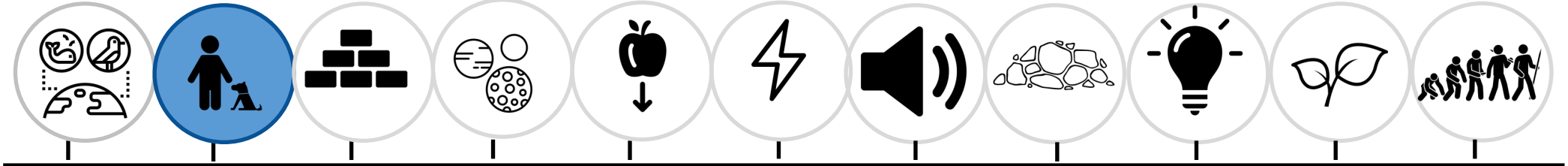
Year 4 Animals including humans

SCIENTIFIC CONTEXT: Biology



KEY VOCABULARY:

Digest	Break down food so it can be used by the body.
Oesophagus	A muscular tube which moves food from the mouth to the stomach.
Stomach	An organ in the digestive system where food is broken down with stomach acid and by being churned around.
Small intestine	Part of the intestine where nutrients are absorbed into the body.
Large intestine	Part of the intestine where water is absorbed from remaining waste food. Faeces are formed in the large intestine.
Rectum	Part of the digestive system where faeces are stored before leaving the body through the anus.
Food chain	A series of organisms each dependent on the next as a source of food.
Producer	A producer is an organism which produces its own food through photosynthesis.
Prey	The animals that predators feed on are called prey.
Predator	Any animal that hunts and feeds on other animals is called a predator .
Consumer	Living things that have to hunt, gather and eat their food are called consumers.

As Scientists we 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.

Working scientifically:

- Use results to draw simple conclusions, suggest improvements and raise further questions,
- Record findings using labelled diagrams.

Key Questions

1. What are the functions of the digestive system?
2. What are the different types of human teeth and what are they used for?
3. What are food chains and what do they show us?

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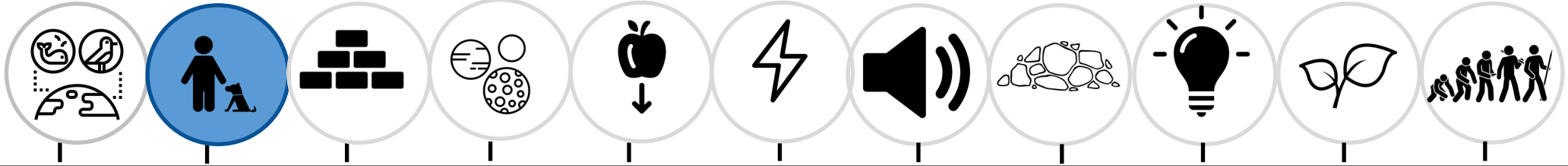

What I need to know?

In order to extract nutrients to provide energy and the materials needed for growth and healthy body systems, food must be broken down, or digested. The body relies on the digestive system to achieve this. The digestive system includes: the mouth, oesophagus, stomach, small intestine and large intestine.

Chemicals produced in saliva, the stomach, liver and pancreas break down food so that nutrients can pass through the small intestine, into the bloodstream and around the body. Undigested food passes through the large intestine and out of the body.

Different teeth have specific functions that are determined by their shape and position in the mouth. The four types of teeth are incisors, canines, pre-molars and molars. Humans have two sets of teeth in their lifetimes. The milk teeth fall out and are replaced by permanent adult teeth. Bacteria in the mouth digest sugar on teeth to form plaque and acid. These can attack teeth. To maintain healthy teeth, careful brushing is required twice a day for at least 2 minutes. Too much sugar and fizzy drinks should also be avoided.

A food chain describes the flow of energy from one organism to the next and the specific interdependence of living organisms on each other for food. The flow of energy can be represented by arrows in a diagram. Every food chain consists of producers and consumers. Producers are plants that make their own food through photosynthesis; consumers are animals that obtain energy by eating plants or other animals that have eaten plants.

Opportunities for Science Capital

- Bodyworks workshop at We are the Curious
- How my body works science show at We are the Curious
- Visit from a dentist (potential for parents to come in)

Assessment:

By the end of this topic, pupils will be able to: describe the simple functions of the basic parts of the digestive system in humans; identify the different types of teeth in humans and explain their simple functions,; construct and interpret a variety of food chains, identifying producers, predators and prey.

When working scientifically, pupils will be able to: use results to draw simple conclusions, suggest improvements and raise further questions and record findings using labelled diagrams.

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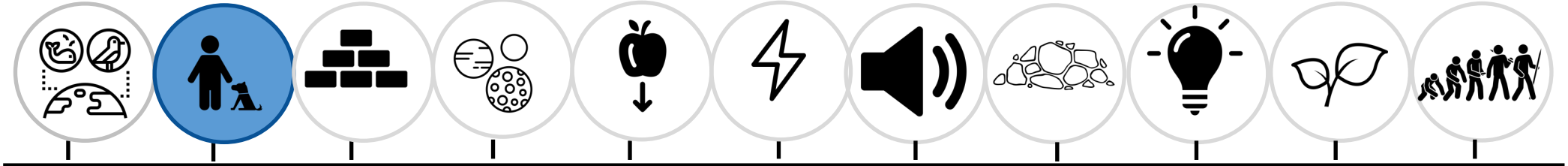

Theme 1: The Digestive System

Starter	Main	Plenary
KWL grid as pre assessment Starter activity from tigtag: https://www.tigtagworld.co.uk/mindmap/#/lessons/CLASS00333/activities/starter	**Substantive knowledge:** Explain to the children that in this lesson they are going to consider how food passes through the whole digestive system. Work through the films and activities from: https://www.tigtagworld.co.uk/mindmap/#/lessons/CLASS00333/activities/main	Disciplinary knowledge: Practical, modelling the digestive system, see full instructions at: https://www.tigtagworld.co.uk/mindmap/#/lessons/CLASS00333/activities/practical/ACTVTY00543 Deeper thinking opportunity, odd one out: https://www.tigtagworld.co.uk/film/the-digestive-system-odd-one-out-PRM00407/

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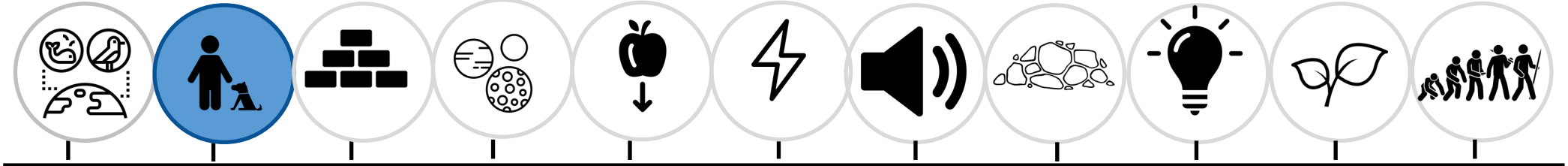

Theme 2: Teeth

Starter

Recap/deeper thinking opportunity: https://explorify.uk/en/activities/odd-one-out/how-are-these-linked-to-digestion

Main

Substantive knowledge

Work through the films and activities from: https://www.tigtagworld.co.uk/mindmap/#/lessons/CLASS00364

Plenary

Disciplinary knowledge

Working scientifically objective: Use results to draw simple conclusions, suggest improvements and raise further questions.

This week we are dental scientists

Discuss how children look after their teeth. Explain that we will be using hard boiled eggs to represent teeth to investigate tooth decay. As a class set up a fair test to investigate the effects that different liquids have on teeth e.g. cola, water, vinegar, milk, sports drink and orange juice. Discuss how they can make the comparison fair, i.e. as to quantity of liquid, types of containers, time and location (if using milk do they all need to be in the fridge?)

Leave for one week, although children can check on the experiment daily to see if they can notice and changes. After one week, unveil the eggs by tipping into a white bowl and photograph. Children to record their observations (look, feel, smell, etc.) and rate the eggs in order of damage to shell observed. Children to consider how they could improve the test and what further questions arise that they could investigate.

See full TAPs plan: Y4plan Teeth in liquid - Review.docx

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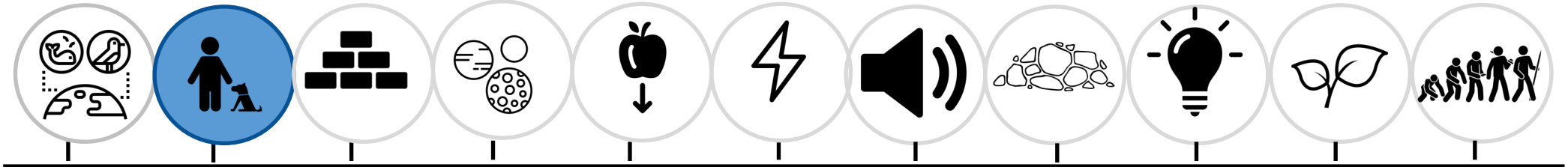

Theme 3: Food Chains

Starter

- **Recap/deeper thinking opportunity:** What if… https://explorify.uk/en/activities/what-if/we-had-no-teeth

Main

Substantive knowledge

Introduce key vocabulary: producer, consumer, predator, prey.

Work through activities from: chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/http://www.wreningham.norfolk.sch.uk/documents/weekbeg8thJuneClass3SCIENCEInformation.pdf

Plenary

Disciplinary knowledge

Research

Working scientifically objective: recording findings using labelled diagrams

Ask children to select their own animal to research in order to create their own food chain. E.g. research an elephant's diet, what do they eat? What animals eat elephants? Present work in science books.

HA —> research, create and compare food chains from different habitats (e.g. ocean vs tundra)

LA/SEN: give children pictures of animals and plants and ask them to order into a correct food chain independently.

Complete KWL