

HEALTH AND SAFETY IN THE LAB



- A hazard is: **a potential source of harm or adverse health effect on a person or persons'.**
- A risk is: **the chance or probability that a person will be harmed if exposed to a hazard.**

Safety rules are: wear goggles, wear an apron, tie your hair back and following instructions.

CONDUCT



- Air resistance can be shown by creating parachutes .
- Water resistance can be shown by building a paper boat.

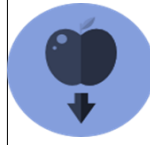
- Weight can be measured using a Newton meter.

Mathematical links



- Gravity pulls objects with a force of approximately 1N for every 100g.
- The Earth takes 365.25 days to orbit the sun.
- The Earth takes 24 hours to rotate on its axis once.

FORCES



The force of **gravity**, can cause changes in the speed of **objects**. As an **object** falls, its speed will continually increase as Earth's **gravity** continually pulls it downward.

Whenever an object moves through water, it experiences the force of water resistance. Water resistance **pushes** objects back, making it hard for them to move through water.

Streamlined objects cut through water or air due to their unique shape, moving more rapidly because of reduced resistance

Friction is a **force** that acts between two surfaces or objects that are **moving**, or trying to move across each other, always acting in the opposite direction to the moving object and causing it to slow down.

The Earth orbits around the Sun. The Moon orbits around the Earth.

The order of the planets from the sun is- Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune.

Day and night are caused by the Earth rotating on its axis.

The sun rises in the East and sets in the West.

Day and night are caused by the Earth rotating on its axis.

INSPIRATIONAL PEOPLE AND EVENTS



- An inventor is a person who creates or discovers a new method, form or device.
- Inventors can be any age and background.
- Sir Isaac Newton, 4th January 1642-1727, discovered gravity and laws of motion.
- The International Space Station is a large spacecraft in orbit around Earth. It serves as a home where crews of astronauts and cosmonauts live.
- NASA (**National Aeronautics and Space Administration**) is using the space station to learn more about living and working in space.
- George Robert Carruthers invented the ultraviolet camera/spectrograph for NASA used on Apollo 16

Key Scientific vocabulary and meanings

- ***Gravity** an invisible force that pulls objects toward each other.
- **Weight** of an object is the force acting on the object due to gravity.
- **Mass** is commonly measured by how much something weighs.
- ***Friction** is a **force** that acts between two surfaces or objects that are **moving**, or trying to move across each other.
- **Resistance** is a force pushing against an object and can often relate to water or air.
- The **independent variable** is the thing you will **change** in your investigation.
- The **dependent variable** is the thing that you will **observe or measure**.
- The **controlled variables** are the things you will **keep the same**.
- The Earth is a **spheroid**, which means it is nearly a **sphere**.
- **Rotate** –to turn/spin around on the spot or on a fixed point.
- **Orbit** - to move around an object (the Earth orbits the sun).
- **Axis** - a fixed point where something turns /spin.