Week	Science Topic	Learning objective	Scientific enquiry	Scientific Language	Activities	Looking for evidence of learning - Children can…
1	Feeding relationships and animal adaptations (Biology)	Group organisms according to observable features. Use a simple dichotomous key to identify plants or animals.	Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.	feature, group, body, size, leg, diet, fish, fly, animal, egg, feather, fur, similar, different, key	Year 4, Grouping Living Things 2, Lots of living things Year 4, Grouping Living Things 2, Sorting animals	Comment on the physical features of an organism - its fur/feathers, number of legs, wings, etc. Explain why they have grouped selected organisms together based on a common characteristic. Follow the parts of a simple key to identify a common animal by using a key from beginning to end.
2		Compare animals in two contrasting habitats. Describe ways in which animals are suited to the environments in which they are found. Predict the likely habitats of a variety animals from the adaptations that they show.	Identifying differences, similarities or changes related to simple scientific ideas - using straightforward scientific evidence to answer questions or to support their findings.	climate, diet, adaptation, fur, feather, body, size, camouflage, predict	Year 2, Habitats 1, Habitats Year 2, Habitats 1, Who lives here?	Make simple observations about why an animal is suited to a habitat - long fur, camouflage, etc. Compare two different animals in two habitats - explain why one animal may not survive in the other's habitat, e.g. due to diet or size. Predict an unfamiliar animal's habitat based on observations - "It might live in the cold because it has long fur."

3		Distinguish between the terms producer and consumer. Understand that plants make their own food, but animals depend on plants and/or other animals as food sources.	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.	producer, plant, food, sunlight, animal, diet, survive, consumer, food source	Year 2, Feeding and exercise 3, Animal diets Year 3, What Plants Need, Places for Plants, PCM 1 (Page 1)	Give examples, orally or written, of consumers and producers, using the terms correctly - "A lion is a consumer." Explain, in their own words, what the terms producer and consumer mean. Show an understanding of animals' need to eat and plants' ability to make their own food.
4		Distinguish between the terms predator and prey. Consider the inter-relationship between predators and prey. Recognise the terms herbivore, carnivore and omnivore.	Asking relevant questions and using different types of scientific enquiries to answer them.	predator, meat, animal, stronger, faster, prey, smaller, slower, diet, food chain	Year 4, Human Nutrition, Animals eating Year 4, Dangers to Living things, 2, Food chain definitions	Explain what the terms predator and prey mean in their own words. Consider what might happen if there were no predators, or a lack of prey animals. Give examples of animals that are carnivores, herbivores and omnivores.
5		Interpret and draw simple, linear food chains involving 3 or 4 organisms. Identify producers, consumers, herbivores, carnivores, predators and prey in a variety of simple food chains.	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.	food chain, predator, prey, consumer, producer, diet	Year 4, Dangers to living things 3, Example food chains Year 4, Dangers to living things 2, Food chains	Describe the process shown in a food chain - "This animal is a predator. Its prey is…" Create a food chain based on what they know - what a lion or a dog eats, what its prey eats, etc. Identify the predators and prey in a given food chain.
6	**Magnets, Forces and Friction (Physics)**	Understand that a force is needed to make objects move. Describe and compare how a range of objects move on different surfaces and slopes.	Setting up simple practical enquiries, comparative and fair tests.	force, push, pull, slide, resistance, smooth, rough, surface	Year 3, Magnets and Forces 1, Forces Video Year 3, Magnets and Forces 1, Push or pull?	Understand that objects with different weights and sizes need different levels of pushing and pulling to help them move. Explain that an object will remain still on a flat surface unless it has a person, animal or engine helping it. Think about how an object moves differently over rough or smooth surfaces, or on a slope.

7		Describe friction as a contact force that acts between surfaces to slow down movement. Describe some ways in which friction between solid surfaces can be increased and decreased.	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.	friction, contact force, solid surface, movement, slow, stop, push, pull, gravity	Year 5, Forces 2, Swing Year 5, Forces 1, Toy car movement	Describe what the term friction means in their own words. Consider what might change the amount of friction on a surface - e.g. being wet or dry, or changing the angle of the object. Consider what effect the amount of friction on a surface may have on how an object moves; i.e. whether it will be faster or slower.
8		Identify materials that are magnetic and materials that are non-magnetic and apply this to practical uses of magnets.	Identifying differences, similarities or changes related to simple scientific ideas - using straightforward scientific evidence to answer questions or to support their findings.	magnet, magnetic material, non-magnetic material, metal, iron, aluminium, plastic	Year 3, Magnets and Forces 4, Magnet Conclusions Year 3, Magnets and Forces 6, Uses of magnets	Predict which materials and objects are likely to be magnetic. Identify what magnetic materials have in common. Show an understanding of why being magnetic can be useful.
9		Describe magnets as having two poles, known as North and South. Understand that some forces need contact between two objects, but magnetic forces can act at a distance.	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.	pole, contact, distance, pull, push, force,	Year 3, Magnets and Forces 4, Magnet quiz Year 3, Magnets and Forces 5, Paperclip investigation	Identify the poles of a magnet. Explain that the red end of a magent shows the North pole. Show, practically where possible, that magnets do not need to be in contact to attract or repel.
10		Distinguish between the terms attract and repel. Predict whether two magnets will attract	Asking relevant questions and using different types of scientific	attract, repel, North pole, South pole, same, different	Year 3, Magnets and Forces 3, Magnets	Explain what attract and repel mean in their own words. Make predictions about which poles of a magnet will attract and repel based on what they already know. Draw conclusions about what happens to the same and opposite poles when they are near each other.

		or repel each other, depending on which poles are facing each other.	enquiries to answer them.			
End of term progress test	**Magnets and Forces**					

Week	Science Topic	Learning objective	Scientific enquiry	Scientific Language	Activities	Looking for evidence of learning - Children can…
1	Material changes (Chemistry)	Compare a range of materials with different properties.	Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.	appearance, property, shiny, dull, rough, smooth, soft, hard, waterproof, absorbent	Year 5, Materials 1, All about materials Year 5, Materials 2, Everyday materials	Identify basic properties of materials, such as hard, soft, shiny, dull. Group materials based on the properties they have identified. Identify similarities and differences within a group of materials, "e.g wood is smooth but dull, foil is smooth but shiny."
2		Describe how objects made from some materials can be altered by squashing, bending, twisting and squeezing.	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.	squashing, bending, twisting, squeezing, stretching, holds shape, grow, shrink, forces	Year 2, Changing shape 1, Bending, twisting, squashing, stretching! Year 2, Changing shape 5, Is it squashy?	Understand the terms squash, squeeze, bend and twist. Name some objects that can return to their shape after being squashed, squeezed, bent or twisted. Name some materials that these objects are made of and suggest why these materials are chosen for these objects.
3		Understand that some objects can be changed by physical forces, but cannot be easily changed back.	Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.	heating, cooled, moulded, physical forces, change, appearance, shape	Year 2, Changing shape 1, Changes to materials Year 2, Uses of materials 2, What would happen if…?	Name some objects that do not return to their shape after a physical force is applied. Name some materials that these objects are made of. Suggest why these materials are chosen for these objects.
4		Distinguish between the terms melting and freezing.	Identifying differences, similarities or changes related to simple scientific ideas -using straightforward scientific evidence to	melting, freezing, heating, cooling, melting point, temperature,	Year 4, Changes of state 6, Water cycle processes Year 4/P5, Changes of State 1, Changes of state	Define the terms melting and freezing in their own words. Identify the freezing point of water in Celsius. Explain what happens ice is left in an environment that is more than 0 degrees Celsius.

			answer questions or to support their findings.	Celsius, state, solid, liquid		
5		Distinguish between the terms evaporating and condensing.	Identifying differences, similarities or changes related to simple scientific ideas -using straightforward scientific evidence to answer questions or to support their findings.	evaporating, condensing, liquid, gas, vapour, heating, cooling, boiling point, temperature, Celsius, state	Year 4, Changes of state 5, Evaporation and condensation Year 4, Changes of state 6, Water all around	Understand that evaporating is the process of a liquid (water) becoming a gas. Understand that condensing is the process of a gas becoming a liquid (water). Explain that condensation often happens due to cooling, and evaporation due to heating, and show examples of this.
6	**Light (Physics)**	Understand that we need light in order to see things and that dark is the absence of light. Understand that light comes from a source and recall some sources of light.	Asking relevant questions and using different types of scientific enquiries to answer them.	light, dark, absence of light, light source, Sun, electricity	Year 3, Light and shadows 1, Concept sentences Year 3, Light and shadows 1, Sources of light	Understand that we use our eyes to see, and explain the difference between what they see in light and dark. Explain that dark is the absence of light, and that light comes from sources. Give examples of light sources - e.g. the Sun, candles, torches, lightbulbs.
7		Explain that although some objects can reflect light, they are not light sources.	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.	reflect, surface, light source, mirror, polished, shiny	Year 3, Light and shadows 1, Light sources and reflectors Year 3, Light and shadows 2, Light sources and reflectors	Explain that reflectors do not make their own light. Give some examples of reflectors, e.g mirrors, the Moon, stars, polished surfaces. Consider the likely light sources for these reflectors - the Moon reflects the Sun, and a mirror could reflect a lightbulb.
8		Understand that some materials block light and are described as being opaque. Distinguish between the terms transparent,	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.	opaque, light, block, shadow, translucent, some, through, transparent, clear, some, through	Year 3, Light and shadows 1, What can you see Year 3, Light and shadows 1, Lights at night	Explain what transparent, translucent and opaque mean. Give some common examples of materials or objects for each term- "Glass is transparent", "Wood is opaque" "Some plastic is translucent" Explain what happens when a light source is shined on an opaque object, and that this is called a shadow.

		translucent and opaque.				
9		Understand that when light from a source is blocked by an opaque object, a shadow can form that is the same shape as the object.	Setting up simple practical enquiries, comparative and fair tests.	opaque, shadow, light source, silhoutte	Year 3, Light and shadows 2, Making shadows Year 3, Light and shadows 2, Silhouettes	Understand that a shadow is always the same shape as the object blocking the light. Identify some common objects from their shadows. Use classroom objects, e.g. hands, to cast shadows.
10		Investigate patterns in the ways that the sizes of shadows change.	Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.	shadow, light source, opaque, pass through, around, bigger, smaller, closer, further, angle	Year 3, Light and shadows 3, Shadow puppets Year 3, Light and shadows 2, Playing with shadows	Understand that distance from a light source changes the size of a shadow. Understand that distance from a light source affects show sharp the shadow is. Predict the movement of a shadow from the movement of a light source.
End of term progress test	**Light**					

Week	Science Topic	Learning objective	Scientific enquiry	Scientific Language	Activities	Looking for evidence of learning- Children can…
1	The Human Body (Biology)	Identify and name the main types of teeth in humans: incisor, canine, premolar and molar.	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.	teeth, skull, incisor, canine, premolar, molar, carnivore, herbivore, omnivore	Year 3, Human nutrition 3, Teeth development Year 3, Human nutrition 3, Dental chart	Show an understanding that incisors, canines, premolars and molars are types of teeth found in animals and humans. Identify where in the mouth each type of tooth is found. Recognise that each type of tooth is a different size and shape.
2		Relate the shape of a tooth to its function, e.g. slicing, tearing, chewing or grinding food.	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.	incisor, canine, premolar, molar, slicing, tearing, crushing, grinding, swallowing, chewing, saliva	Year 3, Human nutrition 3, Teeth Year 3, Human nutrition 3, Types of teeth	Recall what each type of tooth is called. Match each type of tooth to its function. Make suggestions about why each type of tooth is suited to its function.
3		Recall that teeth are part of the digestive system and are used to physically break down food for swallowing.	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.	saliva, chewing, swallowing, mouth, tongue, teeth, oesophagus, stomach, small intestine, large intestine, digestive system	Year 4, Human nutrition 1, Human digestion Year 4, Human nutrition 2, Human organs	Understand that teeth play a role in the digestive process. Consider what happens if food is not chewed. Explain the role that the tongue and saliva have in chewing and swallowing.

4		Identify that humans need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat.	Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.	vitamins, protein, fat, sugar, calcium, diet, energy, nutrition	Year 4, Human nutrition 2, Your food's fascinating journey Year 3, Movement and Feeding, Movement and Feeding 1, A balanced plate	Recall the term consumer from what they learned about animals in a previous unit, and how this relates to humans. Show an understanding of the need to eat healthily, and what this looks like. Explain what happens if a human eats too much or too little.
5		Identify that humans have skeletons and muscles for support, protection and movement.	Asking relevant questions and using different types of scientific enquiries to answer them.	skeleton, bones, skull, brain, ribs, heart, lungs, muscle, support, protection, movement	Year 3, Movement and Feeding 4, Muscles and bones Year 3, Movement and Feeding 4, Common bones in the human body	Identify the skull, ribs and other bones in the human body. Explain the role of the skeleton. Explain the role of muscles in the body.
6	**Solids, liquids and gases (Chemistry)**	Identify materials as solids, liquids or gases and distinguish between them. Describe some common properties of solids, liquids and gases.	Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.	solid, liquid, gas, property	Year 4, Changes of State 1, Solid, liquid or gas? Year 4, Changes of State 1, Solids, liquids and gases	Name some examples of solids, liquids and gases. Describe the features of solids, liquids and gases.
7		Understand that solids consisting of very small particles can behave as liquids in some ways.	Setting up simple practical enquiries, comparative and fair tests.	particles, sand, sugar, flour, pour, flow, holds shape		Give examples of solids that can be poured and do not hold their shape, such as flour, sugar, sand. Think of reasons why- e.g that they are made up of lots of very small pieces. Understand that these are not liquids because they are made of lots of very small solids.

8		Understand that temperature is a measure of how hot or cold something is and that it is measured in degrees Celsius (°C) using a thermometer.	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.	temperature, Celsius, degree, symbol, hot, cold, thermometer, measure	Year 4, Changes of State 3, Measure it! Year 4, Changes of State 4, Temperature experiment	Name objects and environments that have different temperatures, such as that ice cream is a lower temperature than soup. Understand the terms Celsius and degrees. Name some practical uses of thermometers - e.g. checking our temperature when we're ill, or checking food is hot.
9		Understand that water exists in three states and that it changes from one to another at different temperatures.	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.	freezing, boiling, liquid, solid, gas, ice, steam, vapour	Year 4,Changes of State 6, The water cycle Year 4, Changes of State 3, Water flow charts	Match ice, water and steam to their states. Identify the freezing and boiling points of water in Celsius. Show what state water is in at a given temperature.
10		Understand that different substances change state at different temperatures.	Identifying differences, similarities or changes related to simple scientific ideas - using straightforward scientific evidence to answer questions or to support their findings.	solid, liquid, gas, state, temperature, melting point, freezing point	Year 4, Changes of State 2, Temperature Year 4, Changes of State 4, Materials at different temperatures	Understand the concept of 'room temperature' and that some objects can change state when this temperature is raised or lowered. Understand that the melting and boiling points of different materials are not necessarily the same as that of water. Identify some common substances, such as foods, that have different melting points.
End of term progress test						