Which Paper Plane Flies Best?

Have the children find a way to test the differences between the paper planes.

- What criteria will they use to determine "the best" plane?
- How will they test for that criterion?

They will probably come up with:

Hang time – a sweep hand on the judges watch will work great
Accuracy – place a target on the floor and be prepared to have the students measure distances - hula hoop – paper target
Distance – marking a flight zone with prelabeled distances on strips of masking tape will prove useful. Use masking tape or chalk to mark the Flight Zone. Label the Start Line (zero cm), 50cm, 100cm, and 150cm, all the way to 1000cm

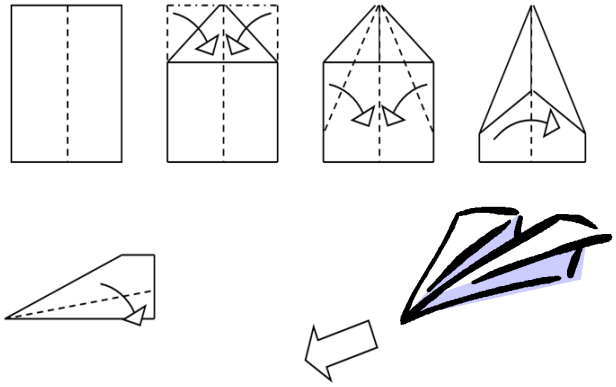
Have the students test their planes for each of the categories.

- Did they use multiple throws to determine the "best" plane?
- Did they use range, median, mean, or mode?

The judge's rulings always need to be final! Have the students chart their results.

- Does this change their understanding of what "best" might mean?

Range – difference between highest and lowest value – 100-80=**20**
Median – middle - put the values in order from lowest to highest, then find the number that is exactly in the middle - 80 85 **90 ^ 90** 90 100
Mean – arithmetic average - add up the numbers and divide by how many there are - (80+85+90+90+90+100) /6=**89**
Mode – value that occurs most often - **90**



Create a flight zone free of furniture and people. The Flight Zone needs to be located in a large, empty, flat area.
Flight-testing is more difficult if done outdoors with the wind.
A section of a classroom can be used if the furnishings are moved to create an open space.

Each pilot will launch his or her plane from shoulder height being careful to not cross the starting line. The goal is to never have the plane glide above shoulder height.
Test flights should be done in the Flight Zone.

Flights should only be made when the Flight Zone is clear for takeoff.

- Never throw a paper airplane at anyone!
- Never throw a paper airplane when anyone is in the way.
- Throwing harder doesn't make paper planes fly farther.

HINT: when folding do not crease with the fingernail. It deforms the paper at the crease. This can disrupt airflow. To make a sharp crease place the paper on the table and make the crease with fingers then use the "bowl" of a plastic spoon to put a sharp edge to the crease.