ALMOND HILL JUNIOR SCHOOL MEDIUM TERM PLAN

TOPIC TITLE: Science – Forces YEAR GROUP: 5 TERM: Autumn 2

Vocabulary

Force
Magnitude
Gravity
Newton
Newton Metre
Galileo
Balanced
Unbalanced
Accelerate
Decelerate
Stationary
Aerodynamics
Motion
Air resistance
Water resistance
Friction
Gears
Levers
Pulleys
Mechanism

Skills

Enquiry and working scientifically skills (UKS2)

- **plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary**
- take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
- **record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs**
- **use test results to make predictions to set up further comparative and fair tests**
- report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations
- identify scientific evidence that has been used to support or refute ideas or arguments.

What we already know

This unit follows Y5 A1 unit (Earth and Space)

- Earth is a planet 'in space'
- Gravity is a force that stops things from floating in the air
- Space is vast and much is yet to be explored or discovered
- Earth is the only planet able to sustain human life

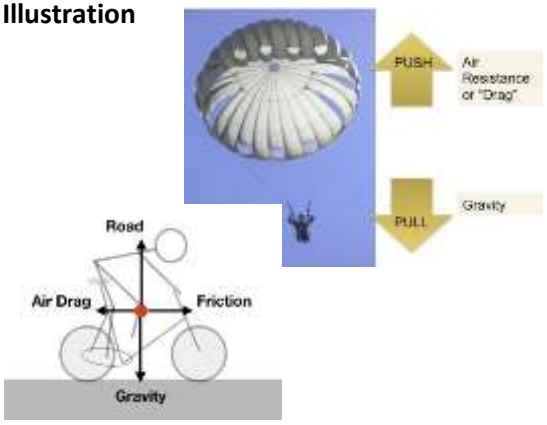
KS1 – Knowledge

Y2/Sp1 – What can 'pushes and pulls' do?
Y2/Sp2 – Mars is a planet – gravity

KS2 – Knowledge and Skills

Y3/Sp2 – Forces and Magnets - A force is a push or a pull, friction experiment
Y3/Sp2 – Taking accurate measurements, Gather and record data accurately in a variety of ways

Illustration



Application/ Outcomes

- Design a parachute which will maximise a person's safety when skydiving

-Discussions about the designs of transport such as planes, trains and cars, considering aerodynamics

-Force diagrams to show the magnitude and direction of a force upon an object

-Research gears, levels and pulleys to determine their impact on a force

Concepts

- Forces can make an object, start moving, stop moving, change direction, move faster, move more slowly, change its shape.
- Weight is how strongly gravity is pulling an object down. It is measured in newtons (N)
- Mass is how much matter is inside an object. It is measured in kilograms (kg)
- Gravity acts between objects and the Earth, pulling them towards its centre

Forces can be balanced or unbalanced

- Air resistance acts on an object and opposes direction of motion
- Pulleys and Levers can be used as a tool where a small force can move or lift a heavier load.

Cross Curricular Links

DT – moving objects – how forces can affect the movement of an object