

Build a Parachute Challenge

Primary Audience: Elementary

Description: Learners will use limited resources to design, build, and test a parachute.

Materials will vary. Recommended:

- Plastic wrap
- Tissue
- Paper towels
- Plastic bags
- Coffee filters
- Parachute person – 1 per participant, printed and cut out (See Page 3)
- Binder clips, various sizes
- Paper clips
- Scissors
- Tape
- String

Instructions: Lay out materials prior to starting the activity so that learners know what is available to them. Their challenge is to build a parachute to safely carry their “parachute person” to the ground. Have them come up with a design before building their parachute. Included in the design should be a way to attach the parachute person to his or her chute.

Be sure to test each parachute build. If the parachute does not work, brainstorm and discuss modifications that could be made. Then, rebuild and test again!

Extension: Once the parachute is functioning, time how long it takes to get to the ground from a certain height. Now use the height from which it fell and the time it took to get to the ground to calculate the average speed of your parachute!

$$speed = \frac{distance}{time}$$

Extension: Challenge learners to try to create the parachute that takes the *longest* time possible to get to the ground.

What's Going On? A force called gravity is what pulls your parachute toward Earth. You've probably learned in school that the strength of Earth's gravity is roughly the same all over the world (it does vary a little bit, but not that much) and that if you drop a heavy stone and a light feather from the top of a skyscraper, gravity pulls them toward

the ground at exactly the same rate. If there were no air, the feather and the stone would hit the ground at the same time. In practice, the stone reaches the ground much faster, not because it weighs more but because the feather fans out and catches in the air as it falls. Air resistance (also called drag) slows it down.

Skydivers also experience air resistance during their fall. The parachute itself increases that air resistance so that the skydiver reaches the ground at a safe speed. Because the force on a parachute is pretty large, it must be made of strong materials.



Additional Resources:

- See Page 3 for parachute people to print
- Reach out the [COSI Department of Science Content](#) if you have any questions or comments.

Show us your completed Science Challenges! Just tag us at @cosi (Twitter) or @cosiscience (Instagram and Facebook), and we'll share it with our followers too!

Parachute People: Print, cut out, color, and attach to your parachute!

