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| Year | Term | **Topic** | **In school** | **Helpful hints at home:** |
|  5 | Autumn | **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. |
| **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. |
| 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 its water state?There are lots of games on the BBC Bitesize website. |
| Summer | **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. |
|  | 2nd half Summer term | **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? |
| 6 | Autumn | **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) |
|  | **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? |
| 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 | **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? |
|  | Summer – 2nd half term | **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. |