

Testing Your Parachute

To test your parachute, you will drop it from a certain distance and time its descent. Then you will use the drop height and descent time to calculate the descent rate, which is the amount of time it takes the payload to fall a certain distance.

Procedure

- 1 Make three charts like the one below for your trial data.
- 2 Prepare your parachute for launch. Turn the parachute over, and while holding the washer, find its center point (see illustration at right). Turn the parachute back over while holding the center point. Smooth out the folds of the parachute so that they drape smoothly. Be especially careful when doing this with the non-plastic canopies.
- 3 Position the parachute over the drop zone and wait for the payload to stop moving. Measure the distance (in meters) from the payload to the floor and record this height. Drop *all* of your parachutes from this height.
- 4 Have the person with the stopwatch count down from three, saying "drop" at zero. At that moment, the timer should start timing and the person holding the parachute should drop the parachute. Timing should stop when the payload hits the floor. Conduct two practice trials before performing your actual trials.

5 Perform five drops, making sure to drop the parachute from the same height each time.

6 Repeat the test for the other two parachutes you built. Calculate and record the average descent rate for the five drops.

Questions

Write your answers on a separate piece of paper.

- 1 Which of your parachutes had the slowest descent rate? Explain why.
- 2 What, if any, patterns do you see in your data? How would you explain these patterns? Which patterns do you think are important? Explain your reasoning.
- 3 What are the lowest and highest descent rates in each of your three parachute trials? If there are any large differences, what do you attribute them to?
- 4 How confident are you of your results? Explain your level of confidence.



preparing the parachute for drop



dropping the parachute

Variable: *surface area*

Parachute 1: 18 cm

	Drop Height (m)	Drop Time (s)	Descent Rate distance(m)/time(s)
Drop 1	4.5	2.14	2.10
Drop 2			
Drop 3			
Drop 4			
Drop 5			

Average Descent Rate: _____