KS2 Science Strands

Year 3 and 4

Animals including humans
Find out about food groups and healthy balanced diets.
Study the human digestive system and how food is transported around the body.
Investigate skeletons and look closely at bones, joints and muscles and compare with animal skeletons.
Discover effects of exercise.

Rocks and Soil
What is under our feet?
Children are always fascinated by rocks and they describe rocks and compare their properties after tackling exciting activities.
Children hear how fossils are formed in sedimentary rocks and find out about Mary Anning's contribution to geology.
Discover how soil is formed from rocks and investigate the permeability of different soils.

Attracting & Stretching
The mysteries of magnetic forces and springs are revealed.
Find out which materials attract and repel and which are non-magnetic and carry out an investigation using magnets.
Spring into Science comparing elastic bands and springs.

Eating
Find out about food groups and how a healthy balanced diet includes different amounts of food from all the groups.
Look at human digestive system and the diets of herbivores, carnivores and omnivores.
Learn about teeth and investigate tooth decay using eggshells.

Growth of Plants
The function of the leaves, roots, stem and flowers of a plant in promoting healthy growth.
Children carry our several hands on investigations; create an advert to entice bees to their flower and produce a poster about the growth of plants.

Material Properties
Children compare the properties of everyday materials and relate them to everyday uses of the materials.
Investigate plastic, safe floor surfaces for babies and their own questions about paper.
Children research one material in detail to create a book.

Sun and Shadows
Discover fascinating facts about the Sun.
Explore the earth's movement to give seasons and day and night.
Investigate shadows and sundials.
Discuss safety in the Sun and solar energy.
Children also find out about transparent, opaque and translucent materials.

Circuits and Conductors

Reinforce children's understanding of simple circuits and use symbols to draw them.
Discover which materials are the best electrical conductors and use this information to make switches.
Children wire plugs and find what happens to a bulb's brightness when circuits are changed.

Friction and Resistance

After a brief revision of forces already met, children investigate friction, air resistance and water resistance.
There are lots of hands on activities and investigations using sports shoes, mini parachutes and balsa boats to hone their scientific enquiry skills.

Hot and Cold

Children discover that some materials are better thermal insulators than others.
Several investigations are carried out to discover which materials are best suited for keeping things warm or cool.
Children's findings help them design a new product.

Life in Habitats

Reinforce children's understanding of living things and focus on where they live.
Find out how they are adapted to their habitat and conduct an investigation into the most suitable habitat for a mini-beast.
Study food chains and the nutritional needs of organisms.

On the Move

Children have fun investigating their own skeletons and muscles. Look closely at bones, joints and muscles and compare human skeletons with other creatures.
They use their muscles and bones to discover the effects of exercise, then take and compare body measurements.

Separating Solids and Liquids

Children reinforce their understanding of solids and liquids and states of matter.
They find out how solids and liquids can be separated when they become mixed and explore reversible changes.
They create their own sorting machines and learn how to filter a solution.

Year 5 and 6

Circulation

Explore the structure of the heart and lungs.
The double circulation through the lungs and the rest of the body is explained and children learn more about blood.
How does exercise affect pulse rate?
Why is exercise good for us and what can harm the heart and lungs?

Flowering Plants

Children revise the parts of plants and their functions, the conditions affecting plant growth and plants as living things.
Investigations into seed dispersal and germination are carried out and children develop an understanding that plants are a vital part of human life.

Gases
Gases are one of the three states of matter, each of which has its own properties.
Children develop an understanding that gases are matter, have weight and are all around us.
They investigate the uses of gases in everyday life and some properties of common gases.

Sound
Water exists as solid, liquid and gas in everyday conditions.
Children investigate the properties of these different states of matter and how they change from one to the other.
They apply this to the water cycle and consider the importance of water to daily life.

Space
Children find fascinating facts about the Sun, Moon and Earth and develop an understanding of day and night, the four seasons and the Moon's phases.
The Sun and the planets making up our Solar System are investigated, along with the other stars in their constellations.

Water
Water exists as solid, liquid and gas in everyday conditions.
Children investigate the properties of these different states of matter and how they change from one to the other.
They apply this to the water cycle and consider the importance of water to daily life.

Environment
Children look at requirements for plant germination and growth before finding out more about soils.
Then consider how different plants suit different habitats and investigate dandelion growth in various habitats.
Finally design and make an electrical device for a plant nursery.

Light
Identify sources of light and revise facts that light travels in straight lines and opaque objects form shadows.
Understand that to see, light needs to enter the eye.
Investigate light reflection and refraction, white light made of many colours and the speed of light.

Balanced Forces
Look again at the different forces studied earlier – gravity, air resistance, friction and upthrust of liquids.
Investigate what happens when an elastic band stretches under force.
Develop an understanding of balanced and unbalanced forces and their effects.

Chains and Webs
Revise the conditions needed for plant growth and discuss plants as living things, concentrating on plants producing food by photosynthesis.
Look at classification using keys.
Investigate the interdependence of plants and animals using food chains and webs.

Drugs and Bugs
Look at microbes in detail and gain an understanding of their size and variety.
Discover the beneficial and harmful effects of different microbes and carry out several investigations on yeast, compost and food decay.
Look at the role of microbes and drugs in diseases.

Further Circuits
Revision of simple circuits and then lots of hands on experience with symbols, diagrams and incomplete circuits.
Children investigate the effect of the length of wire in a circuit, compare series and parallel circuits then face some Circuit Challenges!

Light & Sight
Identify sources of light and revise facts that light travels in straight lines and opaque objects form shadows.
Understand that to see, light needs to enter the eye.
Investigate light reflection, white light made of many colours and the speed of light.

Reversible and Irreversible Changes
Children revise their knowledge of reversible changes using gritty bread and begin to explore some irreversible changes by making their own plastic, investigating nails rusting and finding out what happens to materials when they are heated, cooled and/or burnt.

Separating Materials
Separate solids using sieves and magnets.
Children then identify solutions and mixtures before removing materials by filtering and evaporation. Through investigations, children develop an understanding of factors that affect the dissolving of materials to create solutions.

Human Reproduction and Relationships
Discuss why living things need to reproduce and look in detail at human life cycle, comparing it to other animals.
Study changes at puberty.
Research rites of passage in different cultures.
Look at STDs (particularly HIV/Aids).

Astronomy
Have fun investigating some aspects of astronomy, including the sun, moon and stars.
Make a simple telescope and a planisphere.
Find out about sunspots.