

How Do Different Materials Affect Air Resistance?

Grade:

Sixth, Seventh, Eighth

Type:

Physics

Objective:

This project will examine the relationship between materials and air resistance.

Research Questions:

- Do different types of materials affect air resistance differently?
- Which types of materials have the greatest affect on air resistance?
- Air resistance is a crucial factor when designing a parachute. Discover what type of material will work best as a parachute?



Materials:

- Large plastic bag
- Paper
- Handkerchief
- String
- Clay
- Hole punchr
- Chair or ladder
- Timer
- Ruler
- Scissors
- An assistant

Experimental Procedures:

1. Cut a square from the plastic bag and a square from the paper that is the same size as the handkerchief.
2. Cut twelve 6" pieces of string.
3. Tie one piece of string to each corner of the plastic square.
4. Tie one piece of string to each corner of the handkerchief.
5. Punch a hole in each corner of the paper and tie a piece of string through each hole.
6. Attach a ball of clay to the bottom of the plastic square, paper square and handkerchief. Use the dangling string pieces for the attachment.
7. Stand on a chair or ladder.
8. Drop each parachute at the same height from the elevated location.
9. Have another person record the time from the moment the parachute is release until it hits the ground.
10. Analyze your data to determine which parachute material dropped the fastest. Which material has more affect on air resistance? Which material would make the best parachute?

Concepts: air resistance