**Follow-Up Questions**

Paper Airplanes and the Methods of Science

**1.** In the plane experiment, what paper plane did we use as our **control**? Why do scientists like to use a **control group** in an experiment?

**2.** We changed two things in the plane experiment: 1) the **design** of the plane (the way it was folded), and 2) the of the paper (by using heavier paper).

**3**. There are two types of **variables** that scientists look at when designing experiments; they are the **independent variables** (manipulated/changed)and the **dependent variables** (responding/measured)**.** You saw that different plane designs made with different weights of paper made the planes fly different distances. The variables that we changed, like the design or paper weight, are called **variables**. When we measured how far the plan flew we were measuring the **variable.**

**4.** Describe why scientists prefer to use the **metric system** of measurement.

**5.** Look at the **bar graph** (*page 3*) that summarizes all the results from last year. What design seemed to do best? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What design seemed to do worst? What conclusions can you draw about the three plane **designs** (an **independent variable**) on how

far the plane flew (***dependent variable***)?

What conclusions can you draw about the effect of the **weight** of the plane *(*an **independent variable*)*** on how far the plane flew *(****dependent variable****)*

**7.** What is the importance of having **repeated trials** (in this case repeated throws) in an experiment?

**1000**

**900**

**800**

**700**

**(cm)**

Dragonfly Grasshopper Brown Bat Flying Squirrel Sparrow Hawk Bald Eagle

**The Scientific Method--Plane Experiment Results**

**600**

**500**

**400**

**Distance**

**300**

**Control**

**Design**

**Dragonfly**

**241**

**Grasshopper**

**276**

**Brown Bat**

**436**

**Flying Squirrel**

**501 Sparrow Hawk**

**445**

**Bald Eagle**

**524**

**200**

**100**

**Light Heavy**

**Light**

**Heavy**

**Light**

**0**

**Plane Design**