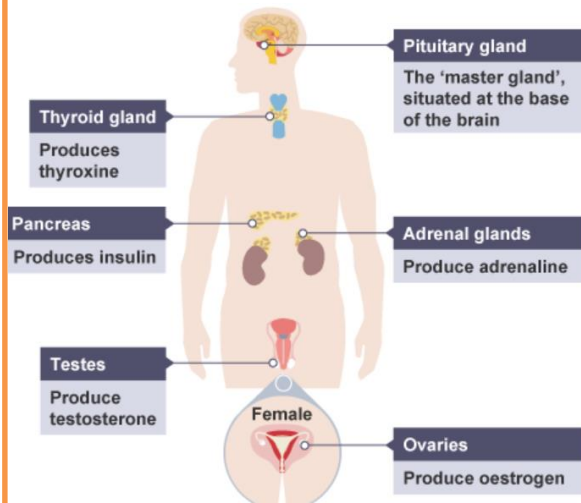


B11 – Hormonal control



In animals, conditions such as water concentration, temperature, and glucose concentration must be kept as constant as possible. These control systems are part of **homeostasis**.

A **negative feedback** control system responds when conditions change from the ideal or set point and returns conditions to this set point.

Diabetes is a condition where the blood **glucose** levels remain too high. It can be treated by injecting **insulin**. The extra insulin causes the liver to convert glucose into **glycogen**, which reduces the blood glucose level.

	Low glucose	High glucose
Effect on pancreas	Insulin not secreted into the blood	Insulin secreted into the blood
Effect on liver	Does not convert glucose into glycogen	Converts glucose into glycogen
Effect on blood glucose level	Increases	Decreases

There are 2 types of diabetes:

Type 1 diabetes: disorder in which the pancreas fails to produce enough insulin. This can be detected from an early age. Controlled by insulin injections.

Type 2 diabetes: person's body cells no longer respond to insulin produced by the pancreas. It is more common in older people. It can be controlled by a carbohydrate controlled diet and an exercise regime. There is a correlation between rising levels of **obesity** in the general population and increasing levels of type 2 diabetes.

B17 – Organisation of an ecosystem

Feeding relationships show what organisms eat or are eaten by others and through this the levels of organisation in an ecosystem. These can be shown in **food chains**, which add together to make **food webs** for a **habitat**.

A simple example of a food chain is:

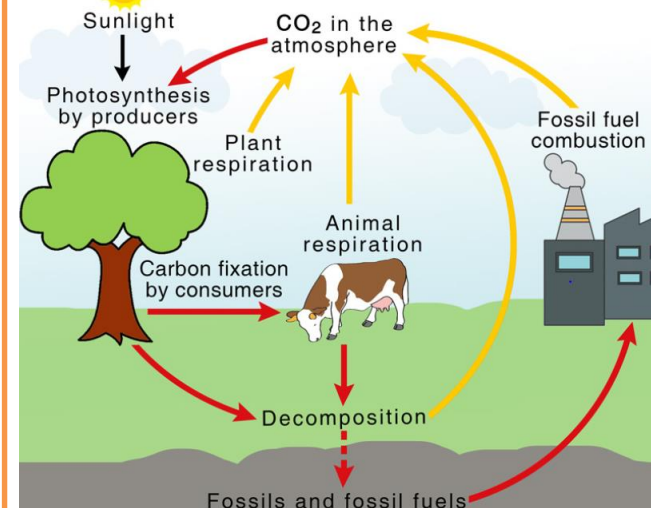
grass → rabbits → foxes

At the base of almost every food chain is a **producer**. These are plants or algae, which **photosynthesise**. This means they convert energy from the sun into glucose during photosynthesis producing **biomass**. It is this which feeds the rest of the food chain.

All animals above the producer are called consumers. The first is the **primary consumer**, the next is the **secondary consumer**. Animals that hunt and kill others are called **predators**, and those that are hunted and killed are called **prey**.

Carbon cycle: Carbon is an essential element for life on Earth and parts of each of the cells in our bodies are made from it. :

Process	Carbon starts as	Carbon ends as
Photosynthesis	Carbon dioxide	Glucose
Respiration	Glucose	Carbon dioxide
Combustion (burning)	Fuel (eg methane or wood)	Carbon dioxide



Decomposers are bacteria and fungi, which break down dead organisms (decomposition). They do this by releasing **enzymes** onto the dead matter and afterwards, consume the broken down substances.

Key vocabulary:

Gland - An organ or tissue that makes a substance for release, such as a hormone.

Glucose - A simple sugar used by cells for respiration

Glycogen - Animals store glucose as glycogen in their liver and muscle tissues.

Hormone - Chemical messenger produced in glands and carried by the blood to specific organs in the body.

Oestrogen - A female sex hormone produced in the ovaries, which is responsible for puberty in girls and the regulation of the menstrual cycle.

Puberty - Time during which sexual maturity happens.

Pancreas - Large gland located in the abdomen near the stomach which produces digestive enzymes and the hormone insulin

carbon cycle - The processes and events involved in recycling carbon in the environment.

Decomposer - An organism which eats dead organisms, fallen leaves, animal droppings, etc, and breaks them down into simpler materials.

food web - A network of food chains, showing how they all link together

Prey - Organisms that predators kill for food.

Predator - An animal that hunts, kills and eats other animals for food.

water cycle - The continuous movement of water on, above and below the Earth.

Videos



Quizzes

