

# Forces and Energy 2.3 LAB : Balloon Rockets

## Newton's Third Law

### MAKE UP LAB

**Problem:** Which of three balloons inflated to different circumferences (small: 30 cm, medium: 50 cm, and large: 80 cm) will travel the farthest distance?

**Hypothesis:** Write an “if...then...because...” statement predicting which balloon will travel the farthest if inflated to different circumferences.

If \_\_\_\_\_  
then \_\_\_\_\_  
because \_\_\_\_\_  
\_\_\_\_\_

**Materials:**

one balloon per group  
drinking straw  
measuring tape

string  
masking tape

**Procedure:**

1. Use the data below to calculate the average distances traveled by each balloon circumference.
2. Use this data to create a graph. Be sure to include all required graph elements!
3. Create a conclusion following the lab write up format. This should be 2 paragraphs long and should answer the questions given in the conclusion section below.

Data Table:

	Circumference 1: 30 cm	Circumference 2: 50 cm	Circumference 3: 80 cm
Trial 1	275 cm	441 cm	730 cm
Trial 2	202 cm	480 cm	756 cm
Trial 3	225 cm	411 cm	802 cm
Average Distance Traveled			

**Conclusion:** Write a conclusion following your lab write up format (**2 paragraphs**). Include answers to the following questions in your conclusion:

1. What action and reaction forces were involved in this experiment?
2. What is Newton's Third Law?
3. How is the balloon experiment an example of Newton's Third Law?

