

SUMMER TERM YEAR 4

NC Requirements for History	Knowledge	Skills
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NC Requirements for Geography	Knowledge	Skills
<p>describe and understand key aspects of: physical geography, including: climate zones, biomes and vegetation belts, rivers, mountains, volcanoes and earthquakes, and the water cycle</p>	<p>Hopscotch Water Cycle Song</p> <p><u>Revision and Links</u> Y1 Summer Term – features on a map Y5 Spring Term - rivers</p> <p><u>New Learning</u> The Earth has been recycling water for over 4 billion years. The world’s water moves between lakes, rivers, oceans, the atmosphere and the land in an ongoing cycle called the water cycle. As it goes through this continuous system, it can be a liquid (water), solid (ice) or gas (vapour)</p> <p><u>Evaporation</u> Energy from the sun heats up the surface of the Earth, causing the temperature of the water in our rivers, lakes and oceans to rise. When this happens, some of the water “evaporates” into the air, turning into a gas called “vapour”. Plants and trees also lose water to the atmosphere through their leaves. This process is known as “transpiration”.</p> <p><u>Condensation</u> As water vapour rises up high into the sky, it cools and turns back into a liquid, forming clouds. This process is called “condensation”. Currents high up in the air move these clouds around the globe.</p> <p><u>Precipitation</u> When too much water has condensed, the water droplets in the clouds become too big and heavy for the air to hold them. And so they fall back down to Earth as rain, snow, hail or sleet, a process known as “precipitation”.</p> <p><u>Collection</u> The fallen precipitation is then “collected” in bodies of water – such as rivers, lakes and oceans – from where it will eventually evaporate back into the air, beginning the cycle all over again. <i>How</i> it is collected, depends on where it lands...</p> <ul style="list-style-type: none"> • Some will fall directly into lakes, rivers or the sea, from where it will evaporate and begin the cycle all over again. 	•

	<ul style="list-style-type: none">• If the water falls on vegetation, it may evaporate from leaves back into the air, or trickle down to the ground. Some of this water may then be taken up by the plant roots in the earth.• In cold climates, the precipitation may build up on land as snow, ice or glaciers. If temperatures rise, the ice will melt to liquid water and then soak into the ground, or flow into rivers or the ocean. <p>Water that reaches land directly may flow across the ground and collect in the oceans, rivers or lakes. This water is called “surface run-off”. Some of the precipitation will instead soak (or “infiltrate”) into the soil, from where it will slowly move through the ground until eventually reaching a river or the ocean.</p> <p><i>Mountains regions in the UK:</i></p> <p>Scotland</p> <p>Cairngorms, Northwest Highlands, Grampians, Cheviot Hills, Ochil Hills and Cuillins.</p> <p>Wales</p> <p>Black Mountains, Berwyns, Snowdonia, Brecon Beacons, Clwydian Hills and the Moelwinions.</p> <p>Northern Ireland</p> <p>Mourne Mountains, Sperrin Mountains, Glens of Antrim.</p> <p>England</p> <p>Pennines, Lake District, Dartmoor.</p> <p>Roughly two out three of the UK’s mountains are found in Scotland, and the top 10 highest mountains in England are all in the Lake District National Park.</p> <p>Ben Nevis is the highest mountain in the British Isles, the summit is 1,345 metres above sea level. Ben Nevis stands at the western end of the Grampian Mountains in the Lochaber area of the Scottish Highlands, close to the town of Fort William</p>	
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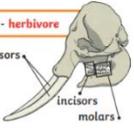
SUMMER TERM YEAR 4

NC Requirements for Science	Knowledge	Skills
<p>STATES OF MATTER compare and group materials together, according to whether they are solids, liquids or gases</p> <p>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)</p> <p>identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature</p> <p>ANIMALS, INCLUDING HUMANS describe the simple functions of the basic parts of the digestive system in humans</p> <p>identify the different types of teeth in humans and their simple functions</p> <p>construct and interpret a variety of food chains, identifying producers, predators and prey</p>	<p><u>Revision and Links</u> See previous year groups coverage on Animals including humans knowledge progression</p> <p><u>New Learning</u> There are three states of matter: solid, liquid and gas Particles in a solid are close together and cannot move. They only vibrate. Particles in a liquid are close together but can move around each other easily. Particles in a gas are spread out and can move around very quickly in all directions Things are made of particles (tiny building blocks) and that these are organized differently in different states Materials can change state when temperature changes There are bonds between the particles (building blocks) in a solid; as temperature increases, these bonds are somewhat overcome as the particles absorb energy and solids can change into liquids; with a further increase in temperature, the particles become even more energetic and the bonds are overcome entirely so the liquid changes into a gas The melting point of water is 0° C and that the boiling point of water is 100° C</p> <p>When water and other liquids reach a certain temperature, they change state into a solid or a gas. The temperatures that these changes happen at are called the boiling, melting or freezing point.</p> <p>Solid to Liquid If a solid is heated to its melting point, it melts and changes to a liquid. This is because the particles start to move faster and faster until they are able to move over and around each other. When solids turn into liquids, this is called melting and that the reverse process is called freezing</p> <p>Liquid to Solid When freezing occurs, the particles in the liquid begin to slow down as they get colder and colder. They can then only move gently on the spot, giving them a solid structure.</p> <p>Evaporation When liquids turn into gases, this is called evaporation and that the reverse process is called condensation Evaporation occurs when water turns into water vapour. This happens very quickly when the water is hot, like in a kettle, but it can also happen slowly, like a puddle evaporating in the warm air.</p> <p>Condensation Condensation occurs when water vapour is cooled down and turns into water. You can see this when droplets of water form on a window. The water vapour in the air cools when it touches the cold surface</p> <p>Key Vocabulary Solid: These are materials that keep their shape unless a force is applied to them (link to Y3 forces) They can be hard, soft or even squashy. Solids take up the same amount of space no matter what has happened to them. Liquid: Liquids take the shape of their container. They can change shape but do not change the amount of space that they take up. They can flow or be poured.</p>	

	<p>Gas: Gases can spread out to completely fill the container or room they are in. They don't have any fixed shape but they do have a mass</p> <p>Melt: When a solid changes to a liquid</p> <p>Freeze: When a liquid changes to a solid</p> <p>Evaporate: Turn a liquid into a gas</p> <p>Condense: Turn a gas into a liquid</p> <p>Water Vapour: This is water that takes the form of a gas. When water is boiled, it evaporates into water vapour</p> <p>ANIMALS, INCLUDING HUMANS</p> <p><u>The Digestive System</u></p> <p>Our body needs food to provide it with energy, vitamins, and minerals. However, in order use food, we must first break it down into substances that the various organs and cells in our body can use. This is the job of our digestive system.</p> <p>The digestive system acts in stages to digest our food. Each stage is important and prepares the food for the next stage. The entire length of our digestive system is around 20 to 30 feet!</p> <p>Here are the major stages of the digestive system:</p> <ol style="list-style-type: none"> 1. Chewing - Chewing is the first stage of the digestive system. When you chew your food it breaks up big pieces into little pieces that are easier to digest and swallow. Also, your saliva is more than just water. It has special enzymes in it that start to break down starchy food (potatoes, bread) while you chew. 2. Swallowing - Swallowing may seem like a simple process to us. It just sort of happens. But food doesn't just fall down our throats into our stomach. First, our tongue helps to push food into the back of our throat. Then there are special throat muscles that force the food down into a long tube that leads to our stomach, called the esophagus. The food doesn't just fall down the pipe, muscles push the food along until it gets to our stomach. At the same time all this is going on, a flap blocks off our windpipe making sure food doesn't go the wrong way. We call this "going down the wrong pipe" and it can make us choke. This flap is called the epiglottis and, fortunately for us, it works automatically. 3. Stomach - The next stage is the stomach. Food hangs out in the stomach for around four hours. While the food sits there, more enzymes go to work on it, breaking down things like proteins that our bodies can use. The stomach kills a lot of bad bacteria as well, so we don't get sick. 4. Small Intestine - The first part of the small intestine works with juices from the liver and pancreas to continue to break down our food. The second part is where the food gets absorbed from the intestine and into our body through the blood. 5. Large Intestine - The last stage is the large intestine. Any food that the body doesn't need or can't use is sent to the large intestine and later leaves the body as waste. <p>The Liver and Pancreas</p> <p>The liver and pancreas do a lot to help the digestive system along. Both work with the small intestine. The liver provides bile (stored in the gall bladder) that helps break up fat into smaller bits. The pancreas provides</p>	
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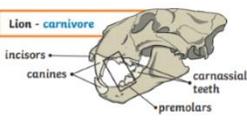
	<p>additional enzymes to help digest all sorts of food. The liver also processes the digested food from your blood before it gets sent to various places in your body to be used.</p> <p><u>Human Teeth</u></p> <p>Incisors Incisors are used for biting and cutting food. Think about biting into an apple. It is your incisors that bite into the apple and cut it up. They are at the front of your mouth and you have eight of them, four at the top and four at the bottom.</p> <p>Canines Canines are used for ripping and tearing food. Your canines are either side of your incisors and you have four of them. The word 'canine' means 'something connected to dogs'. As you can see, canine teeth are often pointy, a bit like the teeth of a dog or wolf.</p> <p>Molars and Premolars Premolars and molars are towards the back of your mouth. They are bigger and wider than incisors and canines and this is because of their functions. Premolars are used for holding and crushing food. At the very back of the mouth, are molars (bigger versions of premolars). They chew and grind up food, working with your tongue to prepare food for swallowing.</p> <p>Wisdom Teeth Wisdom teeth are an extra set of molars at the very back of the mouth. Despite their name, wisdom teeth are nothing to do with being clever! Scientists think wisdom teeth come from a very long time ago, when our ancestors ate a diet of coarser, rougher food. They needed an extra set of molars to chew up the food. Over time, humans' diets have changed and now wisdom teeth have no function. Wisdom teeth usually emerge in adults when they are around 18 years old or older.</p> <p>Inside a Tooth crown – The part of the tooth above the gum that you can see. root – The part of the tooth hidden under the gum. enamel – The shiny, white surface of a tooth. Enamel is the hardest substance in the human body. dentine – A hard substance which protects the inside of the tooth. pulp – The part of the tooth which contains blood vessels and nerves. The blood vessels keep the tooth alive. The nerves send messages to your brain, for example whether you are eating something very hot or very cold. cementum – The layer which covers and protects the root of the tooth.</p> <p>To help prevent tooth decay you should</p> <ul style="list-style-type: none">- Limit sugary food and drink- Brush teeth twice a day using a fluoride toothpaste- Visit the dentist regularly <p>The teeth of an animal are designed to eat different foods depending on the diet of the animal. Examples below of a herbivore, carnivore and omnivore skull</p>	
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Elephant - herbivore



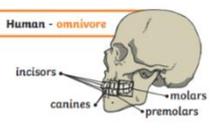
incisors
incisors
molars

Lion - carnivore



incisors
canines
carnassial teeth
premolars

Human - omnivore



incisors
canines
molars
premolars

Food Chains

An Example of a Food Chain
The arrows in a food chain show the flow of energy.



producer



primary consumer
consumer
prey



secondary consumer
consumer
predator/prey



tertiary consumer
consumer
predator

→ → → →

Digest – break down food so it can be used by the body
Oesophagus – a muscular tube which moves food from the mouth to the stomach
Stomach – an organ in the digestive system where food is broken down with stomach acid
Producer – A plant that produces its own food
Predator – An animal that hunts and eats other animals
Prey – An animal that gets hunted and eaten by another animal
Incisors – used for biting and cutting food
Canines – used for ripping and tearing food
Molars – used for holding and crushing food
Pre-molars – used for holding and crushing food
crow – The part of the tooth above the gum that you can see.
root – The part of the tooth hidden under the gum.
enamel – The shiny, white surface of a tooth. Enamel is the hardest substance in the human body.
dentine – A hard substance which protects the inside of the tooth.
pulp – The part of the tooth which contains blood vessels and nerves. The blood vessels keep the tooth alive. The nerves send messages to your brain, for example whether you are eating something very hot or very cold.
cementum – The layer which covers and protects the root of the tooth.