



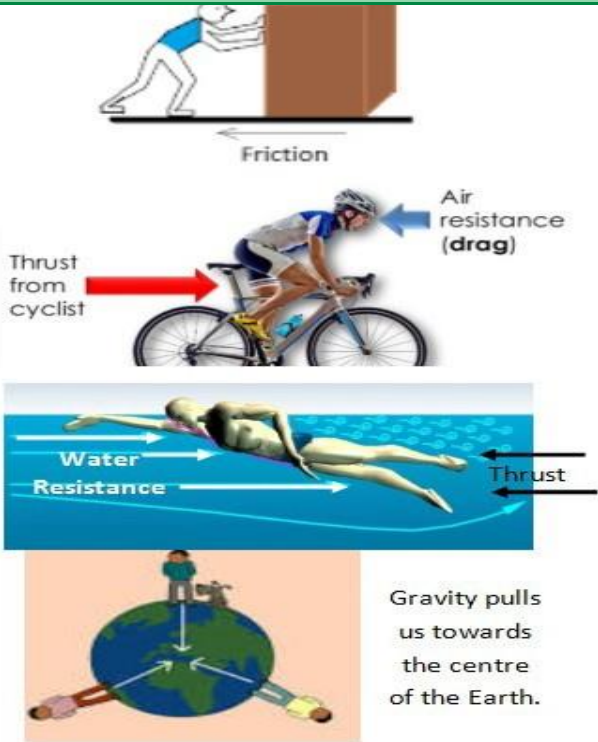


| What? (Key Vocabulary) | |
|------------------------|--|
| Spelling | Definition/Sentence |
| Streamlined | A shape that presents least resistance to air or water |
| Surface | The top layer of something |
| Grip | To have a good connection with a surface |
| Drag | To cause to slow down |
| Centre | The middle |



| What? (Key Knowledge) | |
|---|---|
| Forces | |
| What is a force? | A force is either: push or a pull |
| Forces can make things... | Speed up, slow down, change shape and change direction |
| A force that speeds something up | The child is pushing the car to speed it up  |
| A force that slows something down | The girls is pulling the dog to slow it down  |
| A force that changes the shape of something | The can is being squeezed so that it changes shape and becomes smaller  |
| A force that changes the direction of something | When the ball is hit with the racket, it will change direction  |

Diagrams and Symbols





Diagrams of forces in action



Recommended Experiments

| Types of force | |
|------------------|---|
| Magnetism | Attract:  Repel:  Magnets attract or repel each other or other objects North and South attract. But North and North or South and South will repel. |
| Air Resistance | <ul style="list-style-type: none"> Air resistance slows down moving objects, because air slows you down as you move through it To travel faster through the air, things need to be streamlined |
| Water Resistance | <ul style="list-style-type: none"> Water resistance slows down moving objects, because water slows you down as you move through it To travel faster through the water, things need to be streamlined |
| Friction | <ul style="list-style-type: none"> Friction happens when two surfaces touch each other Friction gives us grip Friction produces heat Rougher surfaces slow things down a lot Smoother surfaces don't slow things down as much |

A combination of two experiments simultaneously, developing the scientific enquiry skills and approaches used.

| | |
|---|---|
| | Identify the effects of air resistance by designing and testing a parachute which would slow a car down a ramp |
|  | Testing water resistance when swimming (during Year 5 swimming lessons) |
|  | Recognising the impact of mechanisms on forces when using pulleys, levers and gears during technology lessons |
|  | Choosing a feature of a spinner to investigate, for example, size of wings, height dropped or number of paper clips |
|  | |

| Gravity (another force) | |
|-------------------------|--|
| What is gravity? | Gravity is the forces that pulls objects down towards the centre of the Earth. Gravity stops things from floating away into space. When things go into the air (like a football) gravity pulls them back down. |

| Question 1: Which describes the best idea of a force? | Start of unit: | End of Unit: | Question 9: Water Resistance is an example of what? | Start of Unit: | End of Unit: |
|---|----------------|--------------|---|----------------|--------------|
| | | | | | |
| A push | | | A non-contact force | | |
| Motion | | | A contact force | | |
| Pressure | | | Both a contact and non-contact force | | |
| A pull | | | Anti-gravity | | |
| Energy | | | | | |

| Question 2: Which of the following is the unit of force? | Start of unit: | End of Unit: | Question 10: Which type of simple machine is a door hinge? | Start of Unit: | End of Unit: |
|--|----------------|--------------|--|----------------|--------------|
| | | | Screw | | |
| Centimetres | | | Inclined Plane | | |
| Decibels | | | Pulley | | |
| Lux | | | Lever | | |
| Newtons | | | Wheel and Axle | | |
| Grams | | | Wedge | | |

| Question 3: Which of the following is NOT a force? | Start of unit: | End of Unit: | Question 11: Why would you use a pulley to lift an object? | Start of Unit: | End of Unit: |
|--|----------------|--------------|--|----------------|--------------|
| | | | To steer the object | | |
| Magnetism | | | You wouldn't, you would use an inclined plane | | |
| Air Resistance | | | The object becomes lighter | | |
| Movement | | | You use less effort to lift the object | | |
| Water Resistance | | | To increase the weight of the object | | |
| Gravity | | | To stop yourself tripping over the object | | |

| Question 4: Which statement about gravity is the true? (tick 2) | Start of unit: | End of Unit: | Question 12: Heidi, is biking and then reaches a hill. What happens when she changes up a gear to make it easier to climb the hill? | Start of Unit: | End of Unit: |
|---|----------------|--------------|---|----------------|--------------|
| | | | | | |
| Gravity is a pull force. | | | She pedals faster because she is using a smaller cog to move the bike | | |
| Heavier objects fall more quickly. | | | She pedals more slowly because she is using a larger cog to move the bike | | |
| Gravity and magnetism are the same thing. | | | Her pedalling speed doesn't change | | |
| Gravity pulls objects to the centre of the Earth | | | | | |
| Small objects don't have gravity | | | | | |

| Question 5: Which of the following forces are types of friction? (tick 2) | Start of unit: | End of Unit: |
|---|----------------|--------------|
| | | |

| | | |
|------------------|--|--|
| Air Resistance | | |
| Gravity | | |
| Magnetism | | |
| Water Resistance | | |
| Pressure | | |

Question 6: You are investigating whether the mass of an object affects the amount of friction. Name one thing you will do to make the test fair.

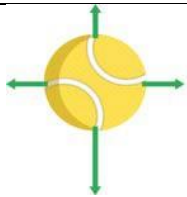
Start of Unit:

End of Unit:

Question 7: Look at the force arrows on this tennis ball. What is happening to the ball?

Start of unit:

End of Unit:



It is moving up

It is staying still

It is moving left

It is falling

It is moving right

Question 8: Johnny throws a paper airplane. As it travels through the air, 2 forces act to slow it down. Tick which forces these are. (tick 2)

Start of unit:

End of Unit:

Pressure

Air Resistance

Thrust

Water Resistance

Gravity