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| Subject: Science Year: PHASE 2 – Humans and Evolution Unit 1 of 6  NC/PoS:   * 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. |
| Prior Learning (what pupils already know and can do)  All animals produce offspring. All animals need food, water, air, shelter. Know exercise is important. There are different types of food: dairy, fruit and vegetables, carbohydrates, fats, and proteins. know important to eat a variety of food and have good hygiene |
| End Goals (what pupils MUST know and remember)   * Know the right food is important for a healthy body * Know animals, get their nutrients from what they eat * Know all animals, need the right amount of nutrients from the food they eat * Know carbohydrates and fats provide energy, proteins help with growth and repair, vitamins and minerals keep cells healthy, fibre helps food move through the gut and 70% of the body is water * Know the skeleton does three jobs: protecting the body parts, supporting the body, and letting the body move. * Know bones, have joints so the skeleton can bend. * Know muscles and joints allow movement * Know muscles are soft tissues that are joined to bones and always work in pairs. * Know the stages in a human’s life, include infancy, childhood, adolescent, adulthood, and old age. |
| Key Vocabulary: muscles, tendons, tissue, skeleton, protective, support, vertebrates, ribcage, sternum, pelvis, spine, endoskeleton, exoskeleton, serving, balanced diet, healthy, nutrients, carbohydrates, fibre, vitamins, minerals, fats, protein, bicep, tricep, heart, infancy, childhood, adolescent, adulthood, old age, cell decline. |
| Session 1: review prior learning  What do all animals need? Why is exercise important? Name different types of food.  Leonardo da Vinci: Vitruvian Man Greeting Card Pack - Book Summary & Video  | Official Publisher Page | Simon & SchusterIntroduce career scientist <https://pstt.org.uk/application/files/3516/4572/2477/Protein_Biochemist_-_Dr_Gulin_Guler-Gane_-_v2.pdf>  Show De Vinci’s Vitruvian Man – anatomical drawing of human body. He was fascinated by nature and spent time studying the human body. |
| Session 2: Recap: Name three foods that are dairy, carbohydrates, contain fats and protein  LO: to research different nutrients  Children research carbohydrates, proteins, fats, fibre, minerals and vitamins and examples of food that provide them.  Seven types of nutrients:   1. Water – essential for survival, makes up 60% of human body 2. Carbohydrates – gives animals energy and prevents loss of muscle mass 3. Protein – building blocks for cells and essential for forming muscles 4. Fats – boosts absorption of vitamins and protects the organs of the body 5. Vitamins – help the bones grow and support the immune system 6. Minerals – helps the body to work properly 7. Fibre – helps the digestive system stay healthy   NB. A piece of food will often provide a range of nutrients. Animals, including humans, cannot create their own food, so must consume plants and/or other animals to obtain energy and nutrients. A balanced diet is one that that contains the right nutrients in the right quantities, and should include carbohydrates, proteins, fats, minerals, and vitamins.  Nutrients, carbohydrates, protein, fats, vitamins  Vocabulary: nutrients, carbohydrates, fibre, vitamins, minerals, fats, protein |
| Session 3: Recap: the 7 nutrients and what they do for the body  Lo: to design a healthy meal that contains the right nutrients  Design a meal showing food groups  Vocabulary: balanced diet, healthy |
| Session 4: Recap: Match the food to the nutrients  LO: to research and compare fats and sugars on food packaging  Compare food by looking at 100g serving.  Vocabulary: serving, |
| Session 5: Recap: Parts of the body linked to senses  LO: to understand the function of a skeleton  <https://www.youtube.com/watch?v=WGd8_hZwnsA>  [www.youtube.com/watch?v=fIoBoGSPkws](http://www.youtube.com/watch?v=fIoBoGSPkws) – basic anatomy   1. to support the body 2. protect the organs 3. help the body to move   Name some of the major bones.  Also look at skeletons of a variety of animals and group them  N.B. An endoskeleton is an internal skeleton like in vertebrates. An exoskeleton is the external skeleton that supports and protects an animal'sbody like in ants, bees, crabs  Vocabulary: skeleton, protective, support, vertebrates, ribcage, sternum, pelvis, spine, endoskeleton, exoskeleton |
| Session 6: Recap: what are an exoskeleton and endoskeleton? What is their function? Name 3 bones  Lo: To understand how muscles work  <https://www.youtube.com/watch?v=3haTJCOkyxA> how bones and muscles work  <https://www.bbc.com/bitesize/articles/zpbxb82> - how do your muscles work  Muscle is a soft tissue that produces force and motion and maintains the position of parts of the body.  Muscles are joined to bones by tendons  Vocabulary: muscles, tendons, tissue |
| Session 7: Recap what an exoskeleton and endoskeleton is.  Children learn teeth are used to chew the food and break it up into bits and the tongue helps to chew the food and swallow it. There are four canines in the mouth which tear food and form the corners of the mouth. The premolars are designed to crush and grind food. The molars, have broader and flatter surfaces and grind food. The four front teeth in both the upper and lower jaws are called incisors and are used to cut food.  Lo: to research teeth and their function  Watch https://www.youtube.com/watch?v=th2ROcyH8Xw up to 1.52 for information on teeth and their function  Lo: To compare teeth of carnivores, herbivores, omnivores Carry on watching to up to 2.36 and <https://www.youtube.com/watch?v=YWwoQInSEeI>. Children research teeth of other animals and link to their diets. Nb. An animal’s teeth are designed to suit the diet that they eat  Vocabulary: molars, premolars, incisors, canines, herbivores, carnivores, omnivores, diet |
| Session 8: Recap the different types of teeth and what there functions are.  LO. Know the stages of a human life.  Children to have a series of pictures of the different ages in a human life cycle. Can they order them? What is the name for each stage? Introduce the key vocabulary, can they match them to their pictures?  Children to recognise that as they get older hearing and vision declines due to cell decline. Children to be made aware that humans can live in different countries as they can wear clothes and build homes suited to conditions however animals do not adapt as easily.  Key Vocabulary: infancy, childhood, adolescent, adulthood, old age, cell decline. |
| Link to career scientist:  <https://pstt.org.uk/application/files/3516/4572/2477/Protein_Biochemist_-_Dr_Gulin_Guler-Gane_-_v2.pdf>  Orthopaedic doctor <https://www.youtube.com/watch?v=6O4BM53cjSk> |
| Scientists who have helped develop understanding in this field: Leonardo da Vinci made first anatomical drawings. |