Subject	Concept
Animals including humans	Biology

Enquiry skills
Recording

Sequence of Learning

- How does life begin? Cover how babies grow in a womb and then are born. Then how babies grown into children.
- How do we grow and change? Cover childhood and adolescence (puberty)
- What does it mean to be an adult?
- What is old age?
- End of unit double page spread

Current Vocabulary	New Vocabulary
Human body	Pregnancy
Skeleton	Womb
Bones	Foetus
Muscles	Childhood
Joints	Adolescence
Limbs	Puberty
Grow	Adulthood
Develop	Early adulthood
Baby	Middle adulthood
Adult	Late adulthood
Birth	Elderly
Death	

Prior Learning	New Learning	Future Learning
Notice that animals, including humans, have offspring which grow into adults	Describe the changes as humans develop to old age	Reproduction in humans (as an example of a mammal), including the structure and function of the male and female reproductive systems, menstrual cycle (without details of hormones), gametes, fertilisation, gestation and birth, to include the effect of maternal lifestyle on the foetus through the placenta.

Trip/Visitor

School nurse to come in

Misconceptions	Babies are delivered by stalks . Babies grow in the stomach not the womb . All children grow at the same rate/ speed . Puberty only happens when you get to a certain age or only lasts for a certain time

Subject
Earth and Space

Concept
Physics

Enquiry skills	
Researching	Concluding

Sequence of Learning

- What is in our solar system? Go over the planets, moon, stars
- How does the Earth move?
- How do other planets move?
- How does the Moon move?
- How can we describe the Sun, Earth and Moon?
- Does the sun really move across the sky?

Current Vocabulary	New Vocabulary
Seasons	Solar system
Day	Mercury
Night	Venus
Sun	Mars
Moon	Jupiter
Sky	Saturn
Space	Neptune
Earth	Uranus
Planet	Stars
Light	Spherical bodies
	Orbit

Prior Learning	New Learning	Future Learning
Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies.	Describe the movement of the Earth, and other planets, relative to the Sun in the solar system. Describe the movement of the Moon relative to the Earth. Describe the Sun, Earth and Moon as approximately spherical bodies. Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.	Pupils in Key Stage 3 will be taught about: Our Sun as a star, other stars in our galaxy, other galaxies The seasons and the Earth's tilt, day length at different times of year, in different hemispheres

Trip/Visitor

The National Space Centre

https://www.spacecentre.co.uk/

Misconceptions	the Earth is flat • the Sun is a planet • the Sun rotates around the Earth • the Sun moves across the sky during the day • the Sun rises in the morning and sets in the evening • the Moon appears only at night • night is caused by the Moon getting in the way of the Sun or the Sun moving further away from the Earth

Subject	Concept
Forces	Physics

Enquiry skills
Reporting Observing

Sequence of Learning

- What are forces? Retrieval from Y3 leading onto new learning— What is friction?
- Investigate friction
- Substantive lesson— What is water— resistance? What is air— resistance?
- Substantive lesson— What is gravity?
- How do pulleys, levers and gears work?

Current Vocabulary	New Vocabulary
Movement	Air resistance
Force	Gravity
Surface	Water resistance
Push	Lever
Pull	Pulley
Distance	Gears
	Springs

Prior Learning	New Learning	Future Learning
Compare how things move on different surfaces. Notice that some forces need contact between two objects, but magnetic forces can act at a distance.	Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. Identify the effects of air resistance, water resistance and friction that act between moving surfaces. Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect	Pupils in Key Stage 3 will be taught about: Forces as pushes or pulls, arising from the interaction between two objects. Using force arrows in diagrams, adding forces in one dimension, balanced and unbalanced forces. Moment as the turning effect of a force. Forces: associated with deforming objects; stretching and squashing – springs; with rubbing and friction between surfaces, with pushing things out of the way; resistance to motion of air and water. Forces measured in newtons, measurements of stretch or compression as force is changed

Trip/Visitor

Misconceptions	the heavier the object the faster it falls, because it has more gravity acting on it • forces always act in pairs which are equal and opposite • smooth surfaces have no friction • objects always travel better on smooth surfaces • a moving object has a force which is pushing it forwards and it stops when the pushing force wears out • a non-moving object has no forces acting on it

Subject	Concept
Living things and their habitats	Biology

Enquiry skills
Identifying/ classifying

Sequence of Learning

- What are mammals, amphibians, insects and birds? Characteristics retrieval
- What is the life cycle of a mammal? What is the life cycle of a bird? How are they different?
- What is the life cycle of a insect? What is the life cycle of amphibian? How are they different?
- How do plants reproduce?
- How to animals reproduce?
- Double page spread

Current Vocabulary	New Vocabulary
Characteristics	Reproduction
Mammal	Sexual reproduction
Fish	Asexual production
Bird	Pollination
Amphibian	Seed dispersal
Reptile	Seed formation
Invertebrate	
Vertebrate	

Prior Learning	New Learning	Future Learning
Notice that animals, including humans, have offspring which grow into adults. Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal	Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. Describe the life process of reproduction in some plants and animals	Pupils in Key Stage 3 will be taught about: Reproduction in humans (as an example of a mammal), including the structure and function of the male and female reproductive systems, menstrual cycle (without details of hormones), gametes, fertilisation, gestation and birth, to include the effect of maternal lifestyle on the foetus through the placenta. Reproduction in plants, including flower structure, wind and insect pollination, fertilisation, seed and fruit formation and dispersal, including quantitative investigation of some dispersal mechanisms

Trip/Visitor

Visit Victoria Park and see the different animals

Misconceptions	all plants start out as seeds • all plants have flowers • plants that grow from bulbs do not have seeds • only birds lay eggs.

Subject	Concept
Year 5 Properties and changes of materials	Chemistry

Enquiry skills

Testing Measuring

Sequence of Learning

- What are some properties of materials? Retrieve
- What particular uses are there for different materials?
- What is dissolving? What are solutions?
- How can mixtures be separated?
- What are reversible changes?
- Are some changes irreversible?

Equipment

Beakers, stirrers, sieves, filter paper, vinegar bicarbonate of soda

Trip/Visitor

STEM ambassador come in

Current Vocabulary	New Vocabulary
<u>Properties</u>	<u>Properties</u>
Transparent	Hardness
Opaque	Solubility
Waterproof	Transparency
Water repellent	Electrical conductivity
Not waterproof	Thermal conductivity
Absorbent	Magnetism
Non-absorbent	<u>Solids, liquids and gases</u>
Solids, liquids and gases	Dissolve
Solid	Solution
Liquid	Substance
Gas	Separate
Temperature	Filter
Heating	Sieve
Cooling	Evaporate
Freezing	Reversible change
Melting	Irreversible change
Particles	Burning
Water vapour	Chemical reaction
Evaporation	

Prior Learning	New Learning	Future Learning
Describe the simple physical properties of a variety of everyday materials. Compare and group together a variety of everyday materials on the basis of their simple physical properties. Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. Compare and group materials together, according to whether they are solids, liquids or gases. Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C). Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.	Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. Know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution. Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. Demonstrate that dissolving, mixing and changes of state are reversible changes. Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.	Pupils in Key Stage 3 will be taught about: Chemical reactions as the rearrangement of atoms. Representing chemical reactions using formulae and using equations. Combustion, thermal decomposition, oxidation and displacement reactions. Defining acids and alkalis in terms of neutralisation reactions. The pH scale for measuring acidity/alkalinity; and indicators.

Misconceptions

Thermal insulators keep cold in or out · Thermal insulators warm things up · Solids dissolved in liquids have vanished and so you cannot get them back · Lit candles only melt, which is a reversible change.