

## Lesson 4: What Happens as a Ball Bounces?

### Activity 4.1

#### Purpose

Conduct an experiment with your partner that measures the change in bounce height of a bouncing ball as it bounces. Answer the following questions as you perform your experiment.

#### + Safety

Use the super balls only to perform the lab. Throwing the balls around the room is unacceptable.

#### Variables

What is the independent variable (manipulated variable) for this experiment?

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What is the dependent variable (measured/ responding variable) for this experiment?

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What are the controlled variables (variables that stays the same) for this experiment? (State at least 3)

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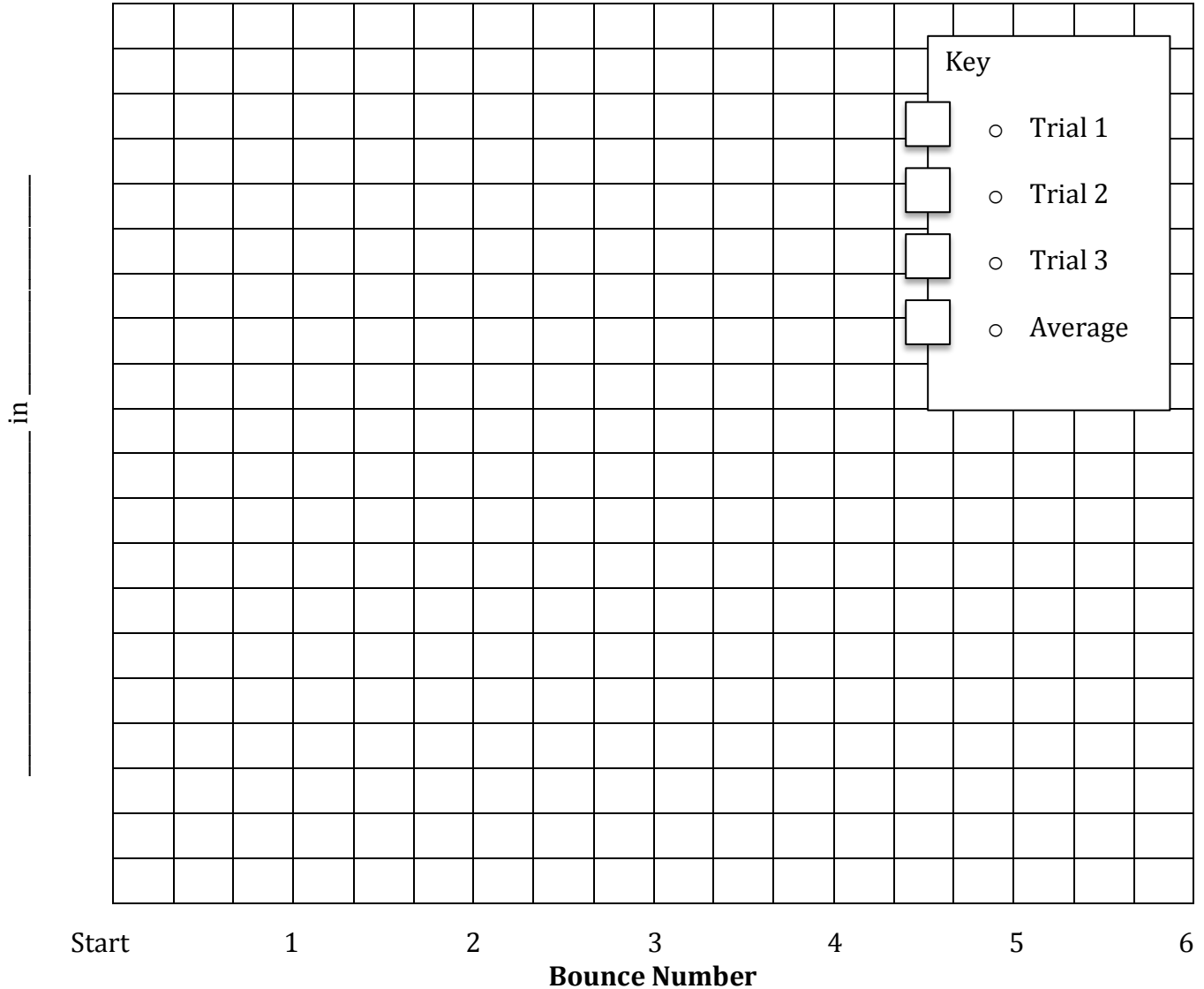
#### Data

|                  | Trial 1 | Trial 2 | Trial 3 | Average |
|------------------|---------|---------|---------|---------|
| Starting Height: | 100 cm  | 100 cm  | 100 cm  | 100 cm  |
| Bounce 1:        |         |         |         |         |
| Bounce 2:        |         |         |         |         |
| Bounce 3:        |         |         |         |         |
| Bounce 4:        |         |         |         |         |
| Bounce 5:        |         |         |         |         |
| Bounce 6:        |         |         |         |         |

#### Your Progress:

- Mastery
- Proficient
- Developing
- Beginning

## The Height of Ball Based on Bounce Number



### Instructions for Creating a Line Graph:

1. Label the Y axis of this graph with the dependent variable and units
2. Number the Y axis so that it goes from 0cm to 100 cm.
3. Choose a color for each line and color the key.
4. Plot the data using the color you have chosen.
5. Connect the points with a smooth line using a straight edge.

What happens to the amount of gravitational energy the ball has, as it bounces? Explain why you think this happens.

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