STEM 101
Powered by THE STEM ACADEMY

Name: _____
Period: _____

UNIT: MEASUREMENT

MAGNETIC MYSTERY!

GOAL:

Test different materials to see if they are magnetic, and then design a creative tool, gadget, or solution that uses magnets to solve a problem!

MATERIALS:

- ✓ Magnets (bar or disc magnets work well)
- ✓ A tray of test items:
  - Paper clip
  - Coin
  - Aluminum foil
  - String
  - Eraser
  - Metal key
  - LEGO brick
- ✓ Magnet Test Chart
- ✓ Paper & pencil (for sketching or design brainstorming)

STUDENT DIRECTIONS:

Step 1: Test the Items

1. Pick up the **magnet** and gently touch it to each item.
2. **Does the item stick to the magnet?** Try both sides!
3. Write **"Yes"** if the item is magnetic and **"No"** if it isn't.

Use a chart like this:

Test Item	Magnetic? (Yes/No)
Paper Clip	
Coin	
Foil	
String	
Eraser	
Key	
LEGO Brick	

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Step 2: Think Like an Inventor!

Now that you know which items are magnetic, try solving a design challenge:

- **Design Task:** Can you **create or imagine something useful that uses a magnet** to make life easier, safer, or more fun? (Think: secret locker, magnetic toy, cabinet lock, a trapdoor, floating train, etc.)

Step 3: Sketch or Describe Your Idea

On the back of your worksheet or below, **draw a simple design** that uses a magnet to solve a problem. Label the parts and describe what it does.

- **Design Name: _____**
- **What problem does it solve?**

  _____

  _____
- **Sketch your idea here (or describe it if you prefer):**

  _____

  _____

Reflection Questions:

- Why do some materials stick to magnets but others don't?

  _____

  _____
- What was the most surprising material that did (or didn't) stick?

  _____

  _____
- How could you improve or test your magnet-powered design further?

  _____

  _____

STANDARDS ALIGNMENT

NGSS: 3-PS2-4 **STEL:** STEL 1A, STEL 3A, STEL 4A, STEL 8A, STEL 11A **CCSS:** CCSS.MATH.CONTENT.2.MD.D.10, CCSS.MATH.PRACTICE.MP2, CCSS.MATH.PRACTICE.MP5, CCSS.MATH.PRACTICE.MP6