



KVSOP Bertini / Knox
STEAM ... Eddy Current Lab
Energy

Name _____

Date _____

Standards:

- Content:
 - MS-PS2-5: Motion and Stability - Forces and Interactions
- Core Idea:
 - PS2.B: Types of Interactions

References (video clip and interactive slideshow)

YouTube: *Eddy Currents, Magnetic Braking, and Lenz's Law*

https://www.youtube.com/watch?v=otu-KV3iH_I

Focus Questions: (after watching the above video answer the following questions)

1. Why can we rule out a magnetic attraction between the magnets and tube to create the slow drop of the magnet?

2. What is the difference between a magnetic material and non-magnetic material as it is dropped into the copper tube? What does this mean?

3. Similar to a magnetic attraction, we can also say that _____ doesn't have a role in the deceleration of the magnets through the tube because it never touches the sides.
4. What is Faraday's Law? _____

5. What is Lenz's Law? _____

6. What is happening in the Eddy Currents? _____

WHAT IS YOUR CHALLENGE:

Test and record a variety of magnet shapes as they are dropped through a copper or aluminum tube. You MUST test at least four different magnet shapes.

MATERIALS FOR MARS ROVER:

- Eddy Current Tubes
- Magnetic Field Viewer Film
- Variety of Shaped Magnets

DIRECTIONS

1. Test the magnets to see if size and shape has a factor on the drop time.
 - Shape #1: _____
 - Drop Time _____
 - Shape #2: _____
 - Drop Time _____
 - Shape #3: _____
 - Drop Time _____
 - Shape #4: _____
 - Drop Time _____
2. Explain and compare the magnets - why did the magnets have or did not have the same drop time?
