Kinetic Energy Lab: DATA COLLECTION PAGE

Part 1: Kinetic Energy vs. Mass

Trial	Kinetic Energy KE (J)	Mass m (kg)	$\dfrac{KE}{M}$ (ratio)
A	1.0	0.5	
B	2.0	1.0	
C	3.0	1.5	
D	4.0	2.0	
E	5.0	2.5	

Part 2: Kinetic Energy vs. Speed

Trial	Kinetic Energy KE (J)	Speed v (m/s)	$\dfrac{KE}{V}$ (ratio)
A	0.5	1.0	
B	1.0	1.4	
C	2.0	2.0	
D	3.1	2.5	
E	4.5	3.0	

On the axes below, graph the data points so the dependent variable is on the vertical axis and the independent variable is on the horizontal axis. Be sure you label the axes correctly.

USE RED to graph MASS and USE GREEN to graph SPEED

Vertical Axis: Part 1 RED – Part 2 GREEN –

Horizontal Axis: Part 1 RED –
Part 2 GREEN –
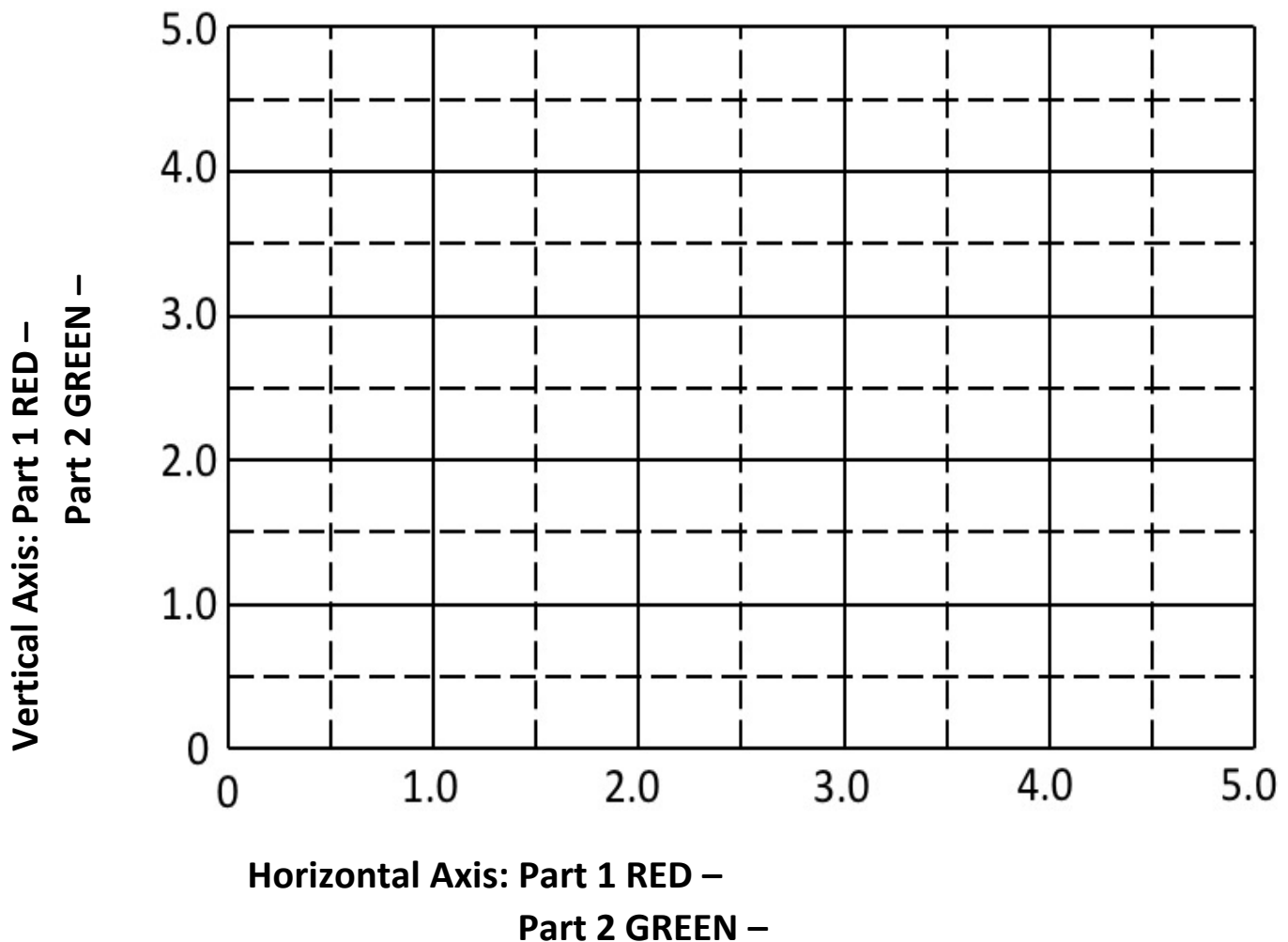
Part 1: Kinetic Energy vs. Mass

1. What do you notice about the data points you have graphed in **RED**?

2. After you divided kinetic energy by mass ($\frac{KE}{M}$) in the table, Is there a constant ratio? _____

3. Is kinetic energy proportional to mass? _____
    a. What is your evidence from the graph?

    b. What is your evidence from the table?

4. What is the kinetic energy of a 4.0 kg cart traveling at 2.0 m/s? _____
    Explain how you arrived at your answer.

Part 2: Kinetic Energy vs. Speed

5. What do you notice about the data points you have graphed in GREEN?

6. After you divided kinetic energy by speed ($\frac{KE}{V}$) in the table, Is there a constant ratio? _____

7. Is kinetic energy proportional to speed? _____
    a. What is your evidence from the graph?

    b. What is your evidence from the table?

8. A cart of mass, *m,* and speed, *v,* has a kinetic energy of *KE*. Which of the following would increase the kinetic energy of the cart the **MOST**?
    _____ Double the mass and keep the speed the same
    _____ Double the speed and keep the mass the same
    Support your answer, using evidence from the tables or graphs.

Put Glue Here