

# Year 5 Forces

Draw a line to match the word to its definition.

forces

a measure of how much matter is inside an object

gravity

pushes or pulls

weight

a pulling force exerted by the Earth (or anything else that has mass)

mass

the measure of the force of gravity on an object

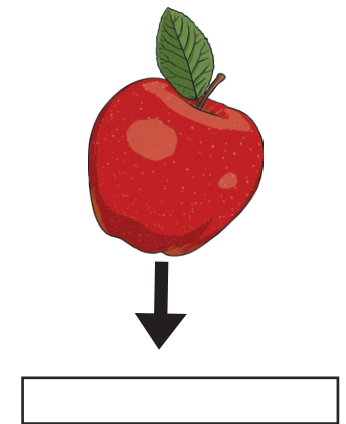
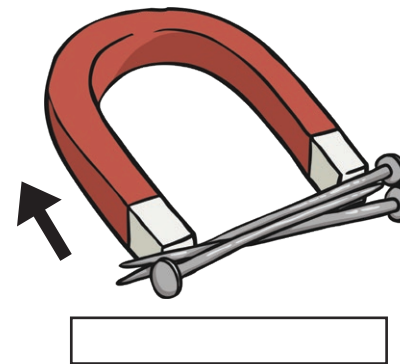
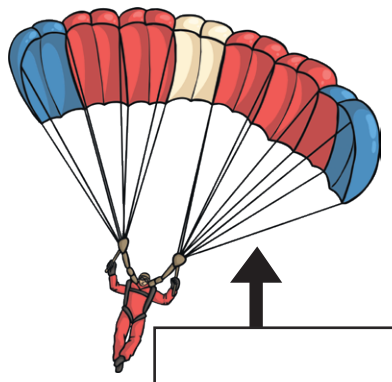
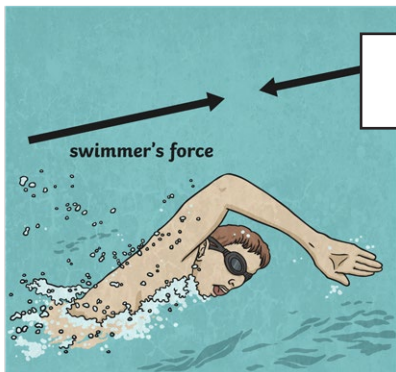
Name **three** things that forces can do to an object.

1. \_\_\_\_\_  
\_\_\_\_\_.
2. \_\_\_\_\_  
\_\_\_\_\_.
3. \_\_\_\_\_  
\_\_\_\_\_.

What unit of measure is mass measured in? \_\_\_\_\_

What unit of measure is weight measured in? \_\_\_\_\_

Write the name of the force in action next to each arrow.



# Year 5 Forces

Draw a line to match each word to its definition.

friction	a type of friction caused by air pushing against any moving object
air resistance	a force that acts between two surfaces or objects that are moving (or trying to move) across each other
water resistance	an upward force that a liquid applies to objects
buoyancy	a type of friction caused by water pushing against any moving object

What is the name of the scientist who developed a theory of gravity when he saw an apple fall to the ground?

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Write **true** or **false** next to each sentence.

Friction always acts in the opposite direction to the moving object. \_\_\_\_\_

Friction always speeds up a moving object. \_\_\_\_\_

Smooth surfaces create more friction than rough surfaces. \_\_\_\_\_

Give an example of when friction is helpful.

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Give an example of when friction is unhelpful.

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# Year 5 Forces

Circle the object that would fall the fastest in water.



A



B



C



D

Explain your answer.

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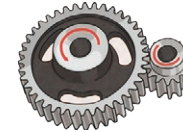
Write the name of the mechanism next to each picture.



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Fill in the gaps in the sentences.

The Earth's gravitational pull is the pull that Earth exerts on an \_\_\_\_\_, pulling it towards Earth's \_\_\_\_\_. It is the Earth's gravitational pull which keeps us on the \_\_\_\_\_.

Select the correct word from each bracket to complete the sentences.

The Moon has a \_\_\_\_\_ (smaller/ greater) mass than Earth so the gravitational pull on the Moon is \_\_\_\_\_ (smaller/ greater) than it is on Earth.

Jupiter has a \_\_\_\_\_ (smaller/ greater) mass than Earth so the gravitational pull on Jupiter is \_\_\_\_\_ (smaller/ greater) than it is on Earth.

Write **true** or **false** next to each sentence.

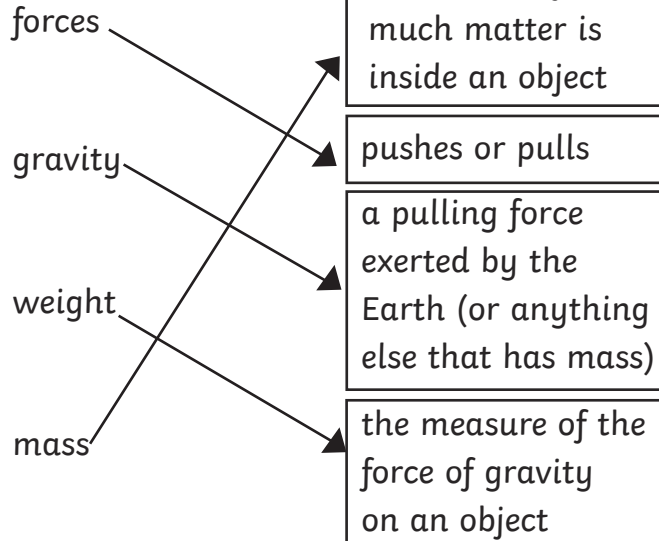
The more wheels in a pulley, the less force is needed to lift a weight. \_\_\_\_\_

When two gears are connected, they always turn in the same direction to each other. \_\_\_\_\_

A lever always rests on a pivot. \_\_\_\_\_

# Year 5 Forces Answers

Draw a line to match the word to its definition.



Name **three** things that forces can do to an object.

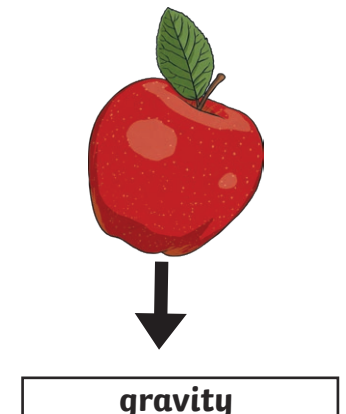
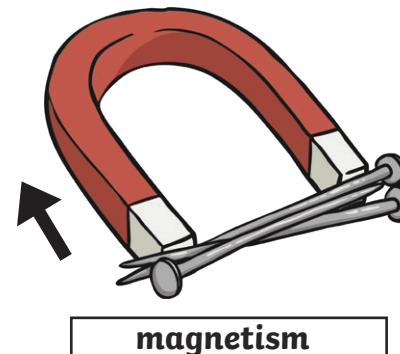
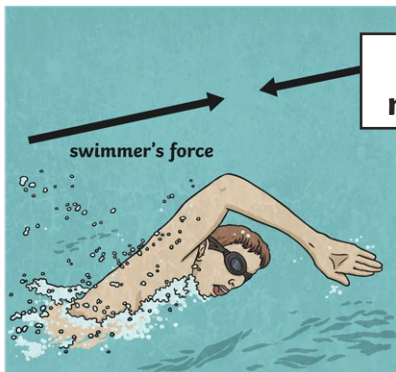
Accept any of the following:

- **start to move;**
- **change direction;**
- **change its shape;**
- **stop moving;**
- **move faster;**
- **move more slowly.**

What unit of measure is mass measured in? **kilograms (kg)**

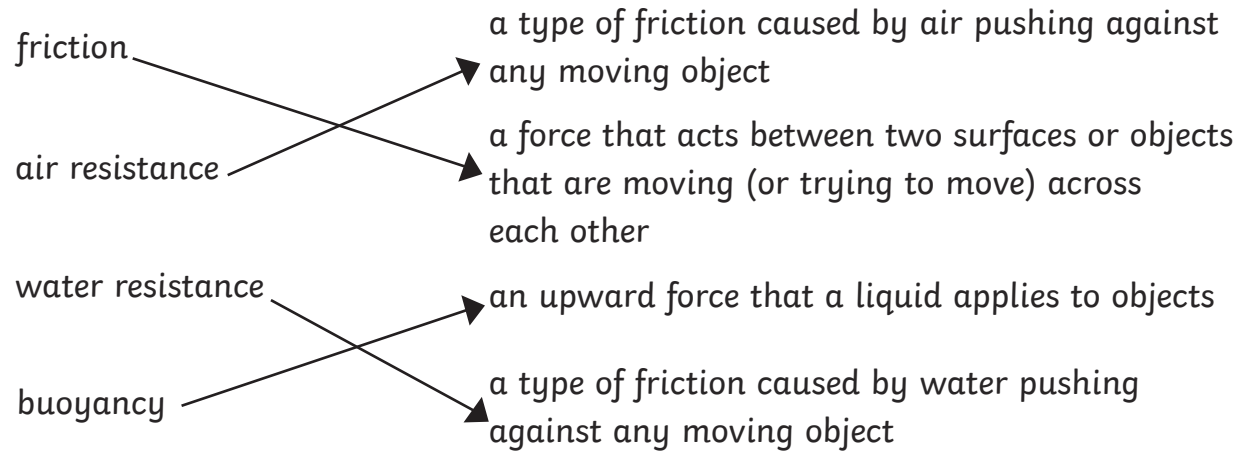
What unit of measure is weight measured in? **newtons (N)**

Write the name of the force in action next to each arrow.



# Year 5 Forces Answers

Draw a line to match each word to its definition.



What is the name of the scientist who developed a theory of gravity when he saw an apple fall to the ground?

**Isaac Newton**

Write **true** or **false** next to each sentence.

Friction always acts in the opposite direction to the moving object. **true**

Friction always speeds up a moving object. **false**

Smooth surfaces create more friction than rough surfaces. **false**

Give an example of when friction is helpful.

**Example answers include:**

- **brakes on a car or bike**
- **grips on the sole of a shoe**
- **air resistance slowing a parachute down**

Give an example of when friction is unhelpful.

**Example answers include:**

- **friction on a bike chain slowing down pedalling**
- **water resistance slowing down a swimmer**

# Year 5 Forces Answers

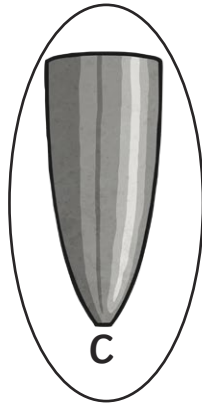
Circle the object that would fall the fastest in water.



A



B



C



D

Explain your answer.

**Shape C is streamlined. It is pointed at the bottom so can cut through water easily. Its curved shape allows the water to flow over it. This creates less water resistance so it can move through the water faster than the other objects**

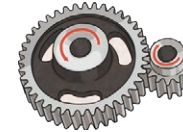
Write the name of the mechanism next to each picture.



**pulley**



**lever**



**cogs/gears**

Fill in the gaps in the sentences.

The Earth's gravitational pull is the pull that Earth exerts on an **object**, pulling it towards Earth's **centre**. It is the Earth's gravitational pull which keeps us on the **ground**.

Select the correct word from each bracket to complete the sentences.

The Moon has a **smaller** (smaller/ greater) mass than Earth so the gravitational pull on the Moon is **smaller** (smaller/ greater) than it is on Earth.

Jupiter has a **greater** (smaller/ greater) mass than Earth so the gravitational pull on Jupiter is **greater** (smaller/ greater) than it is on Earth.

Write **true** or **false** next to each sentence.

The more wheels in a pulley, the less force is needed to lift a weight. **true**

When two gears are connected, they always turn in the same direction to each other. **false**

A lever always rests on a pivot. **true**