

Direction	the line in which something or someone moves.
Elastic	a material that is able to resume its normal shape after being stretched or squashed.
Recycle	changing of waste into reusable material.
Reuse	use of an item or material more than once.
Slow	moving or working only at a low speed.
Fast	moving or working at a high speed.
Stop	an action or event coming to an end.
Move	to go in a specific direction or manner.
Bend	to shape or force an object or material into a curve or angle.
Pull	a force acting on an object, bringing it closer to the person or object applying the force.
Push	a force acting on an object, moving it further away from the person or object applying the force.
Squash	to crush or squeeze an object or material with so much force the object becomes flat, soft or out of shape.
Stretch	to be able to be made longer or wider without tearing or breaking.

**Asking Questions**

What?	What if?	Will?
Why?	Would?	How does?
Which?	Does it?	

**Plan a journey around the world where you cannot travel by flying.**

**Oceans**



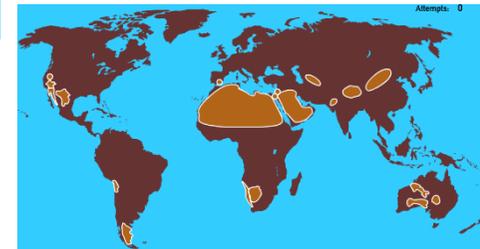
Score: 5  
Attempts: 0

What if we couldn't fly around the world? What if we had to move across difficult terrain in vehicles and vessels made ourselves?  
There are many obstacles blocking someone from travelling around the Earth. Oceans, mountains and deserts are very large challenging obstacles.  
Deserts and oceans are very difficult for humans to survive in and mountains are very difficult to cross.

**Mountains of the world**



**Deserts of the world**



**Boats: floating and sinking**



Boats come in many different shapes and sizes, depending on what they are designed to carry, or the conditions they are needed to survive through.

Boats are usually shaped with a flat, wide bottom, which helps the boat to sit on the water, rather than sink into the water.

It is important to remember that a boat with too many holes in the hull will soon start to collect water, and get heavier – eventually sinking.

**Boats: materials**

**Waterproof:**  
Plastic, leather, well woven plant materials can all be waterproof materials able to be used to line the outside of a boat.

**Windproof:**  
The materials listed above as waterproof above are all free from hole through which wind might pass through. This makes them all wind proof.

**Flexible:**  
Boats are not usually box shaped. This means whatever material boats are made from would need to be flexible and able to bend but not easily fold.

**Twists:**  
Rope is a very popular tool to have on a boat. Rope needs to be strong, flexible and reasonably light weight. Rope is much lighter than metal chains. Rope is sometimes made from natural fibres, which often snap when pulled. However, rope is made incredibly strong by twisting lots of these fibres together, where they strengthen each other. Rope can also be made from man-made materials, especially if they can be twisted.

**Wheeled vehicles**



Walking and running long distances is very tiring and can use up lots of energy.



The invention of the wheel meant that humans could move large or very heavy objects (which would usually create a lot of friction) much more easily across bigger distances with a lot less energy needed.



**Friction**

Friction is a force created when two surfaces move across each other. The greater the friction, the more difficult it is for the two surfaces to cross each other.

Some substances can reduce friction. Water can reduce friction between two surfaces. When people go skiing, a thin layer of water forms between the snow and the skis.

This reduces friction allowing the skier to glide across the snow, much quicker than walking through it.

This is also why cars often crash on wet roads – the water lubricates the road, and causing the wheels to skate across the road uncontrollably.



It is important to remember that although friction can make some movements difficult, it is also very important to allow other movements such as running. Trainers often have rubber soles and large air gaps for tread to increase friction so we can push against the ground to run quicker.

## Quiz

### Question 1

The invention of which item made moving large, heavy objects across a big distance easier?

- A. A boat
- B. Trainers
- C. The wheel
- D. Rope

### Question 2

What is elastic?

- A. The line in which something or someone moves
- B. The changing of waste into a reusable material
- C. Movement in a specific direction
- D. A material that resumes its usual shape after being stretched or squashed.

### Question 3

When a material is squashed it...

- A. is able to be made longer without tearing.
- B. goes in a specific direction or manner.
- C. is the line in which something moves or travels.
- D. Becomes flat, soft or out of shape.

### Question 4

Which of the following is not usually waterproof?

- A. Leather
- B. Cardboard
- C. Well woven plant material
- D. Plastic

### Question 5

Friction is ...

- A. a force created when two objects move across each other.
- B. moving or working only at a low speed.
- C. a force acting on an object, bringing it closer to the person or object applying the force.
- D. an action or event coming to an end.

### Question 6

A boat with too many holes in the hull will...

- A. move with less friction.
- B. hold more objects or people.
- C. Be too light to sink.
- D. Will collect water, get heavier and sink.