Science lesson 1

Can I compare how things move on different surfaces?

Fast Five - the answers are on the next slide!

1) Name 2 types of teeth.

2) What is the function of the heart?

3) What is the impact on the human body if we do not have a healthy lifestyle?

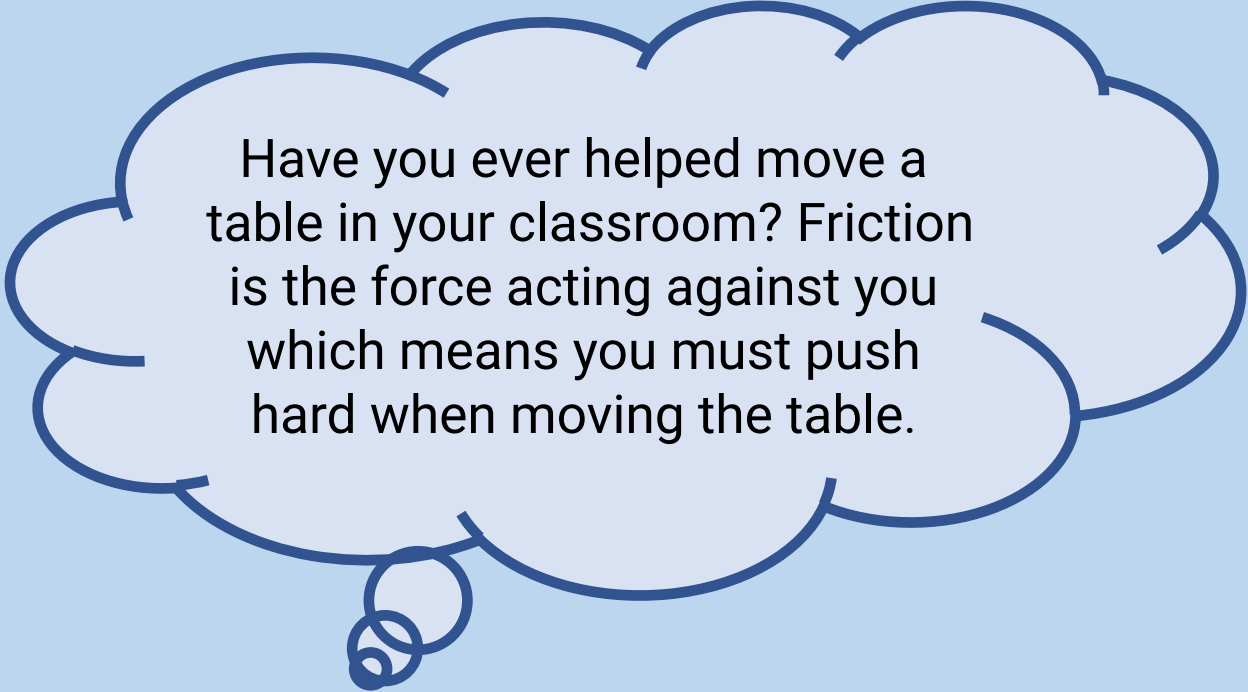4) How many active minutes should you have each day?

5) How big is your heart?

Fast Five - answers

1) Name 2 types of teeth. canines, molars, incisors, premolars,

2) What is the function of the heart? To pump blood/oxygen around the body.

3) What is the impact on the human body if we do not have a healthy lifestyle? Obesity, lack of energy, low mood, health conditions - diabetes, high blood pressure, high cholesterol.

4) How many active minutes should you have each day? 60 minutes

5) How big is your heart? The size of your fist.
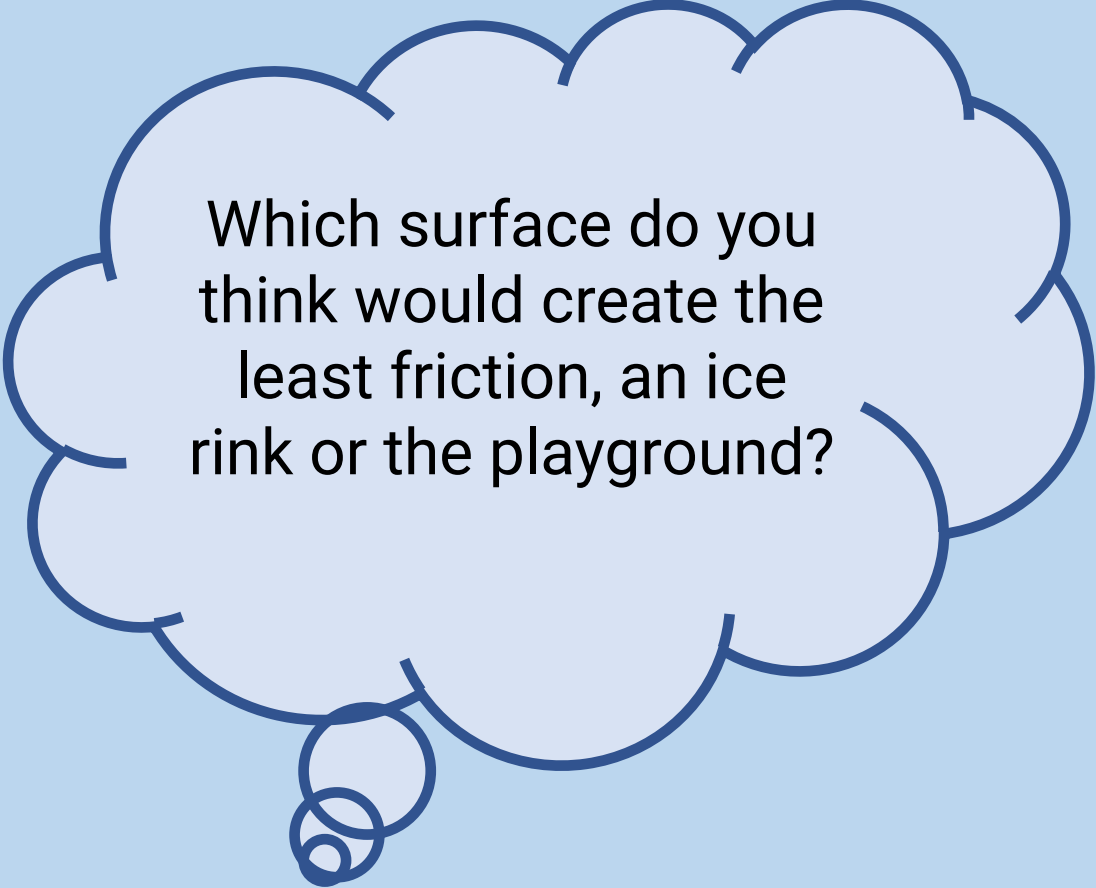
What Is Friction?

Friction is a force between two different surfaces that slide against each other.

Have you ever helped move a table in your classroom? Friction is the force acting against you which means you must push hard when moving the table.

The smoother the surface, the less friction there is.

Think about being outside at school in the winter and in the summer. In the winter, there can be ice on the floor. The surface of ice is very smooth and slippery. Usually, the surface of the playground is rough and bumpy.

Which surface do you think would create the least friction, an ice rink or the playground?

An ice rink!

An ice rink would create the least amount of friction. It would be easier to move the table across an ice rink with its smooth surface, than it would be to move it across the bumpy playground surface.

The smoother a surface, the less friction there will be. This is why an ice skater can glide so smoothly across ice.

Would an ice skater be able to glide across concrete? How about sandpaper?

When can friction be useful?

Friction can be very useful in everyday life.

Car tyres are not smooth – they have ridges in them. This creates more friction between the tyres and the road surface and helps stop cars from skidding across the road.

Look at the bottom of your shoes, they aren't smooth either! The bumpy ridges on the bottom of your shoes creates friction and helps stop you fall over when you're walking.

Investigating friction!

Activity: You are going to test how a coin moves across a variety of surfaces.

- You will need:
- A coin
- Your topic book
- A towel
- Bath
- Pavement outside

Step 1 – write your predictions in your book.

Predictions are where we guess what the result of our experiment might be before we do it. These do not have to be the same as the results – they are just what you think *might* happen!

I predict that the coin will travel the furthest on _____ because it is _____.

I predict that the coin will travel the least on _____ because it is _____.

Step 2 – Complete the experiment

1) Choose one of the surfaces listed above. Place coin at the starting point.

2) Gently slide the coin and see how far it travels.

Step 3 – record the results from your experiment in a table.

If you have a ruler to hand, you could use this to measure the distance travelled. If not, then you can approximate the distance.

Surface	Distance travelled
Topic book	
Towel	
Pavement	
Bath	

Challenge: To challenge yourself, look for more surfaces to test for friction and add it to your table.

Step 4 – Write your conclusion of your experiment.

* Conclusions summarise the results of your experiment. *

Conclusion

The coin moved the least distance on _____ so the surface with the most friction is _____. The surface of the _____ is _____.

The coin moved the furthest distance on _____ so the surface with the least friction is_____. The surface of the _____ is _____.

Challenge: To challenge yourself, extend these conclusions by explaining why. What features of the surface affect the amount of friction?

Word bank: friction, smooth, rough, slow, fast, distance, furthest, shortest