

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 livings things** This concept involves becoming familiar with a wider range of livings things, including insects and understanding life processes.
- **Understand evolution and inheritance** This concept involves understanding that organisms come into existence, adapt, changes 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 is it 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.



Rocket Words				
	living organism	something that can move, use energy and reproduce		
	naturalist	an expert in the studies of natural history		
13	primatologist	a person who carries out a scientific study of primates		
6	metamorphosis	when insects and amphibians transform from larval stage to their adult form		
The state of the s	endangered	an animal is considered endangered when there are very few of them alive		
	asexual	where only one parent is needed to create offspring		
2 .2.2.2	reproduction	to make offspring either sexually or asexually		
	fertilisation	when a sperm and egg cell join together		
25	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.

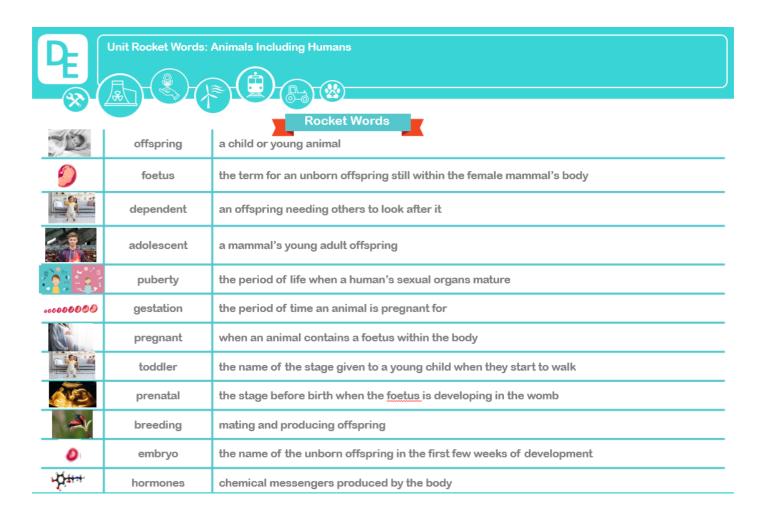
Skills

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.



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.

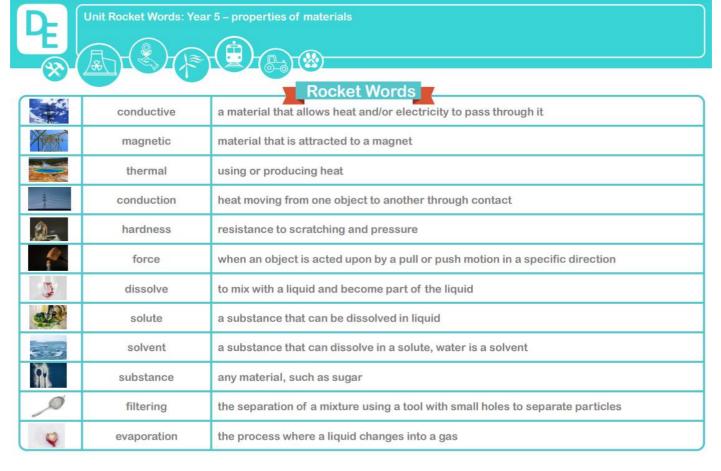
I can indicate why some results may not be entirely trustworthy.

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 - changes of materials









Rocket Words				
100	solute	a substance that can be dissolved in liquid		
Spile	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		
And the	corrosion	the reaction of a metal with oxygen		
1	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		
02	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

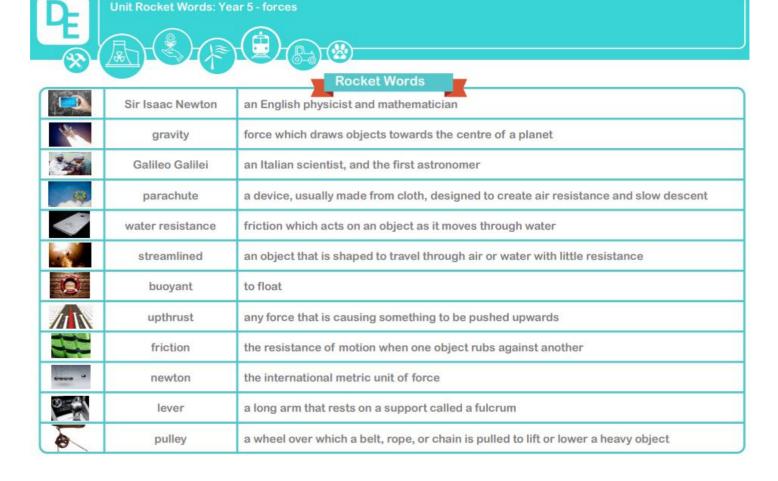
I can write a conclusion using evidence and identifying causal links.

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.



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.



		Rocket Words
(S)	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.
T in	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.
))386((waxing	the name given to Moon phases when the Moon is becoming brighter
))386((waning	the name given to Moon phases when the Moon is becoming darker