STEM 101
Powered by THE STEM ACADEMY

Name: _____
Period: _____

UNIT: MEASUREMENT

MASS MATTERS

GOAL:

Test how the mass of an object affects how far it moves when you apply the same force. Learn how mass, motion, and energy are connected.

MATERIALS:

- ✓ Digital scale or spring scale
- ✓ 3 blocks or objects of different masses
- ✓ Flat surface or ramp
- ✓ Ruler or measuring tape
- ✓ Tape (optional, for start lines)

STUDENT DIRECTIONS:

Step 1: Measure Mass

1. Use the **scale** to find the **mass (in grams)** of each object or block.
2. Label them as **Mass 1**, **Mass 2**, and **Mass 3** (lightest to heaviest).
3. Write down the mass of each.

Step 2: Set Up the Test Area

1. Choose a flat surface or a small ramp.
2. Use tape to mark the **starting line** for each object.
3. Place the first object behind the line.

Step 3: Push and Measure

1. Gently push **Mass 1** with the **same light push** each time.
   (Tip: Use just one finger or push for one second to keep it consistent.)
2. Measure how far it slides **from the start line** using a ruler.
3. Record the **distance (in cm)**.
4. Repeat for **Mass 2** and **Mass 3**, using the same force.

Record Your Results:

Object	Mass (g)	Distance Moved (cm)
Mass 1 (Light)		
Mass 2 (Medium)		
Mass 3 (Heavy)		

Think & Reflect:

- How did the object's mass affect how far it moved with the same push?

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- Why do you think heavier objects don't move as far with the same force?

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STANDARDS ALIGNMENT

NGSS: MS-PS2-2, MS-PS3-1, 2-PS1-1 **STEL:** STEL 1E, STEL 3E, STEL 6E, STEL 7F, STEL 11E **CCSS:** CCSS.MATH.CONTENT.6.SP.B.4, CCSS.MATH.CONTENT.6.RP.A.3, CCSS.MATH.CONTENT.7.EE.B.3, CCSS.MATH.PRACTICE.MP2, CCSS.MATH.PRACTICE.MP5