

Friction Investigation

What is friction?

Friction is a contact force that slows things down when two surfaces rub together. The **rougher** the surface, the **more friction** — so a ball stops sooner on carpet than on smooth vinyl.

Smooth (vinyl)



Rough (carpet)



From the same start and the same push, the ball rolls far on the smooth surface but stops sooner on the rough surface, because rough surfaces have more friction.

Friction is useful! The **brakes** on a bike, the **grip** of your shoes, and being able to **walk** without slipping all rely on friction.

Run your friction investigation

Question and prediction

Q1. Write the question your test will answer (about the surface and how far the ball travels).

Q2. Which surface do you **predict** the ball will travel **furthest** on? Why?

Make it fair

Q3. Complete the fair-test plan.

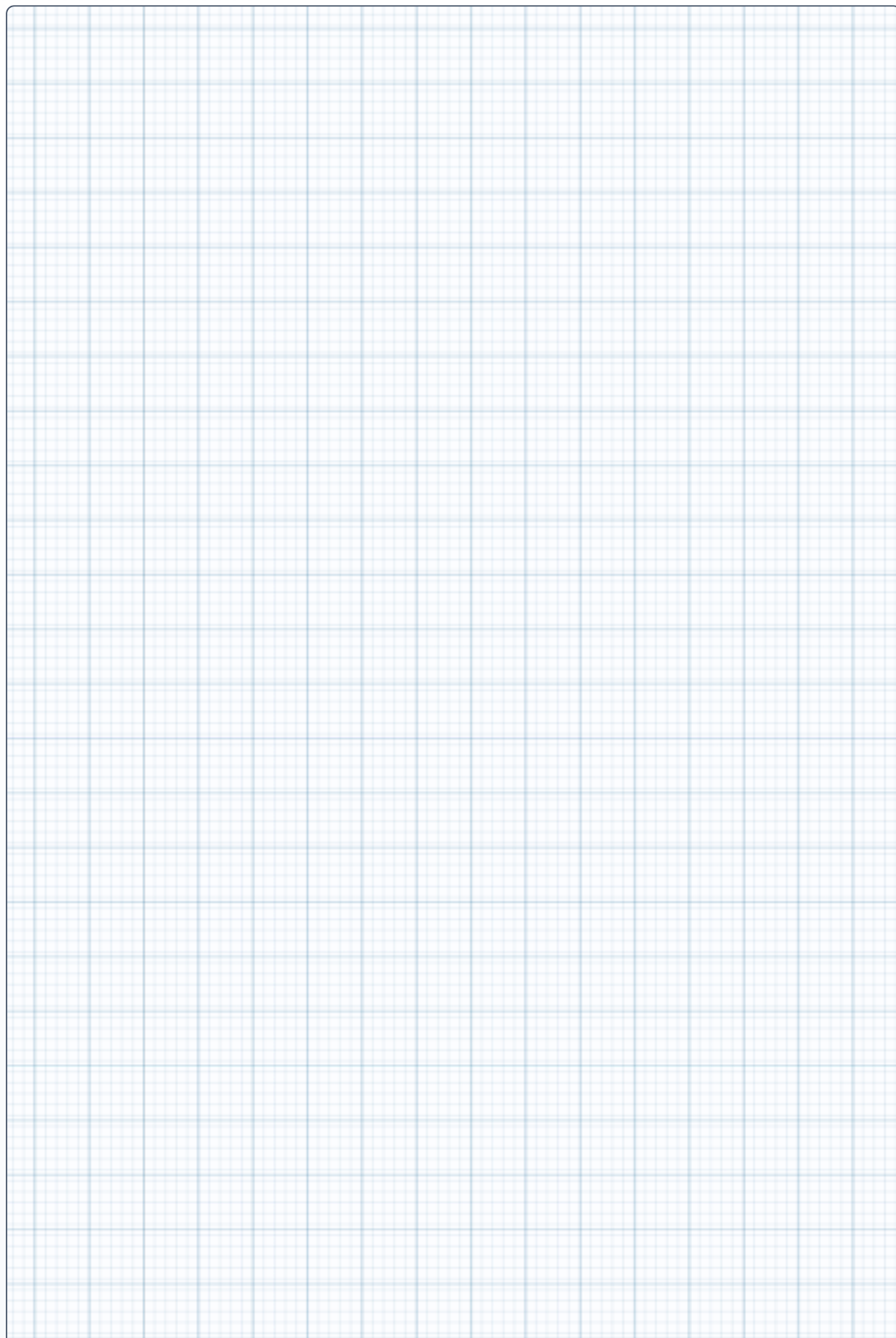
Part of the test	What I will do
I will CHANGE	
I will MEASURE	
I will KEEP THE SAME	

Results

Q4. Record how far the ball travelled on each surface.

Surface	Distance travelled (m)

Q5. Draw a **column graph** of your results. Label both axes and give it a title.



Conclusion and evaluation

Q6. On which surface was there the **most friction**? How does your data show this?

Q7. Was your test fair? What is one thing you would improve next time?
