

Gravity and Air Resistance



TRAIL

MIX

THIS TRAIL MIX INCLUDES A COMBINATION OF: science and technology skills. Students will make predictions and conduct an experiment about the rate at which 2 different items made from the same material fall to the ground. Students will examine how the force of gravity affects falling objects and develop a beginning understanding of how air resistance counteracts gravity.

DESTINATION

- Understand gravitational force
- Air resistance
- Make observations and collect data
- Develop claims, reasoning and evidence

GEAR

- [Helicopter Printable](#)
- [Edpuzzle: Danger! Falling Objects](#)
- [Gravity Experiment](#)
- [Vocabulary Cards](#)

TRAIL M.A.P.

Motivation: If you have a Trafera Roomerang, begin the lesson by asking, *If I toss this object into the air and do not catch it, what will happen to it?*



Substitute a [foldable paper boomerang](#) if you don't have access to a Trafera Roomerang.

[How to throw a Roomerang](#)

Toss the Trafera Roomerang. Ask: *What happened to the object?* (It spins in the air as it slowly falls to the ground). Say: *It seems as if gravity pulled the boomerang down, but not immediately. For a moment, the boomerang appeared to defy gravity, like an airplane or a frisbee. We know gravity is an invisible force that pulls objects down, toward the earth's center. However, this boomerang has me wondering, are there things that we can do to slow down gravity's impact on falling objects?*

Activity: Complete the Evidence and Claim sections of the [Gravity Experiment](#) using materials made from the [helicopter printable](#).

Product: Watch the [Edpuzzle video](#) as a group, pausing at each question to check for understanding.

Ask: *According to the video, why do things seem to fall at different speeds on earth? Why is this not the case on the moon?* Complete the Reasoning section of the [Gravity Experiment](#).

Extension: Challenge students to create a parachute for the crumpled up piece of paper in order to slow the rate at which gravity pulls it to the ground. Students can use any materials they can find to create their parachute. Encourage students to test and improve upon their designs.