

Topic: On the move

Science : Forces

What should I already know?

Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, water, rock, paper and cardboard for particular uses.

Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching (applying a force).

Scientific skills, knowledge and understanding

- Making and testing simple predictions
- To investigate the forces acting in sinking and floating
- To understand force diagrams
- To develop an understanding that forces act in different directions
- To ask and answer questions related to spinners
- To suggest a question to investigate, make predictions , carry out a fair test,
- To investigate different surfaces and compare how things move on different surfaces

Working scientifically

- Make and test simple predictions
- To ask and answer questions related to spinners
- To suggest a question to investigate, make predictions
- To begin to make some decisions about the best way to answer questions
- To decide how to set up a simple fair test and recognise when it is not fair
- carry out a fair test,
- To investigate different surfaces and compare how things move on different surfaces
- Collect data and record and present findings using simple scientific language
- Use their results to consider whether they met their predictions
- Draw a simple conclusion
- Write a simple explanation of why things happened

Vocabulary

Surface
Rough
Smooth
Friction
Force
Direction
Gravity
Up thrust
Air resistance
Force diagram
Opposing
Balanced
Unbalanced
Surface area

What I will know by the end of the unit

- To know that a force can make an object move, speed up, slow down or change direction
- to understand that gravity is a force pulling down
- gravity makes an object sink
- up thrust is a force that makes an object float
- to predict which objects will fall more quickly/ slowly
- the shape of an object is important in determining whether an object will sink or float
- shape is also important in determining how quickly an object falls because of air resistance
- forces operate in pairs in opposing directions
- not all forces are the same
- to ask and answer a question related to spinners and cars travelling down a ramp
- to evaluate whether a fair test was carried out on spinners falling and a car down a ramp
- friction is a force that slows a moving object, created by two surfaces rubbing together
- a car travels more quickly down a smooth surface and more slowly down a rough surface