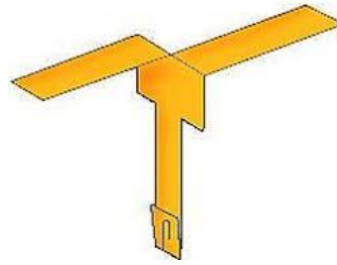


# Helicopter Inquiry

**Purpose:** What manipulation can you make to a paper helicopter to make it have a slower speed?

**Back Information:**

- What do you know about dropping a piece of paper?
- What is Gravity
- What is Wind Resistance
- What is the formula to calculate speed?



**Hypothesis**

IF I make (what manipulation) THEN the paper helicopter will go a slower speed.

**Experiment**

- What is the control in this experiment (which helicopter of the 3)?
- What is your first manipulation?
- What is your second manipulation?
- What are some controls (things that will stay the same in the experiment)

Data Table

Trials	Control (Pink)	Manipulation on mass (Yellow)	Manipulation on shape (Green)	Manipulation on length (Blue)	Manipulation of your choice
1					
2					
3					
4					
Average					
Speed (cm/sec)					

## Graphing / Analyzing the Data

- Title the graph
- Title the X-axis
- Title the Y axis
- Number the intervals on the Y axis starting at 110 going up by 5's (the top line will be 210 if done correctly)
- Make **a bar** graph of the 4 SPEEDS

### Questions to answer:

1. Is slowest speed the bigger or smaller number?
2. What is the best manipulation?
3. What was the worst manipulation?
4. Did changing the shape effect the speed?
5. Back up your answer 4 with data.
6. Did changing the mass effect the speed?
7. Back up your answer 6 with data.
8. Did changing the length effect the speed?
9. Back up your answer 8 with data.

### Conclusion –

1. What was your original hypothesis?
2. What your hypothesis correct or incorrect?
3. Back up your answer with Data from the data table.
4. What was the control average speed(with label)
5. What was your best manipulation (not including the control)?
6. How did that manipulation compare to the control?
7. What was your worst manipulation?
8. How did that manipulation compare to the control?
9. What is something you may have done wrong in this experiment (mistake)?
10. What is one thing you would change (manipulate) if you could do this lab all over again?