

Preston Primary School Knowledge Organiser

Topic: Science

Term: Spring 2 and Summer 1

Year: Unit 4

Duration: 9 weeks

The Powerful Knowledge we will take away from this Learning Enquiry (what will be learning):

- I can explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.
- I can find scientific evidence that has been used to support or refute ideas and arguments.
- I can take repeated accurate measurements using a stopwatch.
- I can explain the degree of trust in results.
- I can use test results to make predictions to set up further fair tests.
- I can identify the effects of air resistance, water resistance and friction: that act between moving surfaces.
- I can recognise that some mechanisms [including levers, pulleys, and gears] allow a smaller force to have a greater effect.

Our Key Vocabulary:

Word	Meaning
Gravity	Gravity is the name for a force that pulls everything down toward the centre of the Earth. Gravity also pulls any object with mass toward each other.
Friction	Friction is a force. The resistance of motion when one object rubs against another. Whenever two objects rub against each other, they cause friction. Friction works against the motion and acts in the opposite direction.
Air resistance	Air resistance is a type of friction between air and another material. It is the opposing force that the object experiences as it passes through the air.
Water resistance	Water resistance is a type of force that uses friction to slow things down that are moving through water. Water resistance doesn't have to be just water - it can happen to objects moving through any type of fluid.
Upthrust	Upthrust force is simply any force that is causing something to be pushed upwards.

What I already know:

In Unit 3, I have learnt about magnets. This included which objects attract magnets and how magnets attract and repel.

Experiment:

We are going to think like a scientist and use our 'working scientifically skills' to complete an experiment exploring how the size of an object effects the resistance.

Websites:

What is Friction?

<https://www.bbc.co.uk/bitesize/topics/zsxxsbk/articles/zxqrdxs#:~:text=Friction%20is%20a%20force%20between,moving%2C%20or%20trying%20to%20move.>

What is upthrust?

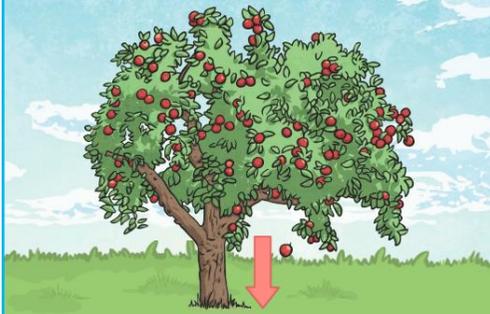
<https://www.bbc.co.uk/bitesize/topics/zc89k7h/articles/zytqj6f>

What is air resistance?

<https://www.bbc.co.uk/bitesize/clips/zsjd7ty#:~:text=Air%20resistance%20or%20drag%2C%20acts,to%20help%20them%20move%20forward.>

Different types of forces:

Gravity



Gravity is the force that pulls objects downwards towards the centre of the Earth.

Friction



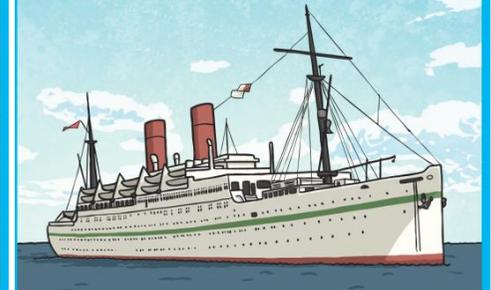
Friction is the resistance between two surfaces that are in contact with each other.

Air Resistance



Air resistance pushes against moving objects.

Buoyancy



Buoyancy (or upthrust) is the force that pushes an object upwards.