AERODYNAMICS

1. <u>DESCRIPTION</u>: Build paper airplanes for greatest flight duration and length/accuracy

<u>A TEAM OF UP TO:</u> 2   <u>APPROXIMATE TIME:</u> 10 mins

2. <u>THE COMPETITION</u>: Each team may bring two (2) fully assembled airplanes on the day of the competition. Each plane can be constructed from no more than two intact sheets of standard copy paper and masking tape. The two planes may be of different designs, but both must resemble a winged object; no designs like a helicopter are permitted. One plane will be used in Part I and the other plane will be used in Part II. 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

a. The purpose of Part I is to construct an airplane that will stay in the air the longest amount of time. Competitors should be prepared to launch their planes from floor level or an elevated platform.

b. If both planes are used at once (i.e. in a piggyback fashion), the recorded time will be that plane which is aloft for the shorter duration.

c. The time aloft will cease when:

  i. A plane becomes lodged in a permanent fixture (e.g. light, seat, balcony)

  ii. A plane touches the floor or any wall (sliding time is not counted).

  iii. It ceases moving in air or hits a hanging object (i.e. flight has been interrupted).

Part II: Accuracy and Distance of Flight

a. The purpose of Part II is to construct an airplane that will fly accurately through targets and travel the longest distance. **Three** or more hula-hoops will be used as targets. The distance between hoops will be between 1-3 meters; the exact distance will be determined by judges on the day of the competition.

b. The distance will be determined:

  i. From the point of launch (marked off by a tape line from the launch point) to the point where the plane initially touches the ground (regardless if the plane hits a wall).

  ii. Distance traveled by the plane by sliding along the floor will not be counted.

  iii. This will be measured to the nearest centimeter. Determination of the point where the plane touches the ground is the judge's final decision.

3. <u>SCORING</u>: The winner will be determined by combining the scores of both parts as follows:

Part I: The time in seconds multiplied by 200.

Part II: The distance in cm plus a bonus of 20 points for each target through which the plane passes.

Tie Breaker: Team with the lightest combined weight of the two planes.