



eduresource.com

B12 Organisms and their environment

The Sun is the principal source of energy input to biological systems.

Food chain shows the transfer of energy from one organism to the next, beginning with a producer.

Food web is a network of interconnected foodchains.

Producer is an organism that makes its own organic nutrients, usually using energy from sunlight, through photosynthesis.

Consumer is an organism that gets its energy by feeding on other organisms.

Herbivore is an animal that gets its energy by eating plants.

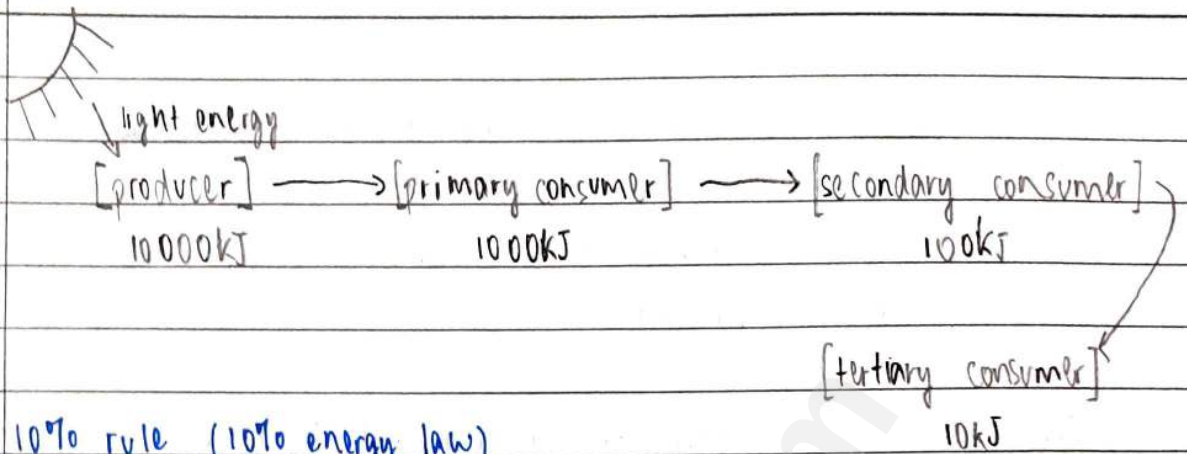
Carnivore is an animal that gets its energy by eating other animals.

Decomposer is an organism that gets its energy from dead or waste organic matter.

Ecosystem is a unit containing all of the organisms and their environment, interacting together, in a given area, e.g. a lake.

Trophic level is the position of an organism in a food chain or food web.

Energy is transferred from one trophic level to the next when a consumer feeds on another organism, gaining energy from its body.



10% rule (10% energy law)

Producer, usually plants, perform photosynthesis.

Due to metabolism, respiration and movement, energy is lost.
usually as heat energy

Not all of the amount of energy gained by the producer is transferred to the consumer.

This is why food chains usually have fewer than five trophic levels.

Constructing food chains

Grassland:

Grass → Grasshopper → Frog → Snake → Hawk

Freshwater:

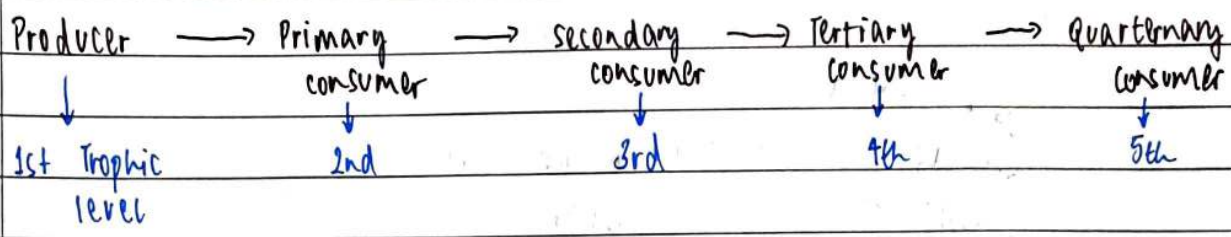
Algae → Insects → Fish → Pelican

Marine:

Seaweed → zooplankton → Sardines → Sharks

Producer → Primary consumer → Secondary consumer → Tertiary consumer → Quaternary consumer

Consumers may be classed as primary, secondary and tertiary according to their position in a food chain.



eduresource.com
Guided
IGCSEs