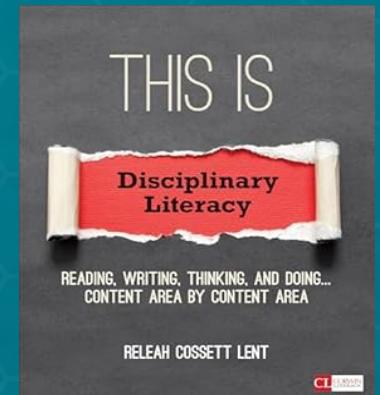
*I have no special talent.
I am only passionately curious.*

~ Albert Einstein

~ *This is*



Transforming STEM Education



How Does Learning Science Look Different?

Traditional Learning

- Starts with lectures and/or the textbook telling students how scientific phenomena work.
- Labs done occasionally and only repeats lecture material.
- Unit is mostly students taking notes or answering textbook questions.
- Students memorize facts but lack a deeper conceptual understanding.

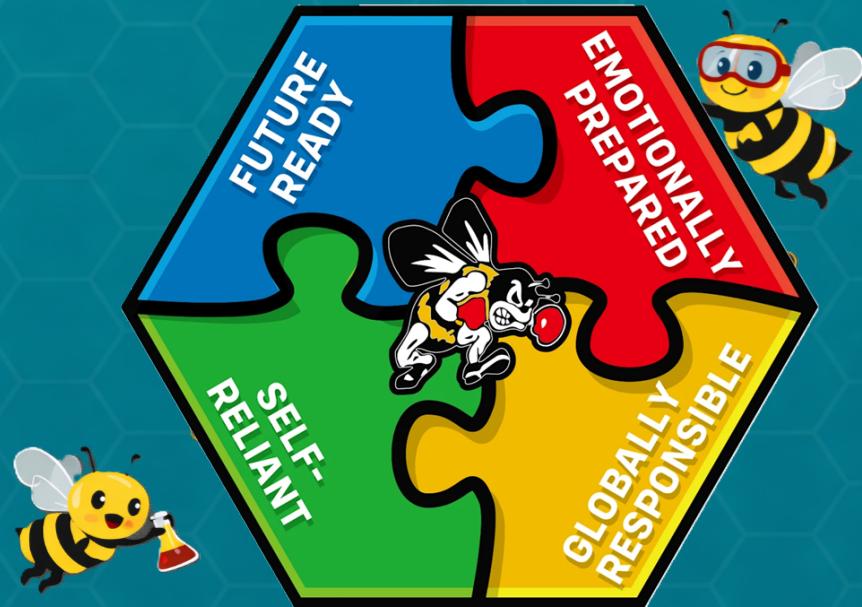
Inquiry-Centered Learning

- Starts with curiosity.
- Labs done frequently and introduce new ideas that student experience for themselves.
- Students collaborate to generate models that identify patterns and explain observed phenomena.
- Student discussion/debate leads to an understanding of how things work.

Attributes of A Bee

Inquiry-centered learning builds:

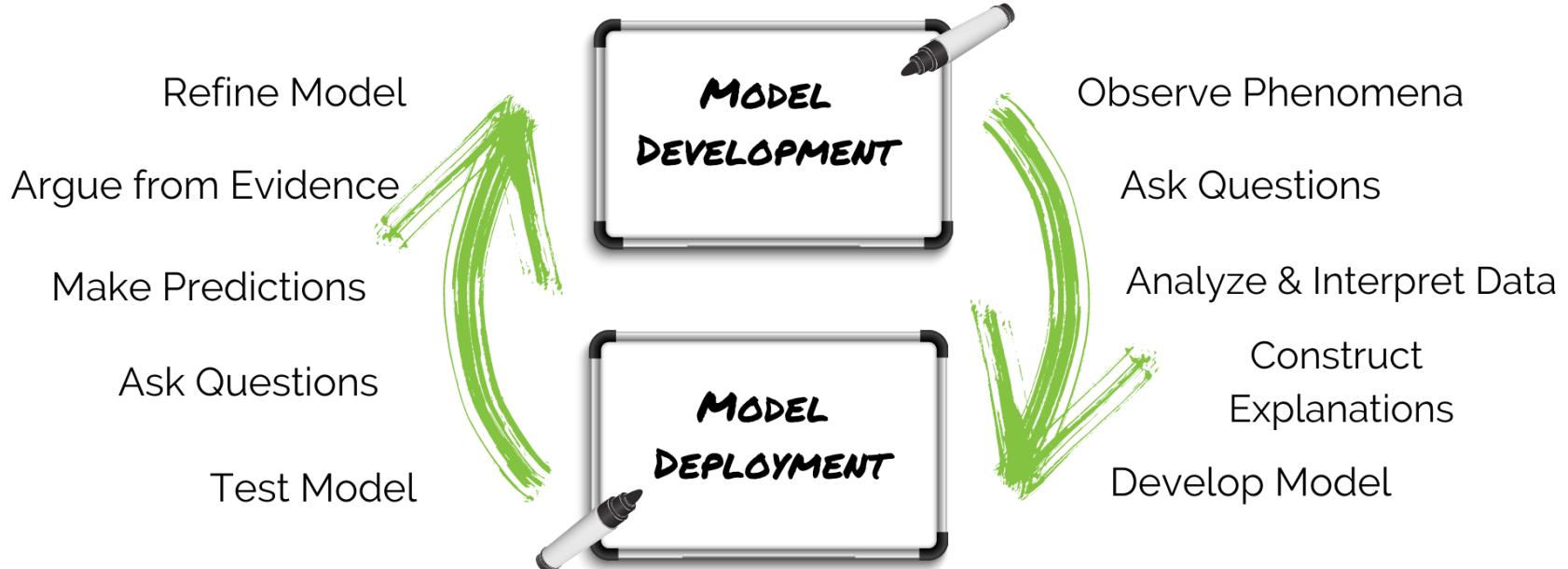
- ★ Independent Thinking
- ★ Problem-Solving
- ★ Communication
- ★ Active Listening
- ★ Collaboration
- ★ Self-Confidence
- ★ A Growth Mindset
 - Resilience
 - Adaptability
 - Flexibility



Thank You!



The Modeling Cycle



Overview of the Modeling Instruction

The Modeling Cycle: An Effective Model for Science Education