

## Grade 6

### Term 2

#### Chapter reference 8.3

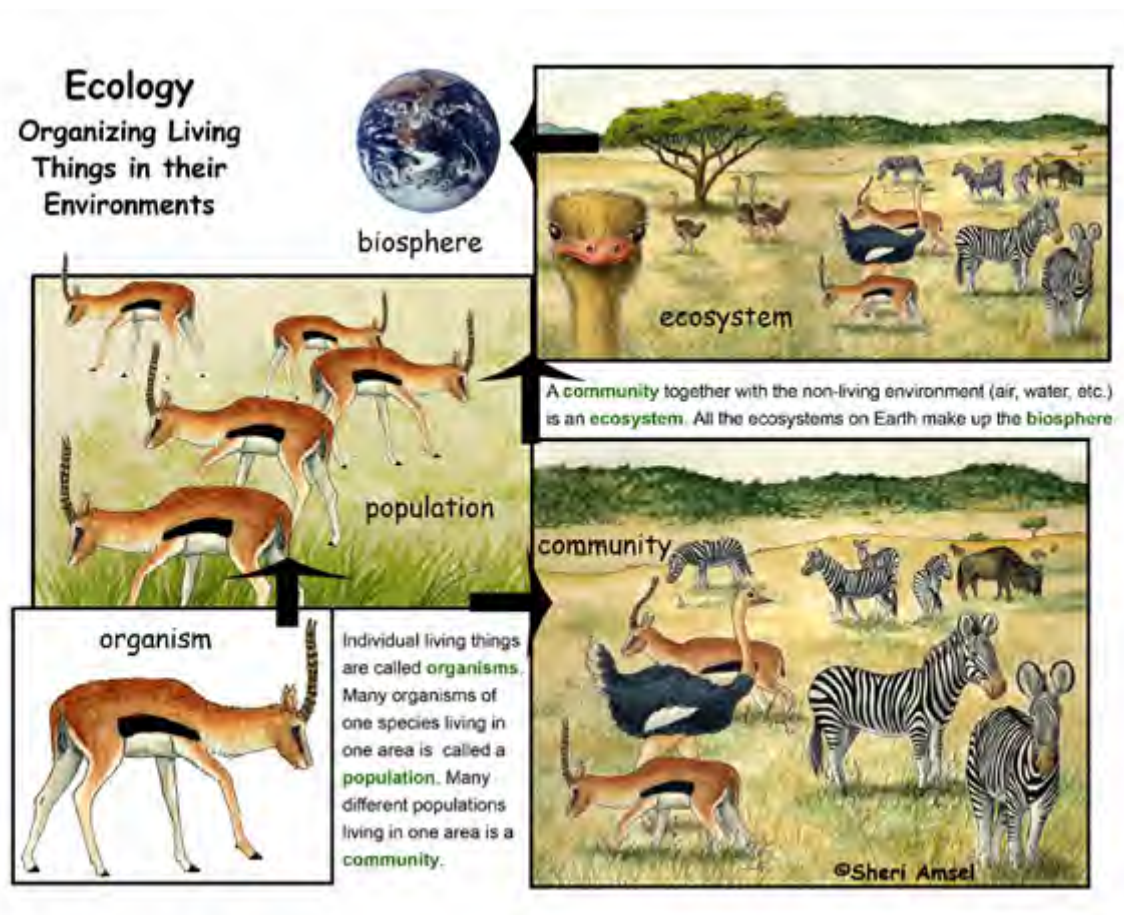
#### Communities.

#### Student Learning Outcomes

6.LS.14 **Define** habitat, niche, and flow of energy through ecosystems.

6.LS.15 **Explain** levels of interactions and relationships between organisms in ecosystems.

- It is very rare for an organism to live a life completely isolated from all other organisms. Usually, organisms live within a **population** and as part of a **community**.
- A **community** is all of the populations of different species living in a particular area such as a Wadi.



There are some keywords you need to know for this topic:

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**Habitat** – the place within an ecosystem where an organism lives.

- The habitat is an organism's 'home'



Students **are required** to link the description to the key word.

Students are **not required** to remember rote definitions.

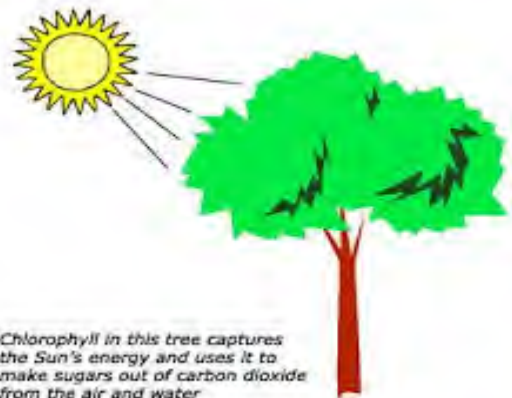
**Niche** – is what a species does in its habitat to survive- its job.

- A niche is the role that an organism has in its community. It may include the type of food it eats or how it interacts with other organisms.
- Each organism has its own unique niche in the community.



**Producer** – is an organism that gets its energy from the environment, such as sunlight, and make their own food.

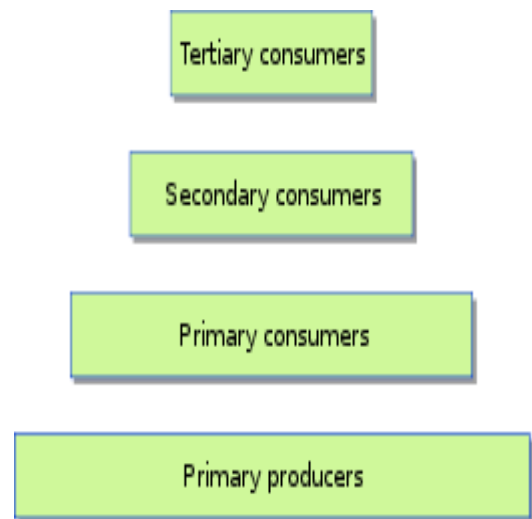
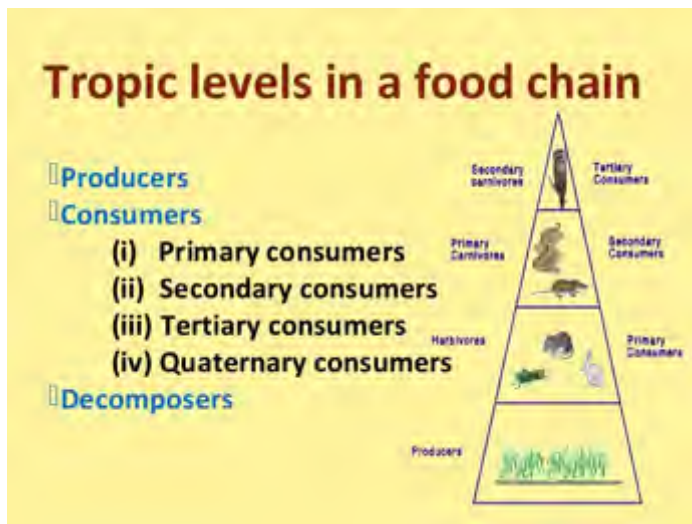
- Producers are **usually plants** that use the Sun's light energy to photosynthesize.
- **FACTOID:** enough energy lands on the earth in one day to supply all of our energy needs for a year!



*Chlorophyll in this tree captures the Sun's energy and uses it to make sugars out of carbon dioxide from the air and water*

**Consumer** – is an organism that gets its energy by eating other organisms.

- Consumers may be grouped as **carnivores**, **omnivores**, **herbivores** or **detritivores**, depending upon the type of food they eat.
- Sometimes, they may be called **primary consumers**, **secondary consumers** and **tertiary consumers**.



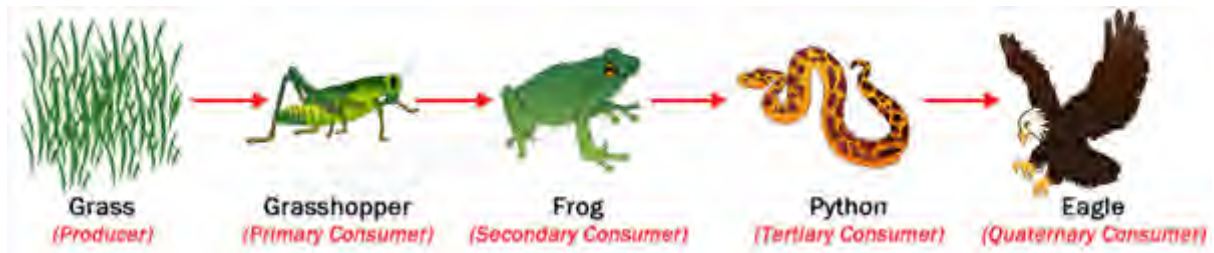
Type of consumer	What they consume
Carnivore	A carnivore gets its <b>energy</b> by <b>consuming other consumers</b> , usually <b>herbivores</b> and <b>omnivores</b> . e.g. Lion or tiger
Herbivore	A herbivore is an organism that gets its <b>energy</b> by consuming <b>plants (producers)</b> . e.g. Goat or horse
Omnivore	An omnivore is an organism that gets its <b>energy</b> by consuming other consumers (cows and chickens) <b>and</b> plants. e.g. Humans and bears
Detritivores	A detritivore gets its energy by consuming <b>dead and decaying matter</b> . e.g. centipedes and earthworms
Decomposers	A decomposer is an organism that carries out the <b>final breakdown of materials in the environment</b> . E.g. bacteria and fungi



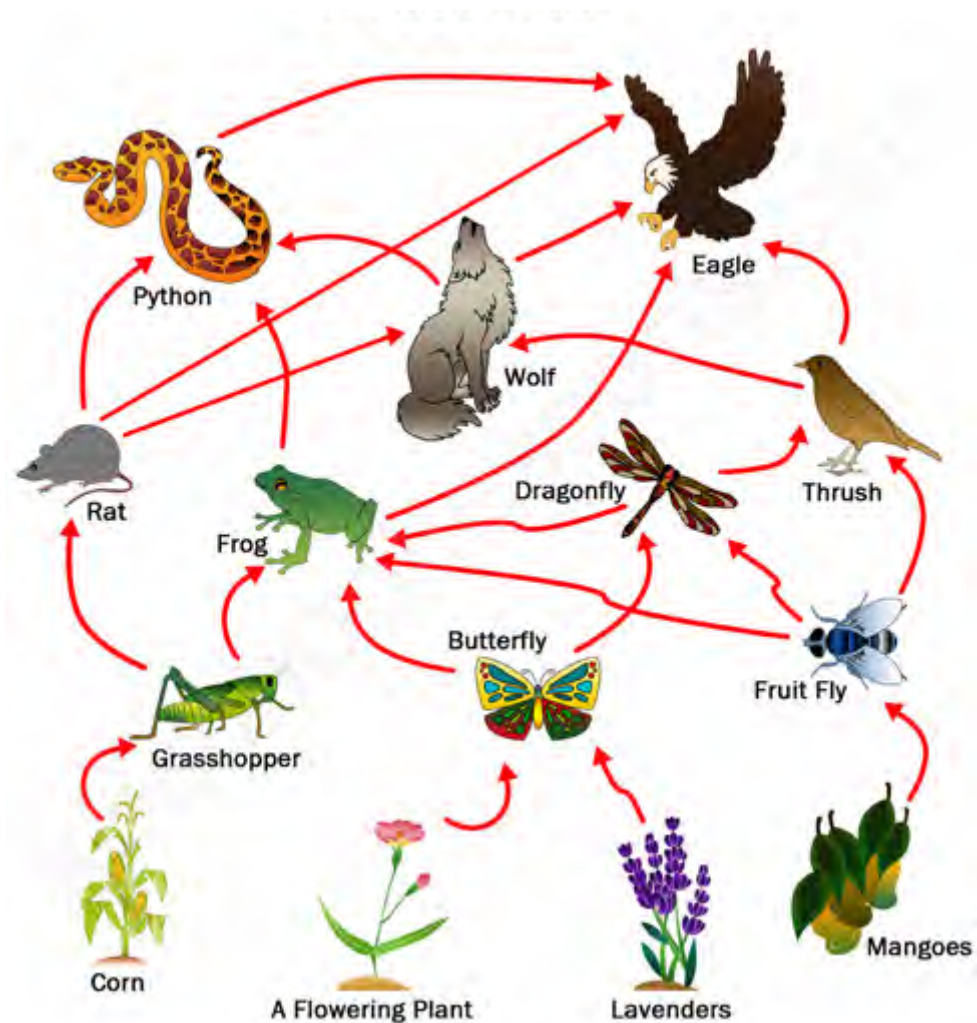
**Flow of energy** – A food chain is a way of showing how energy moves through a community.

- A **food chain** only **shows part** of the energy flow through a community. A **food web** is a **much better** representation of how energy flows through a community.
- Remember the **arrows** represent the **flow of energy** through the ecosystem.

A typical food chain:



A typical food web:



## Relationships in communities

- Populations in communities interact with each other in a variety of ways.

- Some have feeding relationships- they are consumers or are consumed.

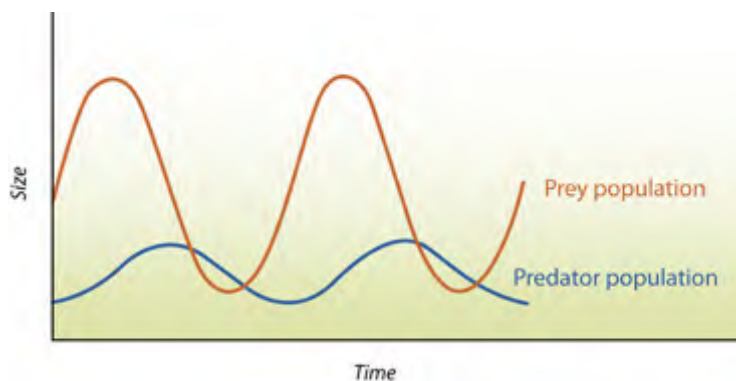


- Some organisms provide shelter or protection for others.



## Predator-Prey Relationships.

- To understand this, we need to identify what a **predator** and **prey** are.
- **Predator** – an animal that hunts and eats another animal.
- **Prey** – an animal that is hunted by another animal.
- **Predator-prey relationship** – where a predator hunts a prey animal.
- Examples of predator-prey relationships include:
  - A lion hunting a zebra
  - A falcon hunting a rabbit
  - A bear hunting salmon
  - Sharks hunting seals
- From the graph you can see the effect of predator-prey relationships



You can see from the graph that as the predator population begins to rise the prey population begins to fall.

Likewise, as the prey population falls, so does the predator population.

## Cooperative relationships

- **Cooperative relationship** – when members of a population work together.
- Examples include the following:
  - Sharks and remora fish
  - Meerkats raising young
  - A pride of lions hunting

Students **are required** to link the description to the key word.

Students are **not required** to remember rote definitions.

Students are **not required** to remember examples of each.

Students **are required** to read information on relationship and identify the symbiotic relationship observed.

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## Symbiotic relationships

- A symbiotic relationship is when some species have such **close relationships** that they are almost always found living together.
- **Symbiosis**  
A close, long-term relationship between two species that usually involves an exchange of food or energy.
- There are **three** main types of symbiotic relationships:

### 1. Mutualism

A symbiotic relationship in which both partners benefit (++)  
An example is the clown fish and the coral as seen here. The clown fish protects the anemone from attack and the anemone gives shelter to the clown fish and its eggs. Think of Finding Nemo!



### 2. Commensalism

A symbiotic relationship that benefits one species but does not harm or benefit the other (+ =).  
An example is the shark and the remora fish as shown here. The shark gets cleaned of parasites which are a source of food for the fish.



### 3. Parasitism

A symbiotic relationship that benefits one species and harms another (+ -).

An example is the parasite that causes malaria (the mosquito simply carries the malaria causing organism). It causes great harm and even death to humans.



#### FACTOID:

- The mosquito carries a single-celled organism called *Plasmodium*.
- In 2015 there were approximately 212 million cases of malaria around the world.
- There were an estimated 429,000 deaths.