



## Fly-copter Challenge

### Materials:

Fly-copters, metric measuring tape, stopwatch  
Safety goggles recommended



### FLYING DRAGONFLY

Oriental Trading Company

<http://www.orientaltrading.com/>

Item Number: **IN-16/164**

Cost: \$2.95 per dozen

### Objectives:

Students will be able to:

- Describe how a “fly copter” works
- Identify insects with two wings and four wings

### Background:

Many toys we play with throughout our lives demonstrate important science concepts. A toy that is often called a Flying Dragonfly toy illustrates Bernoulli’s principle, which is the main principle behind many flying machines. As the propeller spins, air passes across the blades at different speeds. This difference in speeds between the top of the blade and the bottom creates a lifting force necessary for flight.

**Factoid:** The toy is misnamed as it only has two “wings”, rather than four wings like a dragonfly. Insects that would better match this toy’s design are flies, mosquitoes, and crane flies as they all have two wings. This is why we are calling it a Fly-copter!

### Challenge:

1 – Give each student a flying dragonfly toy and allow time for them to put it together.

2 – Demonstrate how to “fly” the dragonfly by holding the stem in between both hands and quickly slide the hands in opposite directions to create enough force for the toy to take flight.

**Warning:** These toys can hurt if they hit someone while flying! Students must spread far apart while practicing and take care not to launch it towards anyone else!

3 – Allow a few minutes to practice flying the “flies”

4 – Line the students up along a boundary area (such as the garden fence) with at least an arm’s length between them.

5 - For the first competition, have students compete to see who can make the fly-copter go the furthest distance. Use the metric tape to measure the distance for the best attempt. Keep a record of the best distances.

6 – For the second competition, have students compete to see who can make the fly-copter stay in the air for the longest time. Use the stopwatch to record the flight time (if possible). Keep a record of the best flight times.

7 – Award prizes to the top two students in each category – distance and flight time.