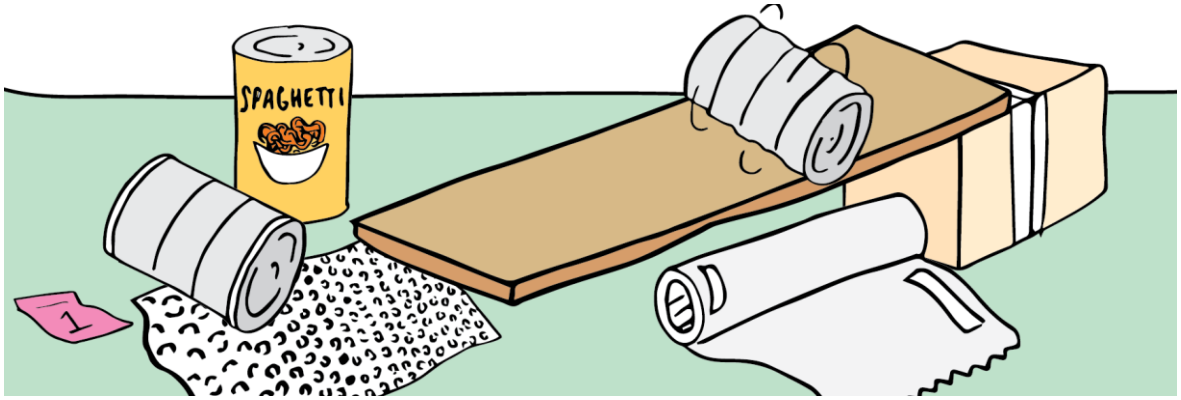
SLIPPERY SLOPES AND ROUGH ROADS

Science in motion | Gravity and friction | Activity A4



WHAT TO DO

Using the gear provided, explore what happens when you roll the can down the ramp and onto a variety of surfaces.

- Work out a way to keep each trial the same and record your results.
- Discuss your results within your group. Answer the questions below.

Note: the surfaces you use to run onto need not be large. Even $^1/_2$ - 1m strips of this surface will be enough to create variation in the results. Adapt to suit your materials and needs.

Things to think about

What is “pulling” the can down the ramp?

Why is it important we keep the ramp the same each time?

Which surface makes the can roll the furthest? Why do you think this might be?

Which surface makes the can roll the least distance? Why do you think this might be?

How could you further test or check your ideas?

Can you order your surfaces from those with the least friction to those with the most based on evidence?

Things you’ll need

Ramps for rolling down (timber offcuts, old corflute signs sliced into track widths)

Blocks to set height of ramp (books, box, blocks etc)

A can of food per group

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

Measuring rulers or tape measures

Post-it notes or chalk (to mark the end of the “run”)

Discuss your results with another group. How do their results compare to yours? If there are differences, can you suggest why?

Can you describe what friction is in relation to this investigation and/or everyday life?

Make a group statement about how friction effects distance travelled and speed.

Does this relate to a similar thing you've noticed in life around you?

Teacher support material

For further activities and curriculum support:

Science in motion (Waka Kotahi Education Portal)