

# AERODYNAMICS

**Description:** Build paper airplanes for greatest flight duration and length/accuracy.

**Number of Participants:** 2

**Competition:**

1. Each team member receives two [2] pieces of copy paper and approximately five [5] cm of masking tape. Scissors will also be available.
2. Each member constructs her/his own airplane - using at least one sheet, but not more than two, which will bear a resemblance to a winged object. No designs like a helicopter are permitted.
3. One plane will be used in Part I and the other plane will be used in Part II.
4. Each plane is launched by hand by its maker from a predetermined starting point for each part of the event.

## **Part I: Duration of Flight**

1. The purpose of this part is to construct an airplane that will stay in the air the longest amount of time.
2. If two planes are used at once [i.e. in a piggyback fashion], the recorded time will be for the plane which is aloft for the shorter duration.
3. The time aloft will cease when:
  - a. A plane becomes lodged in a permanent fixture [e.g. light, seat, etc.]
  - b. A plane touches the auditorium floor or stage floor [sliding time is not counted].
  - c. It ceases moving in air or hits a hanging obstacle.

## **Part II: Accuracy and Distance of Flight**

1. The purpose of this part is to construct a separate airplane that will fly accurately through targets and travel the longest distance.
2. The distance will be determined:
  - a. From the point of launch to the point where the plane initially touches the ground.
  - b. Distance traveled by the plane by sliding along the floor will not be counted.
  - c. This will be measured to the nearest centimeter.
  - d. Determination of the landing point by the judge is a final decision.
3. Two targets made from hula-hoops will be erected. Bonus points will be awarded for each hoop through which the airplane passes during its flight.

**Scoring:**

1. The winner will be determined by combining the scores of both parts as follows:
  - a. Part I: The time in seconds multiplied by 100
  - b. Part II: The distance in centimeters plus a bonus of 20 points for each target through which the plane passes.

**Tie Breaker:** Team with the longest time aloft in Part I.