

## Science experiment - Friction

Home learners

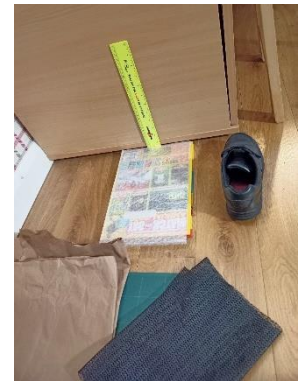
You need the following:

- a child's shoe
- ruler
- small piece of blutak (or something to keep the ruler upright against the wall)
- large hardback book (e.g. annual or picture book)



**In addition**, you need **either**:

some different materials to put on top of the book as surfaces to test e.g. tin foil, bubble wrap, sandpaper, tissue paper, paper, hard plastic, non-slip mat, cling film, cloth, sheet of wood, carpet square - as many as you can find.



**or**

a selection of different shoes for one child (so they are about the same size/weight)



**or**

all of them if your child wants to do both experiments

Results chart - **Experiment 1 - Which shoe sole** has the greatest friction (grip)? Different shoes

Shoe (so you know which one)	Material on sole	Prediction for grippiest (tick only one)	Result - Height the book slipped (cm)

Results chart - **Experiment 2 - Which surface** has the greatest friction (grip)? Different materials

Surface name	Prediction for grippiest (tick only one)	Result - Height the book slipped (cm)

Did your prediction turn out to be true?
The shoe/surface with the most friction - would it be sensible to make shoe soles/surfaces from this?
What would you advise the Health and Safety Officer about which shoes and surfaces are best at avoiding slips and falls:
If you did both experiments, which shoe sole with which surface has the most friction?

**Extra Challenge Work:**

Results chart - **Experiment 1 - Which shoe sole** has the greatest friction (grip)?

Shoe (so you know which one)	Material on sole	Prediction for grippiest (tick one)	Height the book slipped (cm)		
			Result 1	Result 2	Result 3

Results chart - **Experiment 2 - Which surface** has the greatest friction (grip)?

Surface name	Prediction for grippiest (tick one)	Height the book slipped (cm)		
		Result 1	Result 2	Result 3

Did your prediction turn out to be true?
The shoe/surface with the most friction - would it be sensible to make shoe soles/surfaces from this?
What would you advise the Health and Safety Officer about which shoes and surfaces are best at avoiding slips and falls:
If you did both experiments, which shoe sole with which surface has the most friction?