

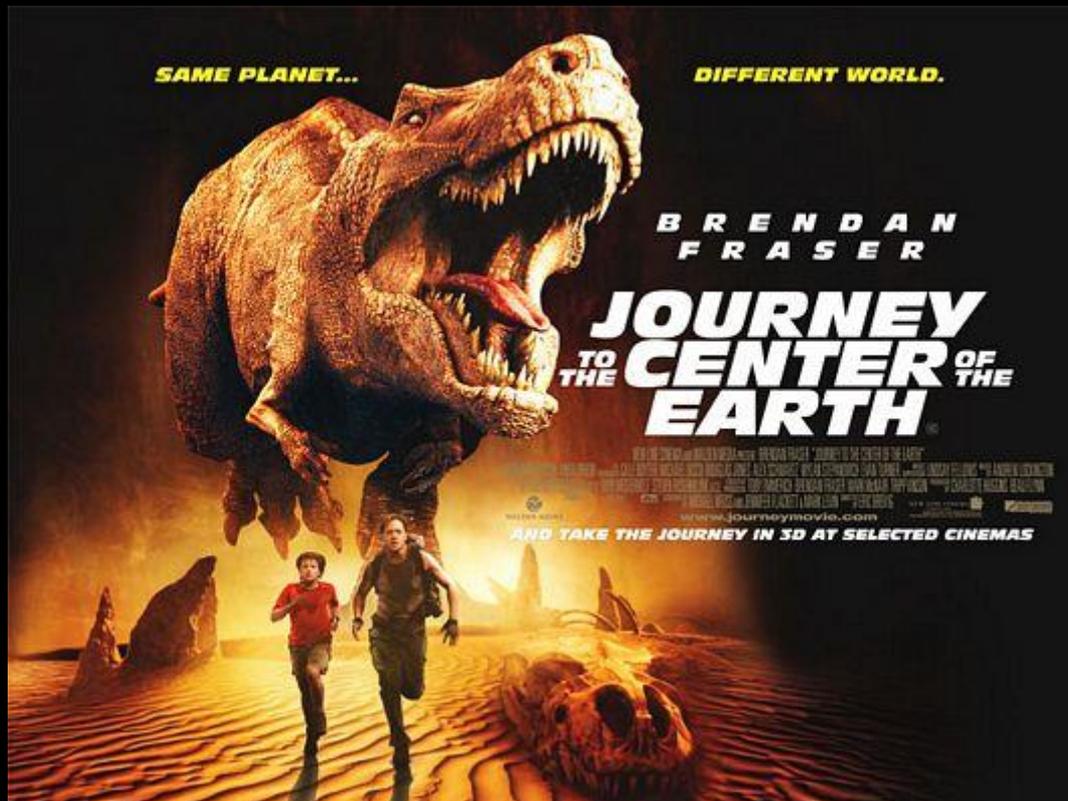
Exploring the Unseen: Mystery Boxes



The Nature of Science

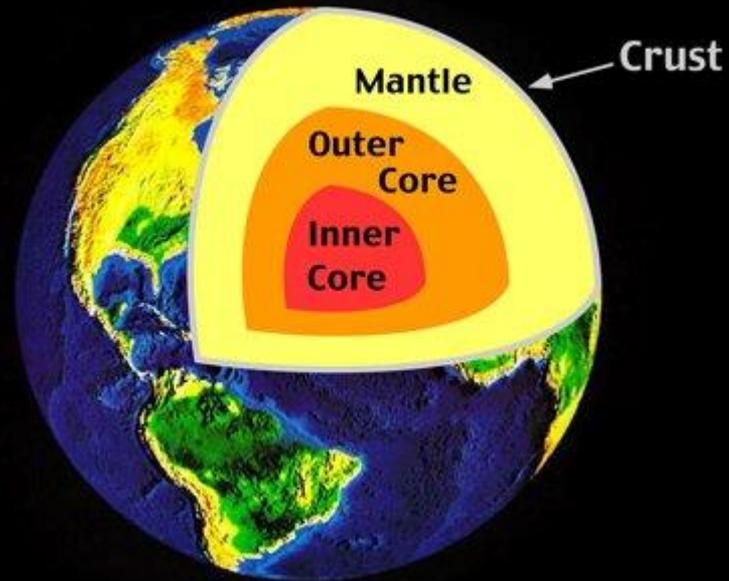
Think About It

- Who knows what the center of Earth is *really* made of?



Think About It

- But we have never been to the center of Earth.
- How do we know this?



Title: Mystery Boxes

- Essential Question: How do scientists learn about things that cannot be seen?

Lesson Purpose

- Scientific discoveries are made because humans are driven to understand how and why things work. But sometimes, things are either too small to be seen (like atoms or cell parts), or too big or far away to be seen in detail (like other planets or other galaxies).
- Scientists use careful observations to make their best predictions about the nature of things that can't be seen.
- If it can't be directly seen and observed, then the predictions are our best guesses....NOT 100 % proven

**(Draw this table in your notebook.
Fill the page, so you have plenty
of room to write information.)**

Box #	Observations (2 per box)	Prediction	% Confidence
1			
2			
3			
4			
5			
6			
7			
8			

Instructions

1. In your group, visit each box station. Use your senses to try to identify properties of what is in the box. (You can lift and gently shake the box, feel it, etc., but you cannot open it.)
2. In your data table, write your observations (what you notice) about each box. Think about what you hear, feel, etc. Is it heavy? Light? Be as descriptive as possible.
3. Then, use your observations to make a prediction about what YOU think is inside each box. Write your predictions in the data table.
4. How sure are you of your prediction? Write your percent confidence.

**Wait until the teacher is
ready to move on!**



Let's Compare Answers



Reflection Questions

Write each question and answer it in your notebook. Use complete sentences.

1. How sure were you about your predictions?
2. What tools would help you make better predictions?
3. How was this activity similar to things that scientists do in the real world?