

Year 4 – Science – Teeth and Eating

Autumn 1 Knowledge Organiser



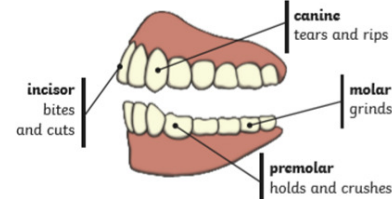
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This Science unit follows on from previous studies of animals including humans. This unit will deepen the children's understanding of how different animals eat and the journey of food in our bodies. They will learn about the different types of teeth and their functions, and the importance of keeping our teeth healthy. As well as this, children will be able to describe simple functions of the human digestive system. Building on their learning in Year 2, they will also learn about food chains and be able to construct a variety of food chains, identifying producers, predators and prey.

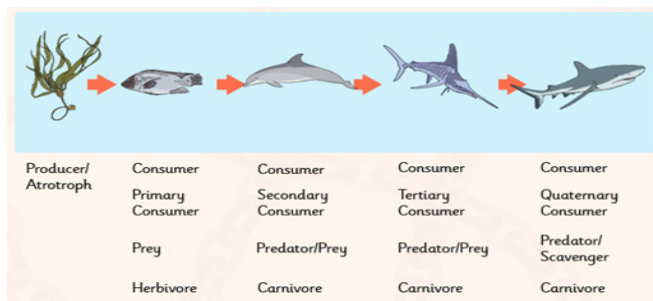
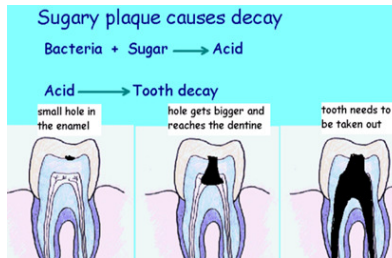
Key knowledge

- Animals have different types of teeth, each with a specific function.
- The teeth an animal has depends on the animal's diet.
- A carnivore has large sharp canines so it can easily rip and tear meat. A herbivore has lots of large incisors and molars to help cut and grind vegetation. An omnivore has a mixture of teeth due to the range of diet.
- If we do not look after our teeth, tooth decay may occur. We must limit sugary drinks/food and brush twice a day with fluoride toothpaste.
- The arrow on a food chain always means 'is eaten by'.
- In a food chain, energy passes from one animal to another as they eat plants or one another.

Human Teeth and Their Functions

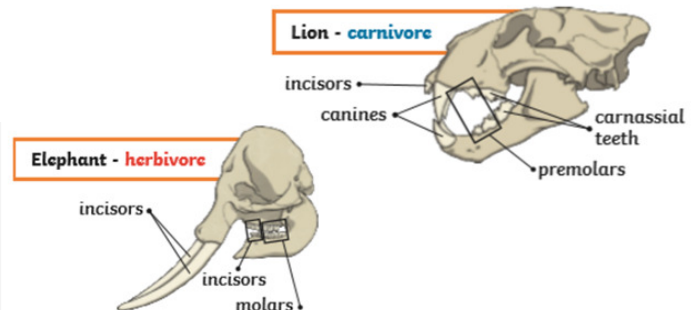
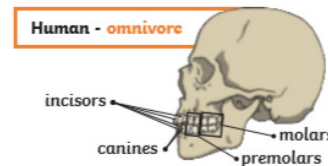


Some people have wisdom teeth but they have no function now.



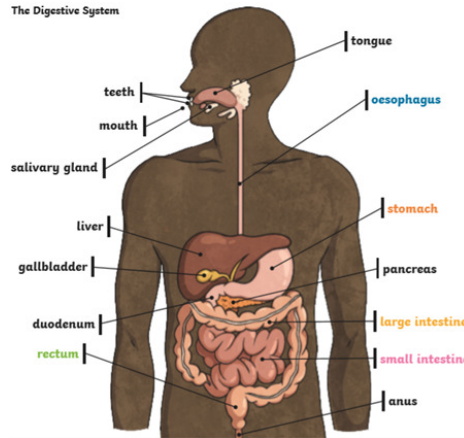
Key Vocabulary

- Incisor**—Tooth that bites and cuts food. Front of mouth.
- Canine**—Tooth that tears and rips food. Front side of mouth.
- Premolar**—Tooth that holds and crushes food. Side of mouth.
- Molar**—Tooth that grinds food. Back of mouth.
- Producer**—At the beginning of the food chain and is a plant that produces its own food (photosynthesis).
- Consumer**—A living thing that eats other plants and animals.
- Primary consumer**—Herbivore that eats the producer.
- Prey**—An animal that is hunted or eaten by other animals.
- Predator**—An animal that hunts and eats other animals.
- Carnivore**—An animal that only eats other animals.
- Herbivore**—An animal that only eats plants.
- Omnivore**—An animal that eats both plants and animals.
- Scavenger**—An animal that eats dead animals.



- **Different parts of the digestive system have different functions.**
- **Salivary glands:** first part of digestion. Releases saliva which helps you chew, taste and swallow food.
- **Mouth:** entry point for food, teeth (cut food into smaller pieces) and tongue (mix food and saliva).
- **Oesophagus:** Muscles contract and relax to move food to the stomach.
- **Stomach:** glands produce acid and enzymes which breaks down food.
- **Liver:** Produces bile to help absorb fat.
- **Gallbladder:** Releases bile in to the duodenum.
- **Pancreas:** Produces enzymes to break down fats/proteins/ carbohydrates.
- **Duodenum:** First part of small intestine, food broken down by bile.
- **Small intestine:** Absorb nutrients from the food.
- **Large intestine:** Connects small intestine to the rectum. Forms stool from waste food.
- **Rectum:** Stores stool passed from large intestine.
- **Anus:** Releases stool. End of digestive process.

The Digestive System



Key questions

- What are the teeth humans have and what are their functions?
- What type of teeth do carnivores/herbivores have and why?
- What is tooth decay? How can you prevent decay?
- Can you explain an example of a food chain?
- What is a producer? Where does it come in a food chain?
- What is a primary consumer? Where does it come in a food chain?
- What is a secondary consumer/tertiary consumer? Where do they come in the food chain?
- What is a predator? Can you give an example of a prey within a food chain?
- What is an herbivore? Where does it come in the food chain?
- What is a scavenger? Where might it come in the food chain?
- What are the different parts of the digestive system?
- What is the function of the salivary glands?
- What is the function of the teeth?
- What is the function of the stomach?
- What is the function of the liver?
- What is the function of the gallbladder?
- What is the function of the pancreas?
- What is the function of the duodenum?

Year 4 - Science- Power it up!

Autumn 2 Knowledge Organiser

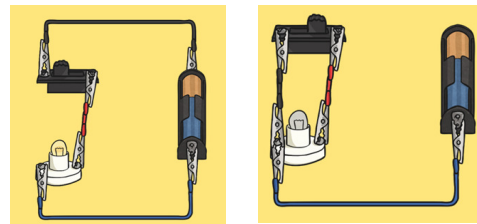
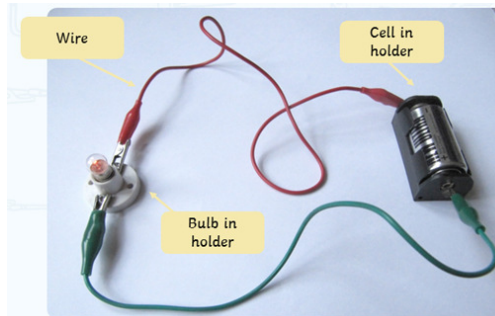


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This Science unit will introduce the children to the topic of electricity. This unit will teach the children to identify common appliances that run on electricity and to understand the difference between main and battery electricity. They will learn how to construct a simple series electrical circuit and name its basic parts. The children will also learn the importance of a complete circuit and understand whether a lamp will light up in a series circuit and how a switch opens and closes a circuit. Finally children will recognise common conductors and insulators, testing different materials.

Key knowledge

- Many appliances rely on electricity to work, some plugged in to a socket (mains) and others need a battery.
- Mains electricity come from power stations and travel through wires to transformers and pylons.
- Batteries store chemicals which produce an electrical current, which eventually will run out.
- All circuits need a battery/cell and wires to work. You may also find lightbulbs, buzzers and switches in circuits.
- Complete circuits must have a power supply, the wires must connect to the positive and negative ends of the power supply and electricity must be able to flow (no gaps).
- A switch breaks a complete circuit to stop the flow of electricity.
- When a switch is on (closed), the circuit is complete as the electricity is able to flow.
- Some materials are able to carry an electric current, whereas others are not.
- Electrical conductors have free electrons which can move in one direction. If a complete circuit has an electrical conductor in it, the device will work. Most metals are good examples.
- Electrical insulators are materials with no free electrons and so the device in the circuit will not work. Wood, plastic and glass are examples.



Key Vocabulary

Circuit: A pathway that electricity can flow around.

Series circuit: A circuit with only one route for the electricity to flow.

Battery/cell: A device that stores energy. A cell is a single unit, a battery is a collection of cells.

Wires: Thin metal covered in plastic that electricity travels through.

Lightbulb: A light source that will light up if in a complete circuit.

Buzzer: If in a complete circuit, the buzzer will make a noise.

Switch: Turns the electricity on and off in a circuit.

Conductors: Materials with free electrons and so can create an electric current.

Insulators: Materials where electrons cannot move freely and so no electric current is created.

Key Questions

What is mains electricity? What is battery electricity?

What is the difference between mains electricity and battery electricity?

What is a circuit?

When does electricity flow around a circuit?

What is a battery/cell? What does it do within a circuit?

What are wires? What do they do in a circuit?

What is a light bulb? What does it do in a circuit?

What is a switch? What does it do in a circuit?

Can you explain when a circuit is complete/incomplete?

What are the different types of switches?

What happens when a switch is off or a switch is open?

What happens when a switch is on or a switch is closed?

Why is a circuit with a switch not the same as an incomplete circuit?

Science—Enquiry Approaches

Knowledge Organiser



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ambitious for the future

Scientific enquiry approaches are part of our science curriculum and are the different ways that we can carry out scientific investigations.

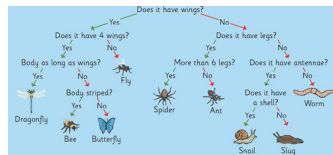
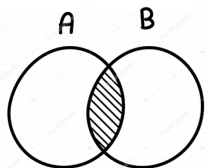
Observing over time

- Use different senses.
- Observe changes over different periods of time.



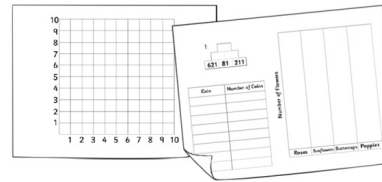
Identifying and classifying

- Naming and grouping.
- Making connections, looking at similarities and differences.



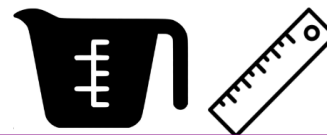
Pattern seeking

- All variables cannot be controlled.
- Look for relationships between variables



Fair testing

- All variables are controlled.
- What you change is in **numbers**.



Researching

- When we cannot investigate in school.
- Books, an expert, the internet.



Comparative testing

- All variables are controlled.
- What you change is in **words**.

