

Name _____

Date _____

Parachute Design: Air Resistance

Guiding Question: How does the design of a parachute affect an object's acceleration?

To construct the "basic" parachute:

1. Unfold the napkin into a square.
2. Carefully tape one 10 inch piece of string to each corner of the napkin using no more than one inch of tape.
3. Gather the loose ends of the string together and tie an overhand knot.
4. Loop the paperclip over the knot.

Experiment:

1. Conduct a **control** with no parachute. Hold a paperclip 2 meters above the ground. Let go of the paperclip and record how long it takes to fall to the floor. Repeat for a total of 10 trials and record each time in the table below.
2. Hold the parachute by the top of the napkin with the paperclip dangling below. The paperclip should hang at a height of 2 meters above the ground. Let go of the parachute and record how long it takes for the paperclip to fall to the floor. Repeat for a total of 10 trials and record each result below.
3. Modify the parachute to explore how the parachute design affects its air resistance. You may get extra materials if needed. Drop each new parachute 10 times and record your results below. On the back of the paper, make a detailed sketch of each new design. Label any changes and explain why you made those changes.

	Control (paperclip only)	Basic Parachute	New Design #1	New Design #2	New Design #3	New Design #4
Trial 1						
Trial 2						
Trial 3						
Trial 4						
Trial 5						
Trial 6						
Trial 7						
Trial 8						
Trial 9						
Trial 10						
Average						

Conclusion:

1. Explain what you can conclude about how parachutes work. What design worked best? Why?