

MINISTRY OF EDUCATION
SECONDARY ENGAGEMENT PROGRAMME
GRADE 8
INTEGRATED SCIENCE

Week 6:

Lesson 1

Topic: Feeding relationships in the ecosystem

Sub-topic: Food Chain

Objectives: After reading the handout and completing the worksheet, students will:

- clearly explain how specific organisms are adapted to living in their habitat.
- correctly differentiate among primary consumers, secondary consumers and producers.
- correctly create aquatic and terrestrial food chain with at least four organism

Content

Terminologies

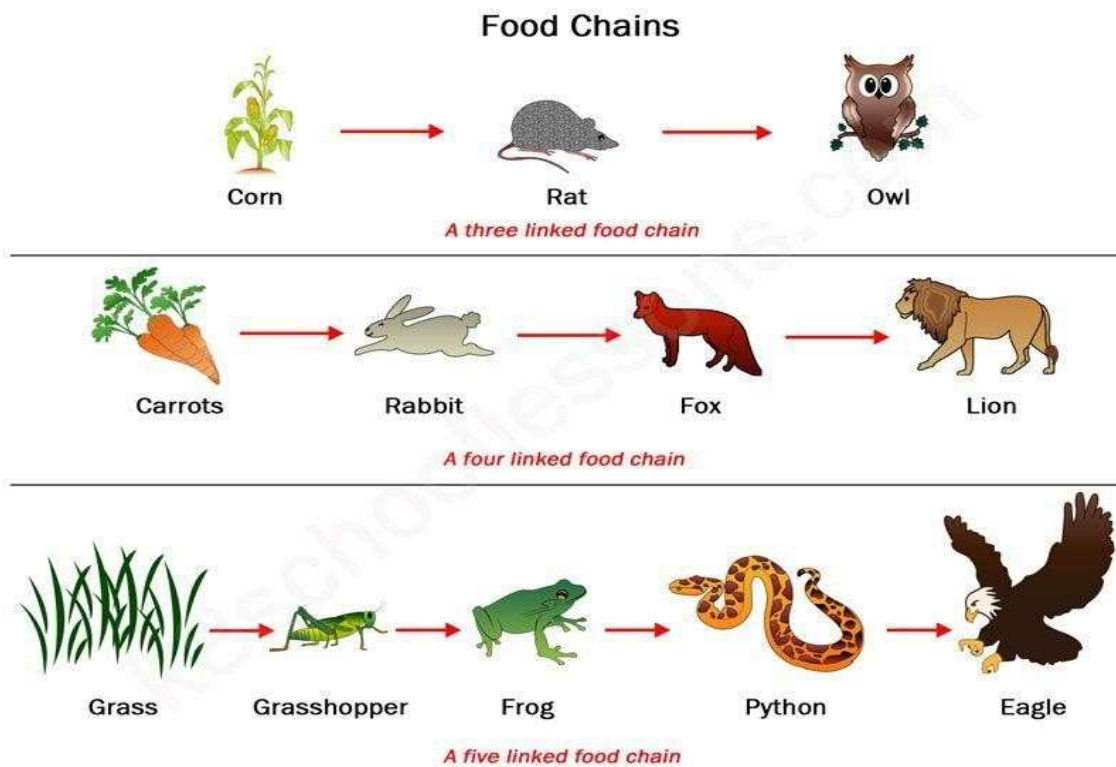
- **Producers-** Organisms that make their own food (all green plants, algae, etc.)
- **Consumers-** Organisms that depend on other organisms for their food (all animals)
- **Primary consumer or herbivore-** organisms that feed on plants only e.g. goat, sheep, caterpillar etc
- **Secondary consumer or carnivore-** organisms that feed on the flesh of other animals e.g. tiger, lion, bird etc.
- **Tertiary consumer-** Organisms that feed on Secondary consumers e.g. the cat, hawk
- **Scavengers-** organisms that feed on the dead remains of animals and plants (carrion-crow, earthworm)
- **Decomposers-** Microscopic organism such as bacteria and fungi obtain their energy from dead or decaying material.

- **Habitat**- A place where organisms live. There are **aquatic** (occurring in streams, trenches) and **terrestrial** (found on land)
- **Community**- A group of organisms living together (e.g. A tree trunk)
- **Population**- organisms of the same species living together.
- **Predator**- An organism that hunts and kill other animals for its food e.g.tiger
- **Prey**- An organism that is being hunted and killed e.g. a deer

Food Chains

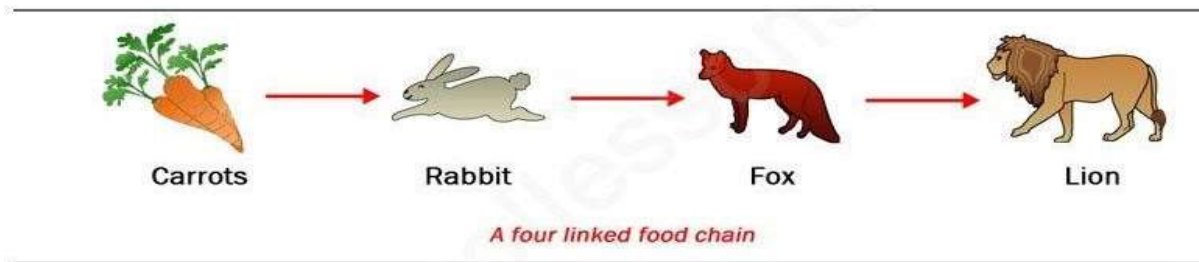
Food chain, in ecology, shows the sequence of transfers of matter and energy in the form of food from organism to organism. It is a linear network starting from producer organisms (such as grass or trees which use radiation from the Sun to make their food).

Examples of food chains are shown below



A food chain always starts with a **producer**. This is an organism that makes its food. Most food chains start with a green plant because plants can make their food by **photosynthesis**. A food chain also shows how the organisms are related to each other by the food they eat. Each level of a food chain represents a different trophic level. There are other food chains where the habitats are aquatic. The water could be fresh or it could be salt. In the water, there may be tiny microscopic plants and animals called **plankton**. The organisms of plant plankton contain chlorophyll which enables them to use sunlight. They trap the energy from the sun. The organisms of animal plankton feed on the plant plankton. The animal plankton is in turn eaten by small fishes. The small fishes are then eaten by bigger fishes. A food chain could end at any point when the organism dies. The body of the organism is either broken down by decomposers or is eaten by scavengers.

What happens when if the fox (a secondary consumer is removed from the food chain)?



If the foxes are removed, the rabbit population will increase unchecked since their natural predator has been removed from the ecosystem. ... Thus, if we remove several secondary consumers from the ecosystem, the primary consumers, the producers, and the tertiary consumers are all affected.

The arrow in the food chain (→) indicates the direction in which the energy is flowing.

Home work

1. Make a list of some of the organisms in your yard and construct at least three (3) food chains.
2. On the food chains that you have constructed identify the producer, primary consumer, secondary consumer and tertiary consumer.
3. Identify if possible any predator-prey relationships that you may encounter within your environment.