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| Year | Term | **Topic** | **In school** | **Helpful hints at home:** |
| 1 | Autumn | **How do the seasons impact on what we do?**Seasonal changes | The children will:* Observe changes across the four seasons;
* Observe and describe weather associated with the seasons and how day length varies.
 | Talk about the weather and measure rainfall in the garden.Look at photographs at taken at different times of the year |
| 1 | Autumn | **What are our toys made of?**Everyday Materials  | The children will:* Distinguish between an object and the materials from which it is made;
* Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock;
* 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.
 | Read well known books with features of different animals. Talk to your child about their favourite animals and the way they live.Talk about the different ways that animals move and what they eat.Visit the library and find books about the human body.Take a taste test challenge – see if your child can guess the food when blindfolded.Look at different materials in the house.Make a junk model of a house or a bridge at home – can your child test which materials are best? |
| Spring | **Why are humans not like chicks?** Animals including humans | The children will:* Identify and name a variety of common animals, including fish, amphibians, reptiles, birds and mammals;
* Identify and name a variety of common animals that are carnivores, herbivores and omnivores;
* Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets);
* Identify, name, draw and label the basic parts of the human body and say which part of the human body is associated with each sense.
 | Read well known books with features of different animals. Talk to your child about their favourite animals and the way they live.Talk about the different ways that animals move and what they eat.Visit the library and find books about the human body.Take a taste test challenge – see if your child can guess the food when blindfolded. |
| Summer | **Which birds and plants would Little Red Riding Hood find in the secret garden?**Growing plants | The children will:* look at and name a range of common, wild and green plants, including different types of trees;
* describe the basic structure of flowering plants, including trees.
* look at and name a variety of common **birds**
 | Take pictures of the garden at different times of the year.Look at flowers and trees in the garden.Create a bird feeding area in the garden and look at the birds.Visit the library and find books about words. |
|  |  | **How do the seasons impact on what we do?**Seasonal changes | The children will:* Observe changes across the four seasons;
* Observe and describe weather associated with the seasons and how day length varies.
 | Talk about the weather and measure rainfall in the garden.Look at photographs at taken at different times of the year |
| Year2 | Autumn | **How could you be the next Katarina Johnson-Thompson or Roberto Firmino?** Ourselves Movement | The children will:* Notice that animals, including humans, have offspring, which grow into adults;
* Find out about and describe the basic needs of animals, including humans for survival (water, food and air);
* Describe the importance for humans of exercise, eating the right amount of different types of food, and hygiene.
 | Read books about animals and lifecycles.Talk about food and exercise that you and your child do at home.Keep a ‘5-a-day’ and an exercise sticker chart at home.Talk about hand washing at home – when do they wash their hands? How do they wash their hands? |
| 2nd half Autumn term | **What is your school made of?**Everyday materials | The children will:* Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, rock, brick, paper and cardboard for particular uses;
* Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.
 | Talk to your child at home about different types of materials in the house.Look at different materials when you are walking to school. What is the community centre, church made of? What are the pavements made of?Which objects in the home can change shape by being squashed, bent, twisted and stretched. |
| Spring | **How can you be the next Master Chef?**Plants | The children will:* Observe and describe how seeds and bulbs grow into mature plants;
* Find out and describe how plants need water, light and suitable temperature to grow and stay healthy.
 | With your child, prepare a meal and invite someone special, such as their grandparents. Write an invitation and then lay the table and ensure that their guest is well cared for. |
|  | Summer term | **Why would a dinosaur not make a good pet?**Habitats | * Explore and compare differences between things that are living, dead and things that have never been alive;
* Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other;
* Identify and name a variety of plants and animals in their habitats, including micro-habitats;
* Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.
 | You could talk to your child about their own or other family pets – the things that they need to survive. Look on the internet to find out what dinosaurs would have needed and compare the differences.Make a junk model dinosaur land and photograph it or bring it into school. |
| 3 | Autumnterm | **Are you attractive enough?**Forces and magnets  | The children will:* compare how things move on different surfaces
* notice that some forces need contact between two objects, but magnetic forces can act at a distance
* observe how magnets attract or repel each other and attract some materials and not others
* compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials
* describe magnets as having two poles
* predict whether two magnets will attract or repel each other, depending on which poles are facing.
 | Encourage your child to find a magnet in the house and test different surfaces made of metal to see which are magnetic,Use two magnets and see if they attract or repel each otherFind out about magnets and forces on the internet – how are magnets made?  |
| 2nd half Autumn | **What do rocks tell us about the way the Earth was formed?**Rocks and soils | The children will:* compare and group together different kinds of rocks on the basis of their appearance and simple physical properties
* describe in simple terms how fossils are formed when things that have lived are trapped within rock
* recognise that soils are made from rocks and organic matter.
 | You could look at buildings in cities and towns when you are out. Look at the differences between the stones. Can you find out what kind of stones they are and where they come from? Go to the library and find some books about rocks and soils to read. Find out which rocks have grains or crystals, and whether they have fossils in them.Make a rock sculpture and take a photo to bring into school to show everybody. |
| Spring | **How can Usain Bolt move so quickly?**Animals (including humans) | The children will:* identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat
* identify that humans and some other animals have skeletons and muscles for support, protection and movement.
 | The children could find out how the food is transported by the blood to the various muscles in the body. Children could time themselves running and then create graphs to make comparisons with Usain Bolt’s time.Find out information about Usain Bolt and what he has to do in order to be the fastest runner in the world.Sketch what the skeleton looks like as it moves from crouch to upright position. Look at artists such as Giacometti and Thomas Heatherwick. |
| Summer | **How far can you throw your shadow?**Light | The children will:* recognise that they need light in order to see things and that dark is the absence of light
* notice that light is reflected from surfaces
* recognise that light from the Sun can be dangerous and that there are ways to protect their eyes
* recognise that shadows are formed when the light from a light source is blocked by a solid object
* find patterns in the way that the size of shadows change.
 | You could make shadows at home using a torch. Can your child change the size of the shadows? How did they make it bigger or smaller? What did they change?Make animals using your hands to cast shadows against the wall.Visit old buildings and churches and look at stained glass windows and how the light shines through the glass to create colours. |
|  | 2nd half Summer | **How do plants grow?**Plants | The children will:* identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers
* explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant
* investigate the way in which water is transported within plants
* explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.
 | You could make a fruit salad at home and whilst chopping up the fruit, look closely at the insides of the fruit and the seeds.Go for a walk in the woods and draw pictures of the different plants and trees Are there any plants where you can see the roots?Pick some flowers from the garden and look at different parts of the plant. |
| 4 | Autumn | **Which plants and animals thrive in your locality?** All living things | The children will:* recognise that living things can be grouped in a variety of ways
* explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment
* recognise that environments can change and that this can sometimes pose dangers to living things.
 | The children could take photographs of the different types of wild flowers you can find.Have a look in the local park or Penny woods to see which types of plants and animals you can see |
|  | **What happens to the food we eat?****Animals, including Humans** | The children will:* describe the simple functions of the basic parts of the digestive system in humans
* identify the different types of teeth in humans and their simple functions
* construct and interpret a variety of food chains, identifying producers, predators and prey.
 |  You could look at the importance of looking after our teeth.You could go to the library and look at the different types of teeth of animals and humans, e.g. lion, shark, monkey and human. How are they the same? How are they different? |
| Spring | **How would we survive without water?**States of matter | The children will:* 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.
 | You could make rice crispy cakes and talk about the different states it is in, solid or liquid and look at the effect that temperature has on the substances.You could read stories about melting e.g The Snowman |
| 2nd half  | **How could we cope without electricity for one day?**Electricity | The children will:* identify common appliances that run on electricity
* construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers
* identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery
* recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit
* recognise some common conductors and insulators, and associate metals with being good conductors.
 | You could arrange for the children to spend the whole day without electricity, what can they play? How would their meals get prepared and cooked? |
| Summer | **Why is the sound that one direction makes enjoyed by so many?**Sound | The children will:* identify how sounds are made, associating some of them with something vibrating
* recognise that vibrations from sounds travel through a medium to the ear
* find patterns between the pitch of a sound and features of the object that produced it
* find patterns between the volume of a sound and the strength of the vibrations that produced it
* recognise that sounds get fainter as the distance from the sound source increases.
 | You could listen to a range of different types of music e.g rock, classical, opera and talk about their likes and dislikesThe children could make musical instruments out of boxes and elastic bands, bottles and water and talk about what has changed, why are the notes different? |
| 5 | Autumn | **Can you feel the force?**Forces | The children will:* 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.
 | You could make boats in different shapes and test them in water to explore water resistance.You could look on BBC science clips for games linked to forcesYour child could make some parachutes using different materials. Which design was the most effective? The children could bring in photos of their experiments at home. |
| **How different will you be when you are as old as your grand-parents?** Animals including Humans | The children will be* describing the changes as humans develop to old age.
 | You could talk to your child about all of the things that they can do now that they could not do when they were babies, toddlers etcLook at photos of your child as a baby, toddler, infant – how have they changed? |
| Spring | **Could you be the next CSI investigator?**Properties and changes of materials | The children will:* compare and group together everyday materials on the basis of their properties, including how hard, soluble, transparent they are. How well they can conduct heat and electricity, 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
 | You could make a jelly with your child and talk about what is happening to the jelly cubes. When it has set can the jelly be changed back into water and jelly cubes?You could make cakes and ask the same questions.The children could make ice sculptures using moulds full of water in the freezer. Are these changes permanent or can the ice be changed back into it’s water state?There are lots of games on the BBC Bitesize website. |
| Summer | **Do all animals and plants start life as an egg?**Living things & their habitats | The children will:* 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.
 | You could look at different animals in your local environment and encourage your child to talk to you about the life cyclesYou could go to the library and look at different books about the life cycles of different animals e.g. butterfly, frog, human and bird. |
|  | 2nd half Summer term | **Will we ever send another human to the moon?**Earth & Space | The children will:* 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.
 | You could visit the Planetarium at the World Museum and look at all of the different planets and the equipment that have helped scientists to study them. The children could go to the library and borrow books on the planetsThe children could make a book or a fat file about one of the different planets and bring it into show their class. |
| 6 | Autumn | **What would a journey through your body look like?**Animals including Humans | The children will:* identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood
* recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function

describe the ways in which nutrients and water are transported within animals, including humans.  | You could talk to your child about the importance of a healthy lifestyle.The children could research a famous sportsperson to find out what they do in order to have their body perform at a competitive level?You and your child could exercise together – what happens to your bodies? |
|  | **Could you be the next Nintendo apprentice?**Electricity | The children will:* associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit
* compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches
* use recognised symbols when representing a simple circuit in a diagram.
 | Your child could look around your home and local area for examples of technology that requires circuits e.g burglar alarm, traffic lights, smoke alarm, plug, computer etcCan your child tell you how a circuit works? |
| Spring | **Have we always looked like this?**Evolution and Inheritance | The children will:* recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago
* recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents
* identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.
 | You could look at photographs of yourself and your child as you were younger. Talk about any similarities or differences you can see. Your child could research how some animals have adapted to survive in extreme conditions e.g camels. |
| Summer | **How can you light up your life?**Light | The children will:* recognise that light appears to travel in straight lines
* use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye
* explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes
* use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.
 | Your child could spend 10 minutes in a blacked out room. Could they see anything? Did their eyes adapt to the darkness?They could make shadow puppets and use torches to create a shadow puppet show.The children could look at the work of artists like Cezanne and see how he used light and shadow in his work. |
|  | Summer – 2nd half term | **Could humans be crossed with animals?**Living things & their Habitats | The children will:* describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals
* give reasons for classifying plants and animals based on specific characteristics.
 | Your child could use books from the library and information on the internet to research some animals and plants that live/grow nearby and how they have adapted and developed to help them to survive (e.g.chameleons) |