



EGERTON PRIMARY SCHOOL KNUTSFORD
SCIENCE CONCEPTS AND END POINTS ASSESSMENT

"Ready to learn. Ready to thrive. Ready for tomorrow."

*"The important thing is to
never stop questioning."*

Albert Einstein

Scientific Enquiry

Comparative/Fair testing – Carrying out fair tests to see the effect of a changing variable.

Research – Using secondary sources of information to answer questions.

Observation over time – Observe changes that occur over a period of time (minutes to months).

Pattern-seeking – Identifying patterns and looking for relationships in enquires.

Identifying, grouping and classifying – Identifying patterns and looking for relationships in enquires.

Biology

- **Understand plants** – This concept involves becoming familiar with different types of plants, their structure and reproduction.
- **Understand animals and humans** – This concept involves becoming familiar with different types of animals, humans and the life processes they share.
- **Investigate living things** – This concept involves becoming familiar with a wider range of living things, including insects and understanding life processes.
- **Understand evolution and inheritance** – This concept involves understanding that organisms come into existence, adapt, change and evolve and become extinct.

Chemistry

- **Investigate materials** – This concept involves becoming familiar with a range of materials, their properties, uses and how they may be altered or changed.

Physics

- **Understand movement, forces and magnets** – This concept involves understanding what causes motion.
- **Understand the Earth's movement in space** – This concept involves understanding what causes seasonal changes, day and night.
- **Investigate light and seeing** – This concept involves understanding how light and reflection affect sight.
- **Investigate sound and hearing** – This concept involves understanding how sound is produced, how it travels and how it is heard.
- **Understand electrical circuits** – This concept involves understanding circuits and their role in electrical applications.

Year 5 Living Things and their Habitats



What I know and can explain

I can describe the life cycle of a mammal.

I can describe the life cycle of an amphibian.

I can describe the life cycle of an insect.

I can describe the life cycle of a bird.

I can describe the life process of reproduction in some plants.

I can explain how seeds are dispersed.

I can describe the works of some influential naturalists (such as David Attenborough).

I can compare the life cycles of flowering and non-flowering plants.

Skills

I can display and present key findings orally and in writing.

I can use labelled diagrams to show complex outcomes.

I can use various ways to show complex evidence.





I can answer questions using evidence gathered from different types of enquiry.



Unit Rocket Words: Living Things and their Habitats



Rocket Words

	living organism	something that can move, use energy and reproduce
	naturalist	an expert in the studies of natural history
	primatologist	a person who carries out a scientific study of primates
	metamorphosis	when insects and amphibians transform from larval stage to their adult form
	endangered	an animal is considered endangered when there are very few of them alive
	asexual	where only one parent is needed to create offspring
	reproduction	to make offspring either sexually or asexually
	fertilisation	when a sperm and egg cell join together
	placental mammal	has live young which develop before birth inside a female mammal
	monotreme mammal	a mammal who lays eggs to reproduce

Year 5 Animals including Humans – Reproduction



What I know and can explain
I can explain how plants reproduce asexually.
I can explain how sexual reproduction occurs in plants.
I can discuss how different animals reproduce.
I can compare the gestation periods of different animals.
I can examine the correlation between the age of reproduction of a mammal and its size of litter.
I can explain how asexual reproduction can occur from cuttings.
I can interpret gestation data relating to mammals and draw conclusions.
I can describe the difference between asexual and sexual reproduction in plants.
Skills
I can use various ways to show complex evidence.
I can answer questions using evidence gathered from different types of enquiry.
I can use a graph to record basic data.
I can interpret anomalous results.

Unit Rocket Words: Animals Including Humans		
Rocket Words		
	offspring	a child or young animal
	foetus	the term for an unborn offspring still within the female mammal's body
	dependent	an offspring needing others to look after it
	adolescent	a mammal's young adult offspring
	puberty	the period of life when a human's sexual organs mature
	gestation	the period of time an animal is pregnant for
	pregnant	when an animal contains a foetus within the body
	toddler	the name of the stage given to a young child when they start to walk
	prenatal	the stage before birth when the foetus is developing in the womb
	breeding	mating and producing offspring
	embryo	the name of the unborn offspring in the first few weeks of development
	hormones	chemical messengers produced by the body

Year 5 Properties and changes of materials



What I know and can explain

I can compare and group together everyday materials on the basis of their properties.

I know that some materials will dissolve in liquid to form a solution.

I can describe how to recover a substance from a solution.

I can use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.

I can give reasons for the particular uses of everyday materials, including metals, wood and plastic.

I can demonstrate that dissolving, mixing and changes of state are reversible changes.

I can explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible.

I can understand the materials needed for combustion to occur.

I can observe the effects of burning on different materials.

Skills

I can identify and manage variables.

I can take measurements that are precise as well as accurate.

I can indicate why some results may not be entirely trustworthy.

I can use evidence to suggest further comparative or fair tests that would develop the investigation.

I can select and use appropriate equipment, following discussion of alternatives.

I can use labelled diagrams to show complex outcomes.













I can write a conclusion using evidence and identifying causal links.



Unit Rocket Words: Year 5 – properties of materials



Rocket Words













	conductive	a material that allows heat and/or electricity to pass through it
	magnetic	material that is attracted to a magnet
	thermal	using or producing heat
	conduction	heat moving from one object to another through contact
	hardness	resistance to scratching and pressure
	force	when an object is acted upon by a pull or push motion in a specific direction
	dissolve	to mix with a liquid and become part of the liquid
	solute	a substance that can be dissolved in liquid
	solvent	a substance that can dissolve in a solute, water is a solvent
	substance	any material, such as sugar
	filtering	the separation of a mixture using a tool with small holes to separate particles
	evaporation	the process where a liquid changes into a gas



Unit Rocket Words: Year 5 – changes of materials



Rocket Words

	solute	a substance that can be dissolved in liquid
	solvent	a substance that can dissolve in a solute
	reversible	a change to a substance that can be undone or reversed
	evaporate	the process where a liquid changes to a gas
	chemical change	a type of change in which a new substance is formed
	effervescence	fizzing or bubbling
	fair test	an experiment that only changes one variable
	corrosion	the reaction of a metal with oxygen
	combustion	an irreversible change where a fuel uses oxygen to burn and releases energy
	extinguish	to put out a fire
	reaction	process in which substances are converted into different substances
	carbon dioxide	gas which makes up around 0.04% of our atmosphere

Year 5 Forces



What I know and can explain

I can explain that objects fall towards the Earth because of the force of gravity.

I can identify the effects of air resistance.

I can identify the effects of water resistance.

I can identify the effects of friction.

I can recognize that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.

I can identify when forces are balanced and unbalanced and explain how this relates to the movement of objects.

I can give examples of when pulleys and levers are used in everyday life and describe the impact.

I can give examples of when pulleys and levers are used in everyday life and describe the impact.

I can describe the forces acting on an object and explain how changing the shape would increase or decrease the speed at which it moves.

Skills

I can write a conclusion using evidence and identifying causal links.

I can identify and manage variables.

I can take measurements that are precise as well as accurate.

I can indicate why some results may not be entirely trustworthy.

I can use various ways to record complex evidence.



Unit Rocket Words: Year 5 - forces



Rocket Words

	Sir Isaac Newton	an English physicist and mathematician
	gravity	force which draws objects towards the centre of a planet
	Galileo Galilei	an Italian scientist, and the first astronomer
	parachute	a device, usually made from cloth, designed to create air resistance and slow descent
	water resistance	friction which acts on an object as it moves through water
	streamlined	an object that is shaped to travel through air or water with little resistance
	buoyant	to float
	upthrust	any force that is causing something to be pushed upwards
	friction	the resistance of motion when one object rubs against another
	newton	the international metric unit of force
	lever	a long arm that rests on a support called a fulcrum
	pulley	a wheel over which a belt, rope, or chain is pulled to lift or lower a heavy object

Year 5 Earth and Space



What I know and can explain

I can name the 8 planets in the solar system.

I can describe the movement of the Earth, and other planets, relative to the Sun in the solar system.

I can describe the movement of the Moon relative to the Earth.

I can describe the Sun, Earth and Moon as approximately spherical bodies.

I can explain why day and night occur.

I know that our Sun is a star in the centre of our solar system and that there are other stars in our galaxy and other galaxies.

I can explain why we experience different seasons on Earth.

Skills

I can draw comparisons and discuss differences between terrestrial planets and gas giants.

I can select appropriate equipment, following discussion of alternatives.

I can use labelled diagrams to show complex outcomes.

I can display and present key findings orally and in writing.

I can answer questions using evidence gathered from different types of scientific enquiry.



Unit Rocket Words: Earth and Space



Rocket Words

	heliocentric	The modern model of the solar system, which places the Sun at the centre
	geocentric	The old solar system model, which thought the Earth was at the centre.
	solar system	The name for the Sun and all planets and objects that orbit it.
	astronomy	The study of space, planets and the universe as a whole.
	terrestrial planet	The name given to the four inner rocky planets - Mercury, Venus, Earth and Mars.
	gas giants	The name given to the four outer planets - Jupiter, Saturn, Uranus and Neptune.
	axis	The (imaginary) line which a planet rotates around and tilts on.
	orbit	The path of a celestial object around another, such as Moon around the Earth.
	moon	A body which orbits a planet; also called a natural satellite.
	phase	The appearance of a Moon or planet, according to the amount of illumination.
	waxing	the name given to Moon phases when the Moon is becoming brighter
	waning	the name given to Moon phases when the Moon is becoming darker