




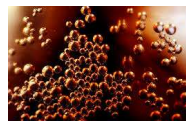



# States of matter – Year 4



Key vocabulary	
<b>change of state</b>	When a material changes from one state to another.
<b>melting</b>	A solid changing into a liquid.
<b>freezing</b>	When a liquid becomes cold enough to turn solid, it freezes.
<b>melting point</b>	The temperature at which a solid becomes a liquid.
<b>boiling point</b>	The temperature at which a liquid turns into a gas.
<b>evaporation</b>	When liquid changes into a gas.
<b>condensation</b>	The process when a gas changes into a liquid, caused by cooling.
<b>water cycle</b>	The never-ending process of water moving from the oceans, up into the atmosphere, and back to the Earth and oceans.
<b>temperature</b>	The measure of how hot or cold something is.

## Solids, liquids and gases

A <b>solid</b> keeps its shape and has a fixed volume.		
ice		sugar
		
A <b>liquid</b> has a fixed volume but changes in shape to fit the container. It can be poured.		
water		honey
		
A <b>gas</b> fills all the available space; it has no fixed shape or volume.		
water vapour		bubbles in cola
		

Significant scientist	
<b>Bernard Palissy</b> (1510-1590) 	Bernard Palissy was a French potter and scientist. He is often credited as the man who 'discovered' the modern theory of the water cycle. He asserted that rainfall alone was sufficient for the maintenance of rivers.

## Melting and freezing

	<b>Melting</b> is a change of state from solid to liquid. The melting point of water is 0°C.
	<b>Freezing</b> is a change of state from liquid to solid. The freezing point of water is 0°C.

**Boiling** is a change of state from liquid to gas. Water boils when it is heated to 100°C.



## Evaporation and condensation

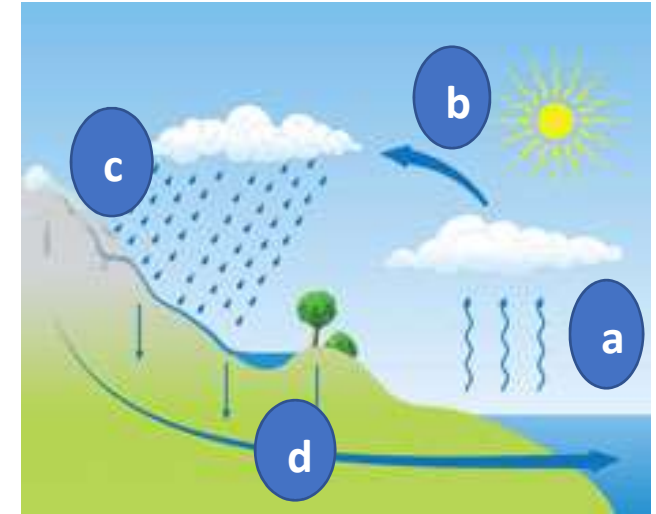


**Evaporating puddles**  
 Evaporation is the change from a liquid to a gas at the surface of the liquid.



**Condensation in the bathroom**  
 Condensation is the change from a gas to a liquid, caused by cooling.

## The Water Cycle



<b>a</b>	<b>Water evaporates into the air</b> The sun heats up water at the surface of seas, rivers, lakes and turns it into water vapour. The water vapour rises into the air.
<b>b</b>	<b>Water vapour condenses into clouds</b> Water vapour in the air cools and changes back into tiny drops of liquid water, forming clouds.
<b>c</b>	<b>Water falls as rain snow, sleet etc</b> When too much water has condensed the water droplets in the clouds get too heavy and water falls back down to Earth in the form of rain, snow, sleet etc. This is called precipitation.
<b>d</b>	<b>Water returns to the sea.</b> Rainwater runs over the land and collects in lakes or rivers which take it back to the sea. <b>The cycle starts all over again</b>

Key vocabulary	
<b>digestive system</b>	The organs in your body involved in the digestion of food.
<b>digestion</b>	This is the way the body breaks down food so the body can absorb it.
<b>herbivore</b>	Animals that only eat plants.
<b>carnivore</b>	Animals that eat other animals.
<b>omnivore</b>	Animals that eat both plants and animals.
<b>producer</b>	All green plants can make food in their leaves. They are the only producers of food.
<b>consumer</b>	Animals that eat plants in a food chain.
<b>predator</b>	Animals that catch and eat other animals.
<b>prey</b>	Animals that are hunted and eaten by predators.
<b>food chain</b>	Animals eat plants or other animals. The way this happens is shown in a food chain.

### Teeth

Humans have 4 types of teeth:

- **incisors** – used for cutting
- **canines** – rip and tear food
- **molars and premolars** – for grinding and chewing food



Incisor



Canine

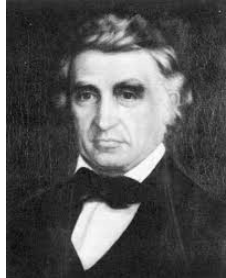


Premolar



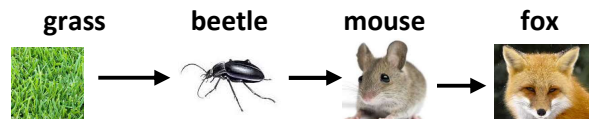
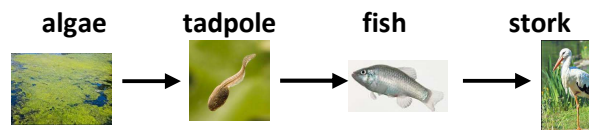
Molar

## Animals including humans – year 4

Significant scientist	
<b>William Beaumont</b> (1785-1853) 	William Beaumont was a surgeon in the U.S. Army. He carried out lots of experiments and research on human digestion. As a result, he provided the world with new information about the digestive process in living human beings.

### Food chains

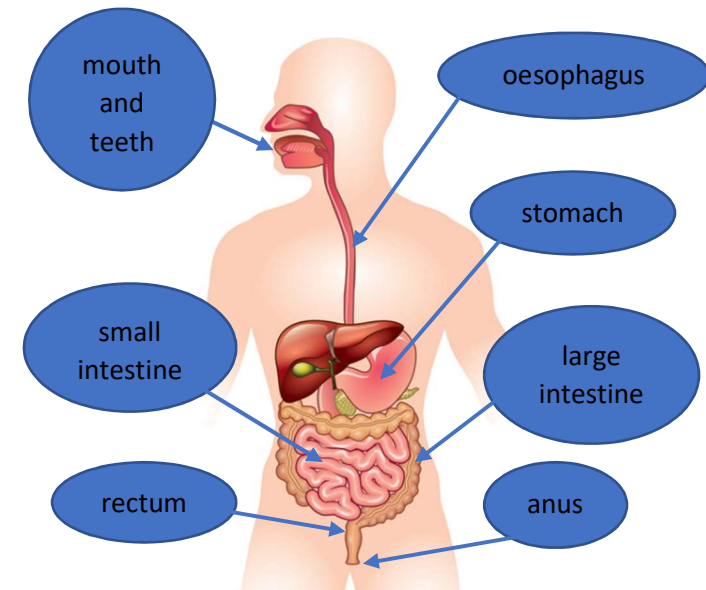
→ = is eaten by



### Lion skull



Lions are carnivores. They have big canine teeth to help them catch their prey.



### The main parts of the digestive system:

- Food enters the body through the **mouth**
- The **teeth** start to break the food down. **Saliva** is added and the tongue rolls the food into a ball.
- After swallowing, the food passes down the **oesophagus** to the stomach
- In the **stomach** the food is broken down further by being churned around and some chemicals are added.
- Food passes into the **small intestine**. Here **nutrients** are removed from the food to be used elsewhere in the body.
- The rest passes into the **large intestine** where **water** is removed to be used elsewhere in the body.
- What is left is then stored in the **rectum** until it leaves the body through the **anus** when you go to the toilet.