

# Paper Airplanes & The Scientific Method



## Directions: Read through the following information

Scientific Inquiry refers to the many ways in which scientists investigate the natural world. Scientific investigations are done to answer questions and solve problems. Many times, investigations are said to follow a scientific method. Scientific methods are steps that are followed during an investigation to make sure that the information gained during the investigation is accurate and true. The steps usually follow are:

- **Question or Problem** are identified and stated
- **Background Research** is done to find out what already is known about the topic
- **Hypothesis** is formed- This is an educated guess or answer to your question.
- A very detailed, step by step **Procedure** is developed to test the hypothesis and data is collected
- The **Data is Analyzed.**
- **Conclusions** are drawn. This is a summary of what happened in the experiment and what was learned.
- **Results or Communicated.** Other scientists review the results of the investigations.

### **Answer using the “R” and “A” of Race.**

What similarities do you see in the scientific method steps listed on this page compared to the ones I taught you in class?

What differences do you see in the scientific method steps listed on this page compared to the ones I taught you in class?

### **WHAT AM I DOING IN THIS LAB?**

Here is a description about this lab. You will be choosing two different ways (designs) to fold a piece of paper into an airplane. You will get to research many different designs and choose two that you WANT to do. The only thing you need to make sure of it that you use the same type of paper. We are only changing the design so we cannot change anything else! So, if you fold one paper airplane with notebook paper, the other one must also be folded with notebook paper. You can also use copy paper if you want. You will measure how far each fly with a ruler, measuring tape, meterstick, anything that you have at home to measure. You then will see which design of yours fly the farthest and compare it to other classmates!

### Data Table Example:

| Type of paper  | Measurement Tool | Paper airplane design | Length paper airplane flew |
|----------------|------------------|-----------------------|----------------------------|
| Notebook paper | Ruler            | Design #1             | ????                       |
| Notebook paper | ruler            | Design #2             | ?????                      |

### Part 1: Identify and State the Question or Problem

In this lab, you want to know which paper airplane design will fly the farthest. We will not be concerned with how high, how many loops, or how straight the paper airplane will go. We will only see which one goes the furthest.

Based on the information above, write the question you are trying to answer in this lab.

### Part 2: Background Research

Find out what is already known about paper airplane design. You will use the website and video provided to research different designs of paper airplanes.

Look at the chart below and click on the links so you can fill out the chart. (Fill in each bullet point with something you learned from the site and video.)

| Link                                                                                                  | What you learned                                                      |
|-------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| <a href="https://www.youtube.com/watch?v=AGzOOM0Pz98">https://www.youtube.com/watch?v=AGzOOM0Pz98</a> | <ul style="list-style-type: none"><li>•</li><li>•</li><li>•</li></ul> |
| <a href="https://www.foldnfly.com/#/1-1-1-1-1-1-1-2">https://www.foldnfly.com/#/1-1-1-1-1-1-1-2</a>   | <ul style="list-style-type: none"><li>•</li><li>•</li><li>•</li></ul> |

From your research, pick 2 different designs that you will fold your paper airplane like. Fill out the boxes below with the information it asks.

**Design #1**

| <b>Name of Design</b><br>(if no name was<br>given, make one up) | <b>Description of<br/>Design</b> |
|-----------------------------------------------------------------|----------------------------------|
|                                                                 |                                  |

**Design #2**

| <b>Name of Design</b><br>(if no name was<br>given, make one up) | <b>Description of<br/>Design</b> |
|-----------------------------------------------------------------|----------------------------------|
|                                                                 |                                  |

### Part 3: Write a Hypothesis

Now that you have picked two designs, it is time for you to create a hypothesis on which one you think will fly the farthest. Below, write your hypothesis in an IF/THEN/BECAUSE statement

Hypothesis:

### Part 4: Perform Experiment

1. First, you need to do is think of any materials that will be used during this lab. Go back to the first page and reread “WHAT AM I DOING IN THIS LAB?” paragraph if you are struggling. List the materials below (you may not have to fill in all bullet points!)

**Materials:**

- 
- 
-

## ATTENTION! ATTENTION!

• YOU ARE NOT ACTUALLY DOING THESE PROCEDURES YET! YOU ARE ONLY WRITING THEM OUT!

2. Next thing you need to do is write procedures. These are already partially done for you but fill in the blanks when you see one.

Procedures for design #1:

1. Select one of your paper airplane designs and fold the piece of paper so your airplane is ready
2. Pick a spot to throw the first paper airplane.
3. Throw the first paper airplane.
4. Measure how far the paper airplane went
5. Record the data

| # | Measurement |
|---|-------------|
| 1 |             |
| 2 |             |
| 3 |             |

6. Repeat two more times

Procedures for design #2

1. Select one of your paper airplane designs and fold the piece of paper so your airplane is ready

2. Throw the \_\_\_\_\_

3. Measure how far the  
\_\_\_\_\_

4. Record the \_\_\_\_\_

| # | Measurement |
|---|-------------|
| 1 |             |
| 2 |             |
| 3 |             |

5. Repeat \_\_\_\_\_

**ATTENTION! ATTENTION!**

**• YOU ARE NOW GOING TO COMPLETE THE PROCEDURES AND  
FILL IN THE TABLES!**