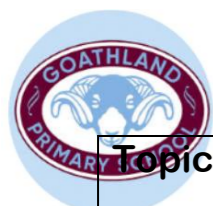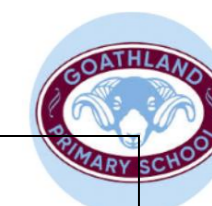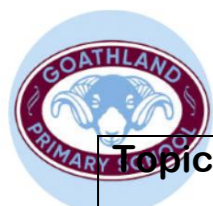| Topic	Reception	KS1	LKS2	UKS2
Properties and Changes of Materials		- Can label a picture or diagram of an object made from different materials - Can describe the properties of different materials - Can sort objects and materials using a range of properties - Can choose an appropriate method for testing an object for a particular property - Can use their test evidence to answer the questions about properties e.g. Which cloth is the most absorbent? - Can name an object, say what material it is made from, identify its properties and make a link between the properties and a particular use - Can label a picture or diagram of an object made from different materials - For a given object can identify what properties a suitable material needs to have - Whilst changing the shape of an object can describe the action used - Can use the words flexible and/or stretchy to describe materials that can be changed in shape and stiff and/or rigid for those that cannot - Can recognise that a material may come in different forms which have different properties - Can sort materials using a range of properties - Can explain using the key properties why a material is suitable or not suitable for a purpose - Can begin to choose an appropriate method for testing a material for a particular property - Can use their test evidence to select appropriate material for a purpose e.g. Which material is the best for a rain hat?	- Can create a concept map, including arrows linking the key vocabulary - Can name properties of solids, liquids and gases - Can give everyday examples of melting and freezing - Can give everyday examples of evaporation and condensation - Can describe the water cycle - Can give reasons to justify why something is a solid liquid or gas - Can give examples of things that melt/freeze and how their melting points vary - From their observations, can give the melting points of some materials - Using their data, can explain what affects how quickly a solid melts - Can measure temperatures using a thermometer - Can explain why there is condensation on the inside the hot water cup but on the outside of the icy water cup - From their data, can explain how to speed up or slow down evaporation - Can present their learning about the water cycle in a range of ways e.g. diagrams, explanation text, story of a water droplet	- Can use understanding of properties to explain everyday uses of materials. For example, how bricks, wood, glass and metals are used in buildings - Can explain what dissolving means, giving examples - Can name equipment used for filtering and sieving - Can use knowledge of liquids, gases and solids to suggest how materials can be recovered from solutions or mixtures by evaporation, filtering or sieving - Can describe some simple reversible and non-reversible changes to materials, giving examples - Can create a chart or table grouping/comparing everyday materials by different properties - Can use test evidence gathered about different properties to suggest an appropriate material for a particular purpose - Can group solids based on their observations when mixing them with water - Can give reasons for choice of equipment and methods to separate a given solution or mixture such as salt or sand in water - Can explain the results from their investigations involving dissolving and non-reversible change

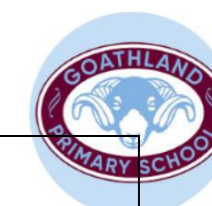| Topic	Reception	KS1	LKS2	UKS2
Forces			- Can give examples of forces in everyday life - Can give examples of objects moving differently on different surfaces - Can name a range of types of magnets and show how the poles attract and repel - Can draw diagrams using arrows to show the attraction and repulsion between the poles of magnets - Can use their results to describe how objects move on different surfaces - Can use their results to make predictions for further tests e.g. it will spin for longer on this surface than that, but not as long as it spun on that surface - Can use classification evidence to identify that some metals but not all are magnetic - Through their exploration they can show how like poles repel and unlike poles attract and name unmarked poles - Can use test data to rank magnets	- Can demonstrate the effect of gravity acting on an unsupported object - Can give examples of friction, water resistance and air resistance - Can give examples of when it is beneficial to have high or low friction, water resistance and air resistance - Can demonstrate how pulleys, levers and gears work - Can explain the results of their investigations in terms of the force, showing a good understanding that as the object tries to move through the water or air or across the surface, the particles in the water, air or on the surface slow it down - Can demonstrate clearly the effects of using levers, pulleys and gears
Electricity			- Can name the components in a circuit - Can make electric circuits - Can control a circuit using a switch - Can name some metals that are conductors - Can name materials that are insulators - Can communicate structures of circuits using drawings which show how the components are connected - Use classification evidence to identify that metals are good conductors and non-metals are insulators - Can incorporate a switch into a circuit to turn it on and off - Can connect a range of different switches identifying the parts that are insulators and conductors - Can add a circuit with a switch to a DT project and can demonstrate how it works - Can give reasons for choice of materials for making different parts of a switch - Can describe how their switch works	- Can make electric circuits and demonstrate how variation in the working of particular components, such as the brightness of bulbs can be changed by increasing or decreasing the number of cells or using cells of different voltages - Can draw circuit diagrams of a range of simple series circuits using recognised symbols - Can incorporate a switch into a circuit to turn it on and off - Can change cells and components in a circuit to achieve a specific effect - Can communicate structures of circuits using circuit diagrams with recognised symbols - Can devise ways to measure brightness of bulbs, speed of motors, volume of a buzzer during a fair test - Can predict results and answer questions by drawing on evidence gathered

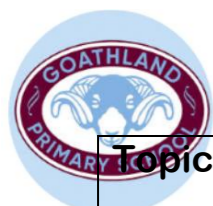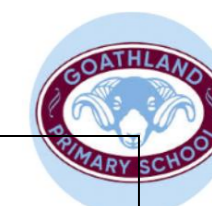| Topic	Reception	KS1	LKS2	UKS2
Light			- Can describe how we see objects in light and can describe dark as the absence of light - Can state that it is dangerous to view the sun directly and state precautions used to view the sun, for example in eclipses - Can define transparent, translucent and opaque - Can describe how shadows are formed by objects blocking light. - Can describe patterns in visibility of different objects in different lighting conditions and predict which will be more or less visible as conditions change - Can clearly explain, giving examples, that objects are not visible in complete darkness - Can describe and demonstrate how shadows are formed by blocking light - Can describe, demonstrate and make predictions about patterns in how shadows vary	- Can describe with diagrams or models as appropriate how light travels in straight lines either from sources or reflected from other objects into our eyes. - Can describe with diagrams or models as appropriate how light travels in straight lines past translucent or opaque objects to form a shadow of the same shape. - Can explain how evidence from enquiries shows that light travels in straight lines - Can predict and explain with diagrams or models as appropriate how the path of light rays can be directed by reflection to be seen, for example reflection in car rear view mirrors or in a periscope. - Can predict and explain with diagrams or models as appropriate how the shape of shadows can be varied.
Sound			- Can name sound sources and state that sounds are produced by the vibration of the object. - Can state that sounds travel through different mediums such as air, water, metal - Can give examples to demonstrate how the pitch of a sound are linked to the features of the object that produced it - Can give examples of how to change the volume of a sound e.g. increase the size of vibrations by hitting or blowing harder - Can give examples to demonstrate that sounds get fainter as the distance from the sound source increases - Can explain what happens when you strike a drum or pluck a string and use a diagram to show how sounds travel from an object to the ear - Can demonstrate how to increase or decrease pitch and volume using musical instruments or other objects - Can use data to identify patterns in pitch and volume - Can explain how loudness can be reduced by moving further from the sound source or by using a sound insulating medium	

Progression in Science – Goathland Primary School

| Topic	Reception	KS1	LKS2	UKS2
Animals including humans		• Can name a range of animals which includes animals from each of the vertebrate groups • Can describe the key features of these named animals • Can label key features on a picture/diagram • Can write descriptively about an animal • Can write a What am I? riddle about an animal • Can describe what a range of animals eat • Can play and lead 'Simon says'. • During PE lessons, can follow instructions involving parts of the body • Can label parts of the body on pictures and diagrams • Can explore objects using different senses • Can sort and group animals using similarities and differences • Can use simple charts etc. to identify unknown animals • Can create a drawing of an imaginary animal labelling its key features • Can use secondary resources to find out what animals eat, including talking to experts e.g. pet owners, zoo keepers etc. • Can use first-hand close observations to make detailed drawings • Can name body parts correctly when talking about measurements and comparisons • Can talk about their findings from investigations using appropriate vocabulary • Can describe how animals including humans have offspring which grow into adults, using the appropriate names for the stages • Can state the basic needs of animals, including humans, for survival. • Can state the importance for humans of exercise, eating the right amounts of different types of food and hygiene. • Can name foods in each section of the Eatwell guide • Can describe, including using diagrams, the life cycle of some animals, including humans, and their growth to adults e.g. by creating a life cycle book for a younger child • Can measure/observe how animals, including humans, grow. • Show what they know about looking after a baby/animal by creating a parenting/pet owners' guide • Explain how development and health might be affected by differing conditions and needs being met/not met.	• Can name the nutrients found in food • Can state that to be healthy we need to eat the right types of food to give us the correct amount of these nutrients • Can name some bones that make up their skeleton giving examples that support, help them move or provide protection • Can describe how muscles and joints help them to move • Can classify food into those that are high or low in particular nutrients • Can answer their questions about nutrients in food based on their gathered evidence • Can talk about the nutrient content of their daily plan • Use their data to look for patterns (or lack of) when answering their enquiry question • Can give similarities e.g. they all have joints to help the animal move, and differences between skeletons • Can sequence the main parts of the digestive system • Can draw the main parts of the digestive system onto a human outline • Can describe what happens in each part of the digestive system • Can point to the three different types of teeth in their mouth and talk about their shape and what they are used for • Can name producers, predators and prey within a habitat • Can construct food chains • Can use diagrams or a model to describe the journey of food through the body explaining what happens in each part. • Can record the teeth in their mouth (make a dental record) • Can explain the role of the different types of teeth • Can explain how the teeth in animal skulls show they are carnivores, herbivores or omnivores. • Can create food chains based on research	• Can explain the changes that takes place in boys and girls during puberty • Can explain how a baby changes physically as it grows and also what it is able to do • Can draw a diagram of the circulatory system and label the parts and annotate it to show what the parts do • Produces a piece of writing that demonstrates the key knowledge e.g. explanation text, job description of the heart • Use the role play model to explain the main parts of the circulatory system and their role • Can use subject knowledge about the heart whilst writing conclusions for investigations • Can explain both the positive and negative effects of diet, exercise, drugs and lifestyle on the body • Present information e.g. in a health leaflet describing impact of drugs and lifestyle on the body

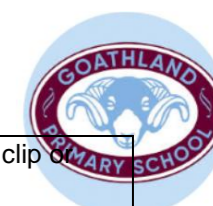| Topic	Reception	KS1	LKS2	UKS2
Living things and their habitats		• Can find a range of items outside that are living, dead and never lived • Can name a range of animals and plants that live in a habitat and micro-habitats that they have studied • Can talk about how the features of these animals and plants make them suitable to the habitat • Can talk about what the animals eat in a habitat and how the plants provide shelter for them • Can construct a food chain that starts with a plant and has the arrows pointing in the correct direction • Can sort into living, dead and never lived • Can give key features that mean the animal or plant is suited to its micro-habitat • Using a food chain can explain what animals eat • Can explain in simple terms why an animal or plant is suited to a habitat e.g. the caterpillar cannot live under the soil like a worm as it needs fresh leaves to eat; the seaweed we found on the beach cannot live in our pond because it is not salty	• Can name living things living in a range of habitats, giving the key features that helped them to identify them • Can give examples of how an environment may change both naturally and due to human impact • Can keep a careful record of living things found in different habitats throughout the year (diagrams, tally charts etc.) • Can use classification keys to identify unknown plants and animals • Can present their learning about changes to the environment in different ways e.g. campaign video, persuasive letter	• Can draw the life cycle of a range of animals identifying similarities and differences between the life cycles • Can explain the difference between sexual and asexual reproduction and give examples of how plants reproduce in both ways • Can present their understanding of the life cycle of a range of animals in different ways e.g. drama, pictorially, chronological reports, creating a game • Can identify patterns in life cycles • Can compare two or more animal life cycles studied • Can explain how a range of plants reproduce asexually • Can give examples of animals in the five vertebrate groups and some of the invertebrate groups • Can give the key characteristics of the five vertebrate groups and some invertebrate groups • Can compare the characteristics of animals in different groups • Can give examples of flowering and non-flowering plants • Can use classification materials to identify unknown plants and animals • Can create classification keys for plants and animals • Can give a number of characteristics that explain why an animal belongs to a particular group
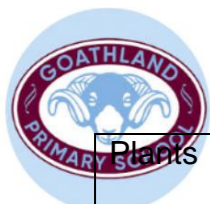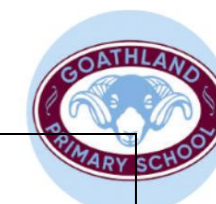
Plants				
		• Can name trees and other plants that they see regularly • Can describe some of the key features of these trees and plants e.g. the shape of the leaves, the colour of the flower/blossom • Can point out trees which lost their leaves and those that kept them the whole year • Can point to and name the parts of a plant, recognising that they are not always the same e.g. leaves and stems may not be green • Can sort and group parts of plants using similarities and differences • Can use simple charts etc. to identify plants • Can collect information on features that change during the year • Can use photographs to talk about how plants change over time • Can describe how plants that they have grown from seeds and bulbs have developed over time • Can identify plants that grew well in different conditions • Can spot similarities and difference between bulbs and seeds • Can nurture seeds and bulbs into mature plants identifying the different requirements of different plants	• Can explain the function of the parts of a flowering plant • Can describe the life cycle of flowering plants, including pollination, seed formation, seed dispersal, and germination • Can give different methods of pollination and seed dispersal, including examples • Can explain observations made during investigations • Can look at the features of seeds to decide on their method of dispersal • Can draw and label a diagram of their created flowering plant to show its parts, their role and the method of pollination and seed dispersal	

Topic	Reception	KS1	LKS2	UKS2
Rocks and Soils			• Can name some types of rock and give physical features of each • Can explain how a fossil is formed • Can explain that soils are made from rocks and also contain living/dead matter • Can classify rocks in a range of different ways using appropriate vocabulary • Can devise tests to explore the properties of rocks and use data to rank the rocks • Can link rocks changing over time with their properties e.g. soft rocks get worn away more easily • Can present in different ways their understanding of how fossils are formed e.g. in role play, comic strip, chronological report, stop-go animation etc. • Can identify plant/animal matter and rocks in samples of soil • Can devise a test to explore the water retention of soils	

Topic	Reception	KS1	LKS2	UKS2
Seasonal Changes Earth and Space		• Can name the four seasons and identify when in the year they occur. • Can describe weather in different seasons over a year. • Can describe days as being longer (in time) in the summer and shorter in the winter. • Can describe other features that change through the year • Use their evidence gathered to describe the general types of weather and changes in day length over the seasons. • Use their evidence to describe some other features of their surroundings, themselves, animals, plants that change over the seasons • Demonstrate their knowledge in different ways e.g. making a weather forecast video, writing seasonal poetry, creating seasonal artwork		• Can create a voice over for a video clip or animation • Can show using diagrams the movement of the Earth and Moon • Can explain the movement of the Earth and Moon • Can show using diagrams the rotation of the Earth and how this causes day and night • Can explain what causes day and night • Can use the model to explain how the Earth moves in relation to the Sun and the moon moves in relation to the Earth • Can demonstrate and explain verbally how day and night occur • Can explain evidence gathered about the position of shadows in term of the movement of the Earth. Can show this using a model • Can explain how a sundial works • Can explain verbally using a model why we have time zones • Can describe the arguments and evidence used by scientists in the past
Topic	**Reception**	**KS1**	**LKS2**	**UKS2**
Evolution and Inheritance				• Can explain the process of evolution • Can give examples of how plants and animals are suited to an environment • Can give examples of how an animal or plant has evolved over time e.g. penguin, peppered moth • Give examples of living things that lived millions of years ago and the fossil evidence we have to support this • Can give examples of fossil evidence that can be used to support the theory of evolution • Can identify characteristics that will make a plant or animal suited or not suited to a particular habitat • Can link the patterns seen in the model to the real examples • Can explain why the dominant colour of the peppered moth changed over a very short period of time