

Student Name \_\_\_\_\_ Date \_\_\_\_\_

## **BUILDING A SPACECRAFT**

**DIRECTIONS.** Work in teams to design and build scale models of landing craft. Then you will test the strength of your models by dropping them from a height of about five meters. Next, you will choose a landing site in your own neighborhood for an alien craft to explore.

### **Materials**

“Building a Spacecraft” Student Worksheet

Toothpicks or Balsa Wood

Ruler

Lightweight fabric (for parachute)

Glue

Graph paper

String

Pencil/Pen

### **Part 1–Design, Build, Test**

1. Your team will design an unmanned spaceship to land on a planet. First decide what your mission will be and make sure your design includes parts to accomplish all of the tasks. Decide what your lander will look like. Not all robotic craft look like people. For example, researchers are now experimenting with insect robots, each designed to do a specific task. Write your mission goals on a separate sheet of paper. And draw your design using a sheet of graph paper and a ruler.
2. Now your team will build a scale model of your proposed craft, using inexpensive and recycled materials such as toothpicks and balsa wood. Your model should be no more than 15 cm high. Build simple boxes to represent model instruments and fit them into your lander. Include a parachute for a soft landing.
3. Test your lander model. Your teacher will select a site where you can safely drop the lander from a height of 5 meters or more.

### **Part 2–Reflect**

1. How did your lander survive its fall? Did its structure hold up on impact? Were the instruments on board damaged?
  
2. What changes would need to be made for your next test model?