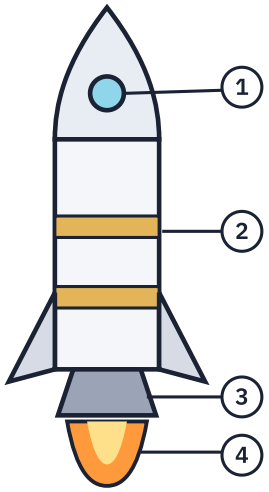
How Does a Rocket Work?

Label the rocket, do the balloon rocket experiment and test what you learned.

Name: _____ Date: _____

1. Label the rocket

Word bank: Engine · Capsule (crew) · Propellant tank · Hot exhaust gas



1. _____
2. _____
3. _____
4. _____

2. Balloon rocket experiment

Trial	Balloon size	Distance traveled (feet)
1	Small	
2	Medium	
3	Large	

1. In your experiment, which way did the air go? Which way did the balloon go?

2. Newton's third law says: for every action there is an equal and opposite _____.

3. Why do real rockets drop empty stages?

(T) (F) A rocket needs air to push against.

(T) (F) Most of a rocket's weight at liftoff is fuel.

Answer key

How Does a Rocket Work? · for parents and teachers

1. **Part 1:** 1 = Capsule (crew), 2 = Propellant tank, 3 = Engine, 4 = Hot exhaust gas.
2. **Part 2:** results vary. Usually a bigger balloon, with more air, travels farther.
3. **Q1:** The air went backward (out of the balloon) and the balloon went forward. **Q2:** reaction. **Q3:** Empty stages are dead weight; dropping them makes the rocket lighter so it can go faster.
4. **True/False:** first is False (a rocket carries its own oxygen and works in space); second is True (about 90%).

Keep exploring

Build and launch a real Moon rocket in our free 3D simulator at demo.astraviator.com. Read the lesson at astraviator.com/learn/rockets-and-astronauts/how-does-a-rocket-work/.