

## Inquiry Lab

Your group needs to create a lab experiment to test the following.

### Mini-Lab 1:

1. Will momentum be conserved during an inelastic collision between two objects with the “same” masses?
  - a. Will the Kinetic NRG be conserved during this interaction?

### Mini-Lab 2:

2. Will momentum be conserved during an inelastic collision between two objects with the “different” masses? (at least a ratio of 2:1)
  - a. Will the Kinetic NRG be conserved during this interaction?

### Mini-Lab 3

3. Will momentum be conserved during an elastic collision between two objects?
  - a. Will the Kinetic NRG be conserved during this interaction?

### Materials:

- Dynamic Carts x2
- Aluminum track
- SPARK
- Motion sensors
- Balance

### Prelab Questions: **(must be signed off on before starting lab)**

1. How will you make the carts perform an elastic collision?
2. How will you make the carts perform an inelastic collision?

### Things to remember:

1. For data to be valid, you must perform at least 3 trials for each Mini-Lab
2. Graphs should be done on the averages

### Requirements:

1. Completion of a Lab Report
  - a. The procedure and hypotheses **MUST** be pre-approved before you can start the lab
  - b. This needs to be typed
  - c. Graphs **MUST** be done by hand
  - d. Data tables must have straight lines (or done on the computer)
2. All math **MUST** be shown and legible