Knowledge Organiser

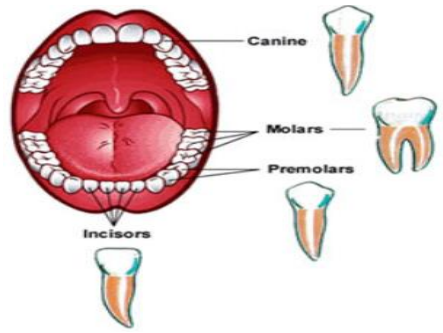
Subject: Science Unit: Animals including humans – part 2

Overview:		
During this sequence of learning, pupils will understand the simple functions of parts of the digestive system in humans, identify the different teeth and their functions and construct and interpret a variety of food chains.		
What should I already know?	Vocabulary:	
• All living things reproduce and have offspring. • Some animals give birth to live young. Their offspring normally look like them when they are born. • Some animals lay eggs which hatch into live young. This young then develops into an adult. • To stay alive, animals have 3 basic needs: air, water and food. • To grow into a healthy adult, we must eat the right types of food. Over half of our diet should be made up of carbohydrates, fruits and vegetables. • Fats and sugary foods should be eaten in small amounts and not very often. • People need to exercise often to keep their bodies strong and fit. • To stop illness and infections spreading, we must be hygienic and keep ourselves clean. • There are five main food groups and they all have a different function within the body. • Protein is essential for muscle repair and growth whilst carbohydrates give you energy. • Calcium which is often found in dairy foods helps your bones and teeth become strong. • Fruit and vegetables contain many of the vitamins and minerals that keep us healthy. • Eating the right amount of each food group is called a balanced diet and this is important in order to stay healthy. • Eating too much of certain food groups is not good for you e.g. eating too much sugar can cause tooth decay and eating too much fats and sugars can cause obesity. • Some animals such as humans have a skeleton made up of solid bones. • The skeleton provides support to the body and protects many of the vital organs – the skull protects the brain and the ribcage protects the heart and the lungs. • The human skeleton is made up of bones and cartilage. • Muscles are arranged in pairs which work together to help with movement.	digestion excretion duodenum small intestine large intestine stomach rectum esophagus tongue saliva acid bile enzymes	The process where food is broken down by the body. To separate and remove waste from the body. The first part of the small intestine. The part of the digestive system where nutrients are reabsorbed. The part of the digestive system where water is absorbed from the food. A pouch of the digestive system where food passes through and is broken down by acid which is stored here. The end of the large intestine where waste is stored. A muscular tube which links the mouth and the stomach. A fleshy, moveable part of the mouth that is covered with taste buds. A fluid containing water that is produced in the mouth and helps to break down food. A liquid that lives in the stomach and helps breakdown food. A thick, yellow or greenish fluid that is released by the liver and helps digestion and the breakdown of fats. A protein that speeds up a reaction.

- Some animals such as insects have an exoskeleton which is a hard outer surface on the outside of their body.
- Many invertebrates such as earthworms and slugs have water inside them that helps with support.

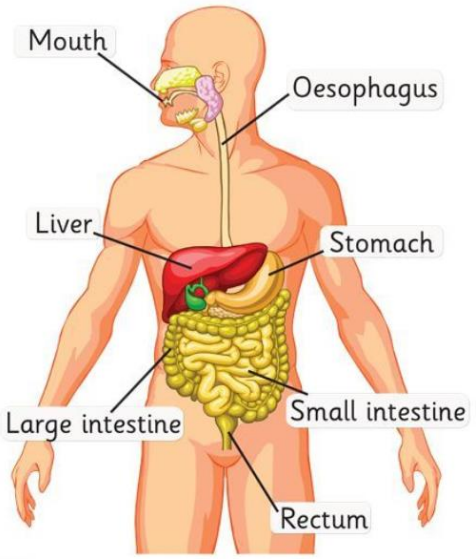
What will I know by the end of the unit?

- Food passes through the body with the nutrients being extracted and the waste products excreted, and that this process is called digestion.
- The process of digestion involves breaking complex foodstuffs into simpler building blocks that can be absorbed by the body.
- The process of digestion begins with food being chewed in the mouth by the teeth and saliva added – this starts the breakdown of food.
- Humans have three types of teeth – incisors, canines and molars – and that these each perform different functions.
- Incisors slice food, canines tear food (especially meat) and molars grind food.



- Children have an initial set of teeth that are then gradually replaced between the ages of 6 and 12.
- Food is squeezed down the oesophagus towards the stomach in a wave-like action called peristalsis.
- The stomach releases acid and enzymes to continue breaking down the food; the stomach is an organ; an organ is a part of living thing that is self-contained and has a specific important job.
- Further enzymes and bile break down the food further as it moves through the duodenum towards the small intestine.
- The small intestine adds more enzymes and then absorbs the nutrients.
- The large intestine absorbs water from the undigested food.
- Undigested food is stored in the rectum before being excreted through a muscle called the anus.
- A food chain tracks the path of energy through a habitat.
- All energy for a food chain initially comes from the Sun which is absorbed and turned into energy by plants which are called producers.
- Consumers take in energy by eating a producer.

incisors	A front tooth that is used for cutting food.
canines	A pointy tooth that is used to tear food.
molars	A tooth found at the back of the mouth that grinds food.
predator	An animal that eats another animal.
prey	An animal that is eaten by another animal.
producer	A living thing that uses sunlight for energy. Producers are found at the start of a food chain.
consumer	A living thing that eats to get energy.
primary consumer	The first consumer that eats the producer.
secondary consumer	The second consumer in a food chain that eats the primary consumer.
tertiary consumer	The third consumer within a food chain that eats the secondary consumer.



- An animal that is eaten by another is called prey, and that an animal that eats other animals is called a predator.
- The first consumer in a food chain is called a primary consumer, the second is called a secondary consumer and above it is a tertiary consumer.
- The arrows in a food chain show the direction that energy is travelling through a habitat.

<u>Example of a food chain:</u>