

Science and Math Lab Combined

Part 1

1. Discuss roller coasters and the type of energy used to thrust them

- A. potential energy
- B. kinetic energy

2. Discuss roller coasters and the Newton's Laws as they are applied to them

- A. First law of Newton
- B. Second law of Newton
- C. Third law of Newton

3. Demonstrate

- A. Potential energy
- B. Kinetic energy
- C. First, second, and third law of Newton.

4. Discuss speed and velocity

- A. Average Speed = Distance/time
- B. Velocity = the speed and the direction the object is moving.

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Part 2

Directions: You have four different balls with different sizes and composition. You also have a roller coaster(s) model to perform this experiment.

1. Make a prediction and list the order in which those balls will speed up and the distance they will cover or travel.

Example: the fastest, the second fastest, the third fastest, and the slowest.

Prediction: _____, _____, _____, _____
Fastest second fastest third fastest slowest

Prediction: _____, _____, _____, _____
Longest distance Second Longest third longest fourth longest

2. Do the actual experiment to find out if your predictions actually occurred. You can use different variables to test your predictions.

3. Write and share your conclusions with the class.

DATA COLLECTION CHART
Type of Variable _____

Trials	Pink Ball	Tennis Ball	Color Ball	White Ball
Trial 1 →	_____	_____	_____	_____
Trial 2 →	_____	_____	_____	_____
Trial 3 →	_____	_____	_____	_____

DATA COLLECTION CHART

Type of Variable _____

Trials	Pink Ball	Tennis Ball	Color Ball	White Ball
Trial 1 _____→	_____	_____	_____	_____
Trial 2 _____→	_____	_____	_____	_____
Trial 3 _____→	_____	_____	_____	_____

DATA COLLECTION CHART

Type of Variable _____

Trials	Pink Ball	Tennis Ball	Color Ball	White Ball
Trial 1 _____→	_____	_____	_____	_____
Trial 2 _____→	_____	_____	_____	_____
Trial 3 _____→	_____	_____	_____	_____

Write and share your group's Conclusions.

Note: feel free to change your variables.¹

¹ Created by Mr. Mariaca 5th Grade Teacher at Bay Meadows