Investigate the effects of friction.

Success Criteria

- I can explain the effects of friction on a moving vehicle.
- I can investigate the effects of friction created by different materials.

Vocabulary

Friction

Brake

Slow

Stop

Wheel

Speed

Rough

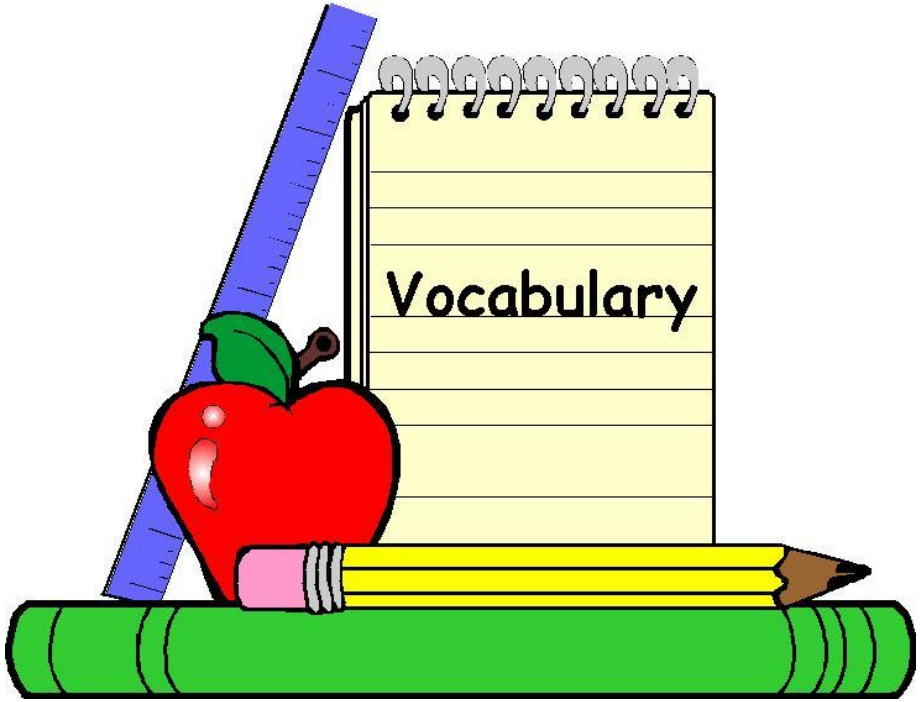
Smooth

Surface

Force

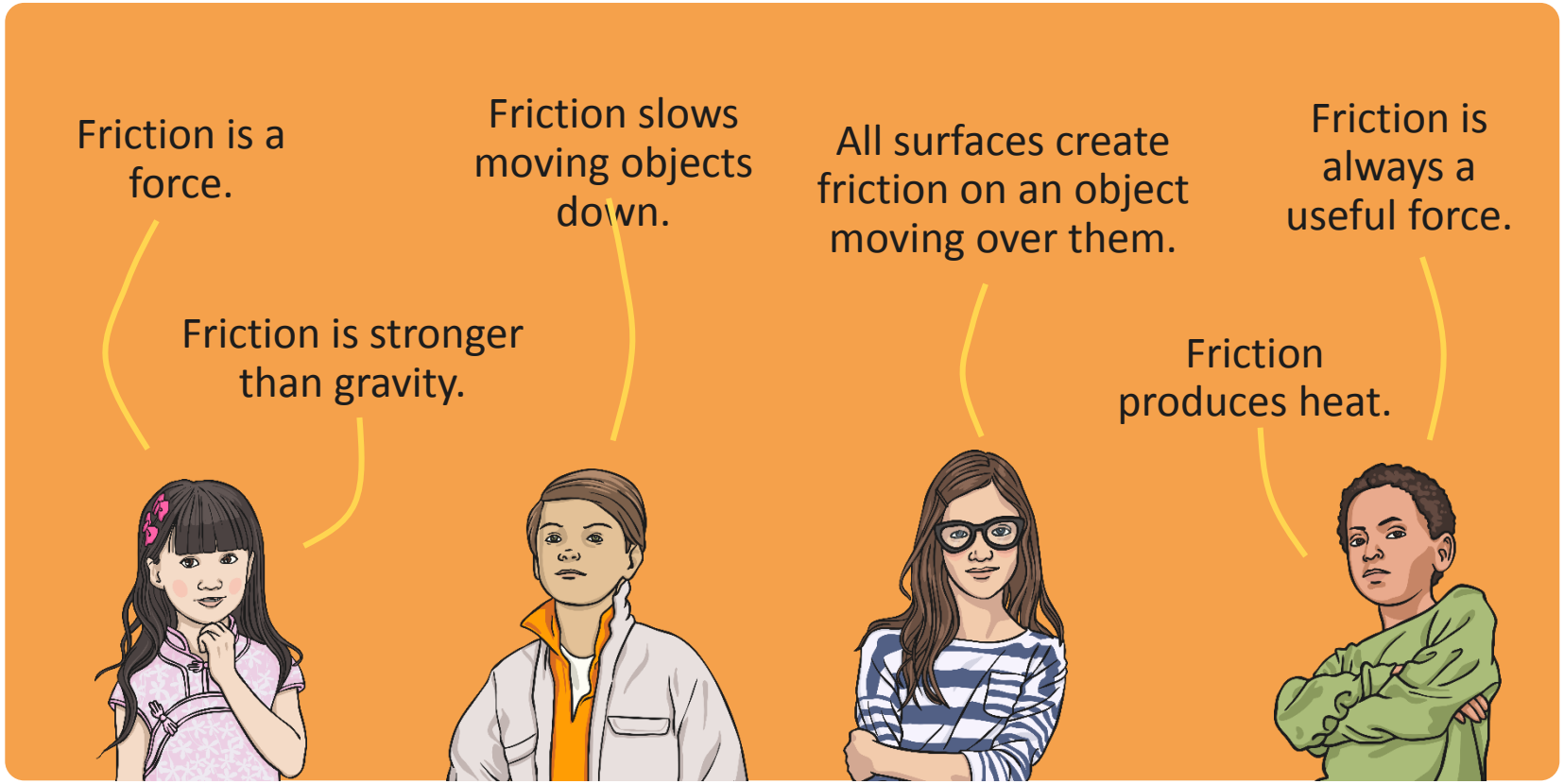
Push

Back



What Is Friction? **True or False**

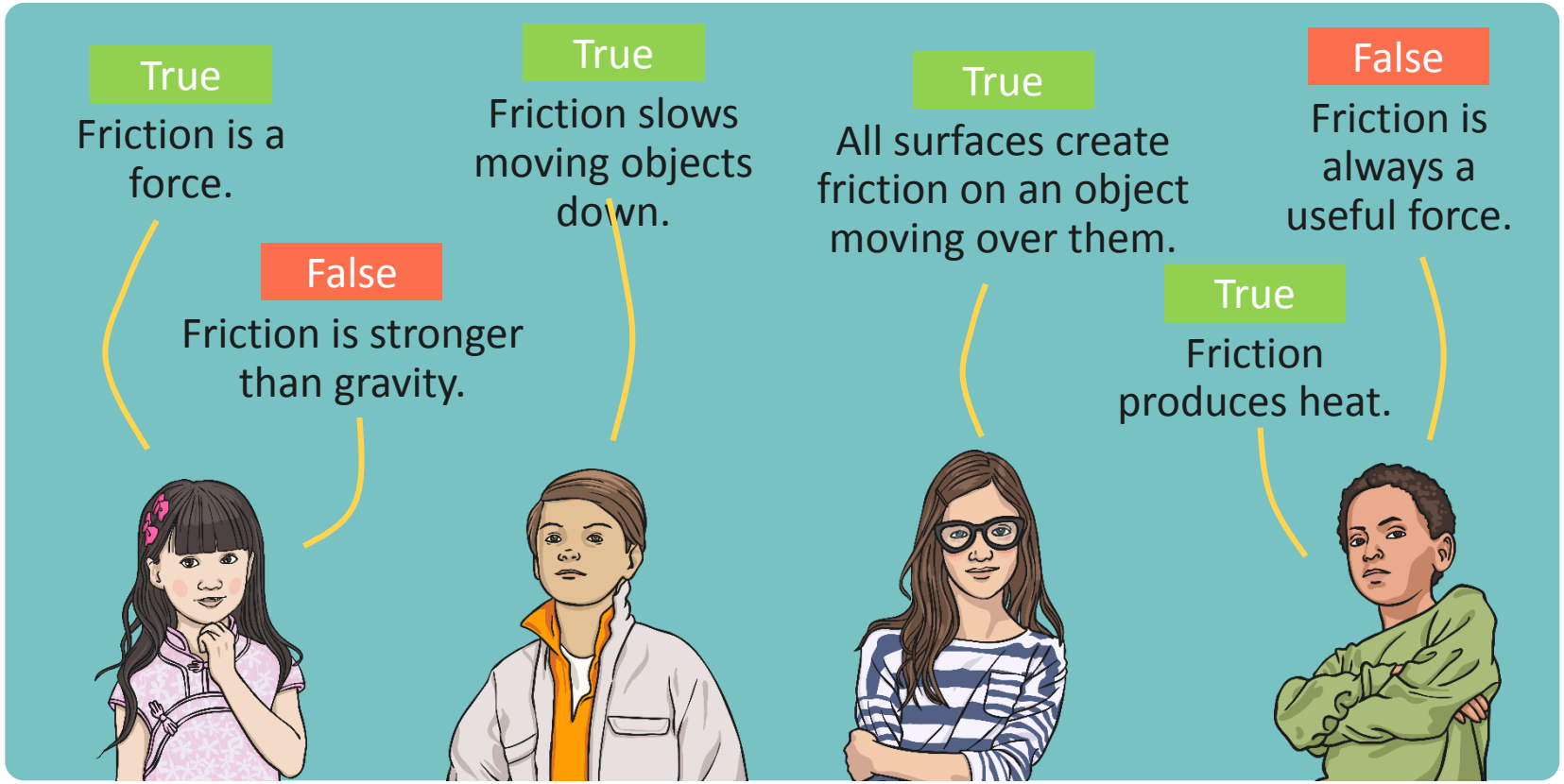
Look at the statements about friction. Can you decide which are true or false?



ANSWERS …

What Is Friction?

How did you do?



What Is Friction?

Friction is a **force** that acts between two surfaces or objects that are moving, or trying to move across each other.

Friction always acts in the **opposite direction** to the moving object, and always **slows** a moving object down.

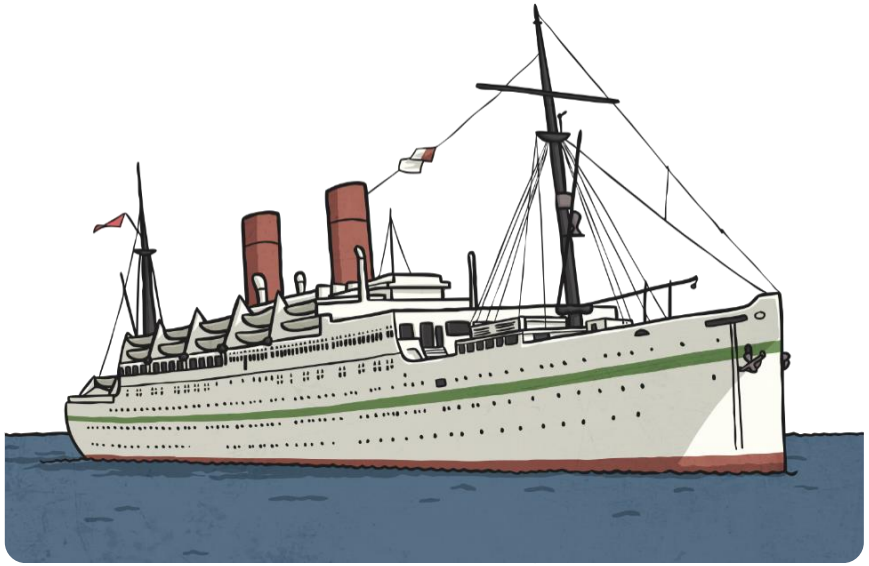
All surfaces create friction on an object moving across them. Even very smooth surfaces, like ice, create *some* friction.

What Is Friction?

Air resistance and **water resistance** are both forms of **friction**. Gases and liquids create friction as well as solids.

Friction can be **useful** – for example, the soles of your shoes create friction with the ground, preventing you from slipping over.

However, friction can be **unhelpful** too – friction on a bike chain can make the bike harder to pedal.



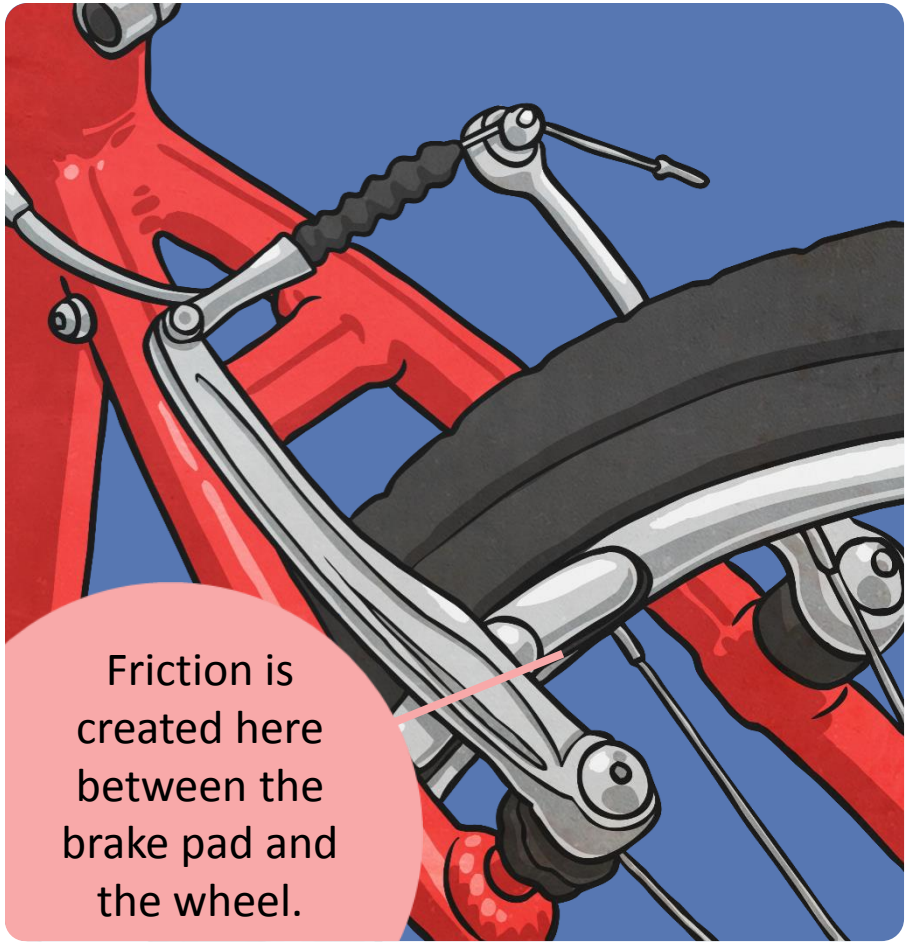
Friction in Action

Watch this clip to see how the force of friction is used to make brakes slow down or stop a moving vehicle. https://www.bbc.co.uk/bitesize/clips/z462tfr

Friction in Action

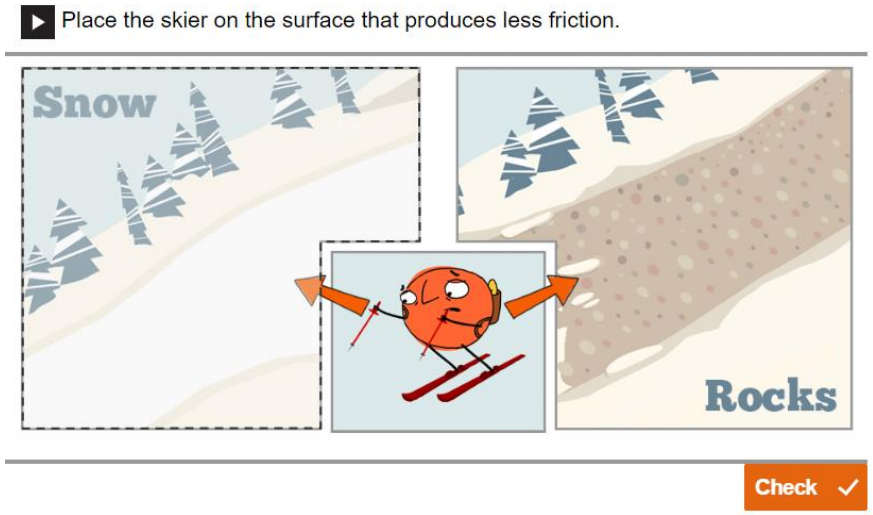
The brakes on a bike or car work by creating friction between the brake pad and the wheels.

The friction opposes the movement of the wheels, slowing them down and eventually stopping them.



Watch the video below, read the info and complete the activities:

https://www.bbc.co.uk/bitesize/topics/zsxxsbk/articles/zxqrdxs



TASK: Explore the effects of friction

I would like you to complete the two sheets about Friction.

Sheet 1 – “Box Carts”

- Write some facts you know about friction
- Look at the pictures and Make some predictions e.g. *What do you think would happen to a car on ice?* Don’t forget to mention friction in your answers!

Sheet 2 – “Speed Bumps”

- Draw a picture of two surfaces cause friction.
- Read the examples and circle the level of friction you think would occur (high medium low)
- Answer the questions at the bottom of the page.

Final Task:

1. Design a race course for a remote control car.
2. Use labels to show the types of surfaces you would use.
3. Label each area to show if it has low, medium or high friction.