

Science is a way of learning about the world.

The 5 steps to the scientific method

- **Question**-The scientific method starts when you ask a question about something that you observe: How, What, When, Who, Which, Why, or Where?
- **Hypothesis**-A hypothesis is an educated guess about how things work. It is an attempt to answer your question with an explanation that can be tested.
- **Experiment**- Your experiment tests whether your prediction is accurate and thus your hypothesis is supported or not. It is important for your experiment to be a fair test. You conduct a fair test by making sure that you change only one factor at a time while keeping all other conditions the same.
- **Data**- you collect your measurements
- **conclusion**- analyze them and see if they support your hypothesis

A **hypothesis** is also called an educated guess

Scientists use charts and graphs to keep their **data** organized.

The **independent (manipulated) variable** is the one factor that a scientist purposely changes during an experiment.

The **dependent (Responding) variable** is the factor that changes as a result of changes to the manipulated, or independent variable in an experiment. It is what you measure and record.

Factors that stay the same in an experiment are control variables.

Observation is when you use one or more of your natural senses to gather information is making a forecast or stating what will happen in the future based on experience or evidence is known as predicting .

A push or pull is called a force .

A Newton is the unit for force

The sum of all forces acting on an object is called net force.

An unbalanced force (net force does not = 0) changes an object's motion.

A balanced force (net force = 0) does not change an object's motion.

A force that pulls objects toward each other is called gravity.

The amount of matter in an object is mass.

The force of gravity acting on an object at the surface of a planet is weight.

When two surfaces rub against each other it is called friction.

Work is done on an object when the object moves in the same direction in which the force is exerted.

Kinetic energy is the energy of motion.

Potential energy is stored energy.

Newton's Third Law of Energy states that for every action, there is an equal and opposite reaction.

An object in motion stays in motion, an object at rest stays at rest, unless acted upon by an unbalanced force.

A battery is able to store energy that can be converted to electrical energy when needed.

Coal, oil, and gas are fossil fuels.

Solar, wind, and water are sources of renewable energy.

A stretched rubber band and a bow stretched with an arrow are examples of elastic potential energy.

If two objects are held at the same height, the object with the most mass has more gravitational energy.

Hydroelectric power uses the gravitational potential energy of water to generate electricity.

Scientific law is a statement based on repeated experiments or observations that describe some aspect of the natural world.

Energy is the ability to do work or cause change.

Galileo was an Italian Astronomer and Physicist.

Sir Isaac Newton wrote three laws of motion.

A rolling ball, a moving car, and a spinning wheel are examples of potential energy.

Newton's First Law of Motion is also called The Law of Inertia.

The Law of Conservation of Energy states that energy cannot be created or destroyed.