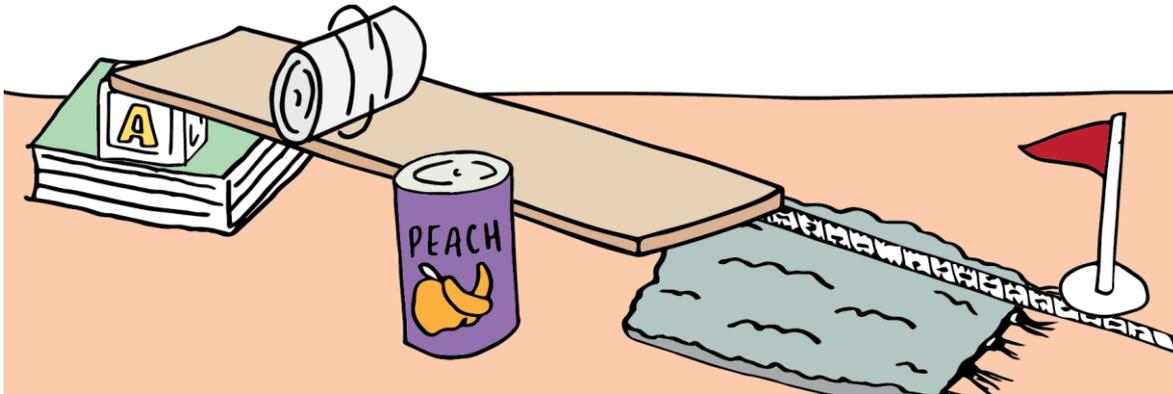


GRAVITY AND FRICTION FINALE

Science in motion | Gravity and friction | Activity A5



CHALLENGE

Using all your prior experiences around gravity and friction, your final challenge is to:

- roll a can down a standardised ramp so the can stops as close as possible to a marker on the floor 1.5 - 3m from the bottom of the ramp.

As a group discuss what you have learnt from the previous sessions and come up with a plan.

Try to be like scientists and work methodically to try your ideas, recording the results and slowly redesigning your approach to get as close as possible to the mark on the floor.

You will demonstrate your final solution to the whole class after your presentation.

Notes:

Ramps should be standardised, that is height and length is the same for all groups.

The surfaces you use to run onto need not be large. Even $\frac{1}{2}$ - 1m strips of this surface will be enough to create variation in the results. Adapt to suit your materials and needs.

Things you'll need

Ramps for rolling down (same for each group)

Blocks to set height of ramp (same height for each group)

Can of food per group

Thick hair ties (at least 5 per group)

Socks (varying thicknesses)

Surfaces to run onto (carpet, wood, lino, bubble wrap, baking paper, sand paper etc)

Results chart

How to make a can stop where we want it to?			
Activity or trial	Patterns and observations	What do we think caused these patterns or observations?	How do these patterns help us answer the big question?
1.			
2.			
3.			
4.			

The presentation

Each group makes a 5-minute presentation to the class which will tell the story of how you developed your solution.

You are expected to link why you tried things from your previous sessions about gravity and friction. For example:

“based on the evidence and what we learned in the XXX activity we thought we’d try this first. It didn’t work, then we remembered that when we did the YYY activity we learnt... - so we tried doing ZZZ and this is the result”.

You are also expected to make statements about:

- the relationship between gravity and friction
- how friction affects speed and distance travelled.

You may also use evidence from everyday life in your explanation.

All group members are expected to contribute to the planning about what will be said, although one person may do the talking. Be prepared to answer questions about your solution.

Teacher support material

For further activities and curriculum support: [Science in motion \(Waka Kotahi Education Portal\)](#)