



# PAPER AIRPLANE CHALLENGE

This month, we're testing our flight skills! We're challenging you to design a paper airplane and test how far it can fly.

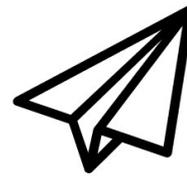
1. Fold your paper airplane
2. Decorate!
3. Set up your runway.
  - How are you going to measure how far your plane flies?  
Try a tape measure. You can mark distance with chalk or tape after measuring with a ruler.
  - Make sure your runway is clear of obstacles for a safe flight.
4. Take flight! Throw your paper airplane.
5. Measure how far your plane flew after it lands.
6. Record your results on the data sheet.
  - How far did your plane fly?
  - What were the flight conditions? Was it windy or sunny?  
Where did you throw your plane?
7. Throw your plane again. And again! Does it always fly the same distance?

## **ABOVE & BEYOND:**

How can you change your plane design so that it will fly even farther?

# FOUR FORCES OF FLIGHT

How do planes fly? The four forces of thrust, lift, drag, and gravity all work together so that planes can soar through the skies! These same forces work on your paper airplane.



## THRUST:

pushing the plane forward with force from the plane's engine or propellers, or the strength from your arm throwing the paper plane

## LIFT:

air beneath the wings lifting the plane up

## DRAG:

air pressure that slows the plane down

## GRAVITY:

downward force with the weight of the plane

# DATA SHEET

Airplane engineer : \_\_\_\_\_

Plane Name	Distance Flown	Inside or Outside	Weather Conditions
Ex. Mach One	27 feet 2 inches	Outside	Sunny and Windy

