

## Description:

Students will create and decorate a paper airplane. Then, they will test their planes by measuring how far they travel. Finally, students will make a prediction and test it. This can be done in school or at home.

## Recommended Grades:

- K-2, 3-5

## Materials/Resources:

- Airplane Handout; Sheets of 8.5" x 11" Paper; Colored Pencils or Markers; Blue Painter's Tape; 30' Tape Measure; Camera; Teacher Record Sheet (Student Names & Distances)

## Objectives:

Students will:

- Make a paper airplane,
- Measure the distance their airplane glided,
- Make and test a prediction about the role of symmetry in airplane design, and
- Optionally, modify the design of the airplane to extend the gliding distance.

## School Use:

Discuss the activity with the students. Ask how many have made paper airplanes before.

## Teacher Directions:

In preparation for airplane testing, go to a school hallway and use blue painter's tape to mark the starting line and intervals appropriate for the ages of the children participating in the activity. For example, younger students may not be able to get their airplanes to glide more than 30' so mark 10 intervals of 3' each along the hallway.

1. Distribute the Paper Airplane handout. Review the activity and answer questions.
2. Direct the students to follow the 5 steps on the handout to create a paper airplane. Offer assistance as needed.
3. Once their airplanes are completed, ask the student pilots to decorate them using colored pencils or markers. The wings are one place to start.
4. Arrange the airplanes on the floor in imitation of a commercial airfield once everyone is ready. Take a photo to commemorate the activity.
5. Ask students to carefully pick up their planes and get in line to test their flight worthiness at the door to the hallway.
6. Explain what the strips of blue painter's tape represent and what the rules are.



7. Ask the 1st student to stand on the starting line and toss their airplane down the hallway. Have the student take the end of the tape measure to the point the plane stopped. Record the distance. Repeat the process until every student has had two trial runs and distances recorded.
8. Return to the classroom. Each student should make a prediction about asymmetry (e.g., make one wing shorter than the other) and test it. They should record this on the handout.
9. Ask students to take their handouts home and share their airplanes with a parent/caregiver.

## Extension Activities:

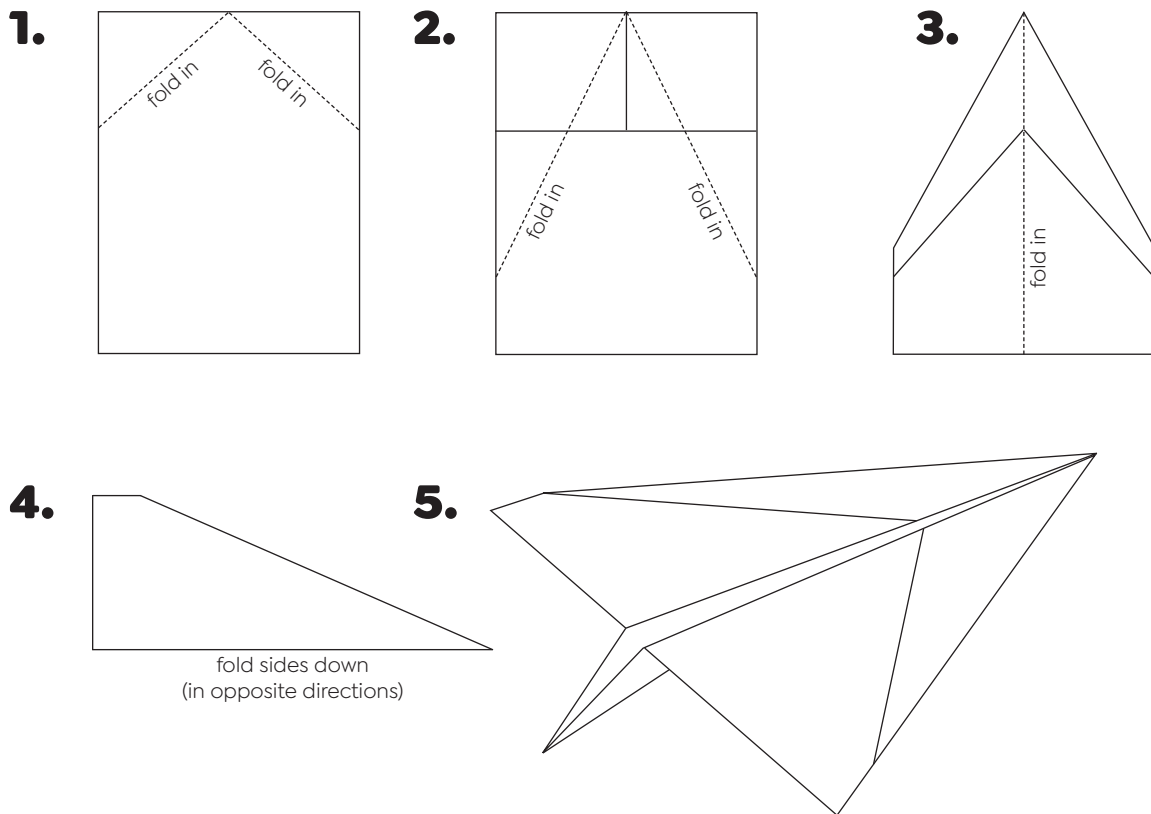
Ask students to modify the basic design of the airplane given in the handout at home. Then, they should test their designs to see whether they glide longer or shorter distances. Report back what happened.

Learn more about airplanes by reading and/or listening to the Pebble Go article, [Airplanes/Aviones](#), and/or [The First Airplanes](#) in Capstone Interactive.

# MAKE A PAPER AIRPLANE

Name: \_\_\_\_\_

Teacher: \_\_\_\_\_



Follow the instructions above to make a paper airplane out of an 8½" x 11" sheet of paper. Once finished, decorate the airplane. For example, add graphics to the top and bottom of the wings.

Take photos of your completed airplane and share them with your teacher, family, and friends. Test out your airplane and see how far you can make it fly. Repeat the flight test a couple of times to see whether you can increase the distance. If so, how did you get a longer flight path?

What do you predict would happen if the airplane was not symmetrical (not the same on both sides)?

Make another paper airplane that is not symmetrical to test your hypothesis.

What did you find? \_\_\_\_\_

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