

# Helium balloon lift experiment

## Activity Overview

This activity introduces the counteracting forces of lift and weight, and their effect on flight.

1-2  
HOURS

## Learning Objective

The key learning objective is to develop understanding of the interaction between lift and weight.

## Activity Plan

- › Take turns holding the balloon - can you feel the lift?
- › Add a small amount of sand/water to the cup to provide weight - weigh on the scales.
- › Retest the balloon - does it still rise, even with the increased weight?
- › If so, add more weight to the balloon and retest.
- › Keep going until the balloon hovers in place - neither rising nor falling.
- › At this point, weigh the cup and the sand - this is equal to the lift generated by the balloon.

## Material Examples:

- › Pre-filled helium balloons - one per group of 3/4 students.
- › Small plastic cups.
- › Sand or water - to fill the cups with.
- › Digital scales.
- › String & sticky tape.

## Challenge Statements

Can you draw a diagram to explain the interacting forces?  
How much could two or three balloons lift?  
How much would it take to lift you?

### Example Set up

