

YEAR 4 UNIT 4 - Teeth and Eating (Animals including Humans)

Enquiry Question: Why do we need different types of teeth?

Related units: Year 3 unit 2: - Why is a balanced diet important?

Year 5 unit 5: How do humans change?

Unit overview

National Curriculum Year 4: Animals including humans: Children will describe the simple functions of the basic parts of the digestive system in humans and different types of teeth before moving on to explore deadly predators and their prey in their exploration of food chains.. They will identify the different types of teeth in humans and their simple functions. Children will construct and interpret a variety of food chains, identifying producers, predators and prey. Children already know...

- the names of external parts of the body.
- about the importance of food for human survival.
- that children grow into adults and the changes that happen as a result.
- That the digestive system covers every part of our bodies, with bits of food going directly to the legs to make you run
- How to identify and name a variety of common animals that are carnivores, herbivores and omnivores; how to explore and compare the difference between things that are living, are dead and have never been alive
- How to find out and describe the basic needs of animals for survival

Scientific vocabulary

- omnivore
- herbivore
- carnivore
- nutrients
- stomach
- incisor
- molar
- canine
- mouth
- decay
- plaque
- small intestine
- large intestine
- anus
- energy
- enamel
- oesophagus
- digestion

Working Scientifically

- Comparing the teeth of carnivores and herbivores and suggesting reasons for differences
- Finding out what damages teeth
- Finding out how to look after teeth
- Draw and discuss their ideas about the digestive system
- Compare their ideas with models and images
- Using enquiry, practical experiments and hands-on research to answer questions
- Investigate how we eat, why we eat and what we eat
- Classify and identify different types of type and their functions

Assessment

1. Describe the process of digestion
2. Explain why living things need food to survive.
3. Explain why animals have different teeth making reference to their diet
4. Describe a basic food chain.

Cross-curricular links

Writing opportunities:

- English: instruction writing on how to clean your teeth properly.

Maths opportunities:

- Record results in a table.

Teacher knowledge

Humans are omnivores, meaning we eat both plants and animals, and our teeth have evolved to suit our diet. Our canines are smaller than a carnivore's and we have flat molars to help us chew our food before swallowing, as plant material needs grinding before we can digest it. Our first set of teeth is known as our milk teeth. There are 20 teeth in total at this point: eight incisors, four canines, four premolars and four molars. Foods that are high in calcium, such as milk and other dairy products, are important in the formation of teeth and bones, and keep them strong and healthy, which is why children, who are growing bigger bones and new teeth, need full fat (whole) milk and other dairy products as part of their diets. Between six and 12 years old, our milk teeth are gradually replaced with permanent teeth. There is a third set of molars called 'wisdom teeth' which appear in our late teens – although they may not come through at all. This means adults have 32 teeth. The jaw gets bigger as we grow older, so there is space for those teeth to appear. The human mouth contains 12 molars, eight premolars, four canines and eight incisors. The outer layer of teeth is called enamel. It is one of the hardest substances in the body. Beneath the enamel is a layer of softer dentine and inside the tooth is the pulp, which contains blood vessels and nerve endings. Bacteria in the mouth eat away at enamel and cause plaque. If plaque is not removed regularly, it can build up and harden to form tartar, which builds up on our teeth and is difficult to remove. Some foods can stain our teeth, such as tea and coffee.

Our digestive system is made up of organs that take in food, including our mouths and teeth. The mouth and teeth start off digestion as a mechanical process. We then digest it chemically to extract energy and nutrients, and expel the remaining waste. Food contains large, complex chemicals such as carbohydrates, proteins and fats. To be of use to the body, they must be broken down into smaller chemicals: Carbohydrates are broken down into sugar. Proteins are broken into amino acids. Fats are broken into fatty acids and glycerol. Digestion starts in the mouth. Teeth provide mechanical breakdown of the food, then saliva moistens food so that it slides down the oesophagus into the stomach. The stomach is a bag of muscle that breaks up food by churning it around. It also contains hydrochloric acid, which kills off bacteria in the food, and enzymes, which further break down carbohydrates and proteins, starting the chemical breakdown of the food. After a few hours in the stomach, food travels down the duodenum (small intestine), where it is broken down further and sends the nutrients around the body in the blood. The solid waste such as fibre that can't be digested continues along into the large intestine, where water is removed. Then this passes out of the body via the colon and the anus.

All living things need energy to survive. Plants are able to use the energy from the Sun to produce their own food. Animals are unable to make their own food so have to eat other living things to get their energy. Other animals have adapted to eating only other animals and get their energy from meat. These animals are known as carnivores. Animals that eat other animals are known as predators, with the animals that they eat known as prey, whether they are herbivores or carnivores. Some animals, including humans, have a diet comprising of both animals and plants. These animals are known as omnivores. Well-known omnivores that the children might be familiar with include pigs, hedgehogs and rats. The teeth of carnivores are long and pointed. They have particularly long canine teeth to grip and kill their prey quickly. The incisors at the front of the mouth are used to strip flesh from the bones. Meat is easier to digest than plants, so does not need to be chewed so much. Plant material, however, is tougher to break down. Therefore, herbivores' teeth are different from carnivores'. They have large, flat molars (back teeth) with ridges to help grind plants. Many do not have upper incisors, but instead a bony pad on their upper jaw. Herbivores can spend a long time chewing before the food is finally swallowed. They also have special bacteria in their guts to help break down plants.

Did you know?

- Trillions of bacteria have to disguise themselves as human cells in our digestive system. Otherwise our immune system will kill them off.
- Digestive biscuits are so-called since it was believed (wrongly) that they aided digestion.
- The first president of the United States of America, George Washington, wore false teeth made out of teeth from a cow, hippopotamus and walrus!
- Hundreds of kinds of dinosaurs were herbivores – that's 'veggies' to you and me.

Misconceptions: Children might think...

- that teeth grow continually (we will explain about loss of teeth and adult teeth)
- that the digestive system covers every part of our bodies, with bits of food going directly to the legs to make you run, for example (we will tell the children about the stomach).
- that a predator can't be prey, (address this by creating 2 food chains).
- that only herbivores are prey (address this by creating 2 food-chains).
- that humans aren't predators or are not part of food chains (address this with a food chain).

Resources

www.childrensuniversity.manchester.ac.uk/interactives/science/teethandeating/typesofteeth/ has information about types of teeth for children to research.

www.dentalhealth.ie/children/toothdevelopment/types.html has information about how to care for children's teeth.

www.learninggamesforkids.com/health_games_dental.html A range of games for children related to teeth and eating.