



Plunge into Parachutes

AGE RANGE: 2nd-6th grade • PREP TIME: 10 minutes • LEARNING TIME: 15 minutes

Get ready to drop into an exciting experiment! You'll design, build, and test your own parachutes to see how different designs affect the speed of a falling object. Will a bigger parachute slow it down more? Does shape matter? Put your engineering skills to the test and discover the science behind a perfect parachute landing!

Instructions

Gather the following items:

Cloth, plastic bags, tissue paper, or coffee filters
String or yarn
Small plastic or paper cup
Hole punch
Small objects of similar weight

1. Trim cloth or other material into a square or round shape.
2. Cut four lengths of string 12-14 inches each.
3. Tie string to four corners of a square of cloth or other material
4. Punch holes to four sides of plastic or paper cup. Tie string to holes. Make sure you don't get the string tangled up.
5. Attach the other ends to a small toy or other object.
6. Drop two similar objects from the same height, one with a parachute, the other without a parachute.

Question: Does the object drop at the same speed? Does the object drop straight down?

Now vary your approach.

Try different shapes of parachutes.

Question: What happened when you tried two different size parachutes with the same weight object?

Attach multiple parachutes to the same object.

Question: Does the number of parachutes change the speed of the descent of the object?

Try parachutes of different materials.

Question: Do different materials affect the speed of the descent?

Don't forget to record your findings.



Why Do Skydivers Need Parachutes?

Because without them, they'd hit the ground way too fast. The reason? **Physics**—specifically, **Newton's Laws of Motion**.

1 - Inertia (First Law): A skydiver in motion stays in motion—unless an external force (like air resistance) slows them down.

2 - Acceleration (Second Law): Gravity pulls the skydiver down, making them fall faster. A parachute counters this by increasing drag, slowing their descent.

3 - Action & Reaction (Third Law): Air pushes against the parachute, and the parachute pushes back, creating a safe landing speed.

Without a parachute, terminal velocity (≈ 120 mph) is deadly. With one? A smooth, controlled descent.

That's why parachutes are a skydiver's best friend.



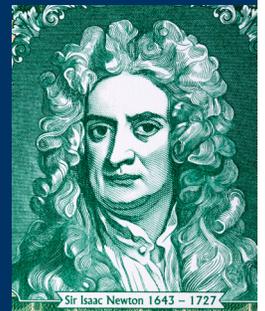
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Who is Issac Newton?

Sir Isaac Newton (1643–1727) was a legendary English physicist, mathematician, and astronomer. He's best known for:

1. The Three Laws of Motion – The foundation of classical mechanics, explaining how objects move.
2. The Law of Universal Gravitation – The famous "apple falling from a tree" moment led to his realization that gravity affects everything, from apples to planets.
3. Calculus – He (independently) developed this branch of mathematics, which is crucial for science and engineering.

Newton changed the way we understand the universe. Without him, physics as we know it wouldn't exist!



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