

Worksheet 2

How do materials science engineers choose fabrics for parachutes?

Using the fabric selected from Activity 1, design your parachute. Carefully read the instructions and use the table to record your answers.

- Measure and cut a hexagon from your chosen fabric.
- Cut six equal pieces of string 50 cm in length.
- Each piece of string is knotted to the vertices of the hexagon.
- Attach the other ends of the string to a weight (about 20 g). A clip can be used to secure the string to the weight.
- Drop the parachute from a fixed height and time how long it takes to reach the ground. Test the parachute at least twice. Also, note your observations about whether the drop is abrupt or gentle and if the drop is straight or shifted.
- Repeat the experiment using a fan from the side to simulate windy conditions. The height is determined by how high the student's hands are raised.

Testing the parachute

Use the table to record your findings.

	With wind	Without wind
Falling time (seconds)		
Abrupt or gentle?		
Straight or shifted?		
Additional observations?		



Based on your results, answer the following questions:

- a. Which type of fabric material is best for parachute design? Why?

- b. Which fabric material does not work well for a parachute? Why?

- c. Can you think of any fabric properties that you hadn't considered before that might have influenced the outcome?

- d. What were the differences between adding wind or not?

- e. What would happen if a variable was changed? For example, a smaller hexagon design, a lighter weight, or a different height.
