

## Int 2 Biology - Unit 2 Environmental Biology & Genetics

### Revision Notes for Chapter 6 - Energy Flow

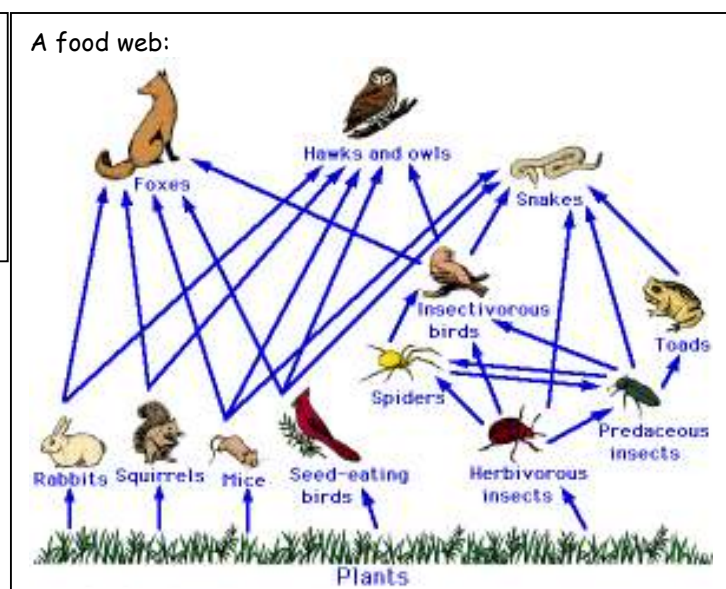
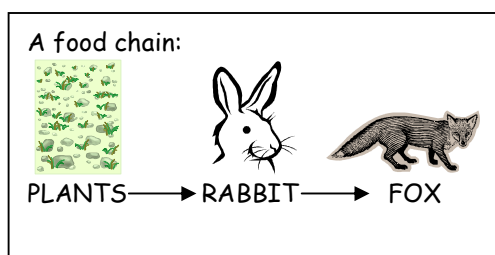
#### Terms

There are many terms (words) in chapter 6 which you should learn. If you don't know the meanings of these terms then you will find it very difficult to answer questions in the exam. Below are some terms you should know the meanings of:

TERM	MEANING
Ecosystem	Habitat + Community + Abiotic factors
Community	All of the individuals in <u>all species</u> living together in an area
Population	All of the individuals of <u>one species</u> living in an area
Habitat	Place where an organism lives
Producer	Organisms (e.g. green plants) which make their own food by photosynthesis
Consumer	Organisms which obtain energy by eating other organisms
Herbivore	Animals which eat only plants
Carnivore	Animals which eat only meat
Omnivore	Animals which eat both plants and meat
Predator	Animal which hunts another animal for food
Prey	Animal which is hunted by the predator
Decomposer	Organisms (e.g. bacteria and fungi) which obtain their energy by breaking down waste material
Ecological niche	The role of an organism within its community (e.g. where does it live?, what does it eat?, what eats it?)
Abiotic factor	A non-living factor (e.g. temperature, soil pH, rainfall) which affects the animals and plants living in an area

#### Food chains and food webs

Food chains are diagrams which show simple feeding relationships within a habitat. Food webs are formed when many food chains are put together (a bit like fitting together pieces of a jigsaw) to form a larger and more complex diagram.



You should be able to describe the effect of removing one organism from the food web. Your answer should include whether you think a population will INCREASE, DECREASE or STAY THE SAME, followed by an explanation of how you reached this conclusion.

A simple example:

If all the mice were removed from the food chain would the population of seed-eating birds INCREASE, DECREASE or STAY THE SAME. Give a reason for your answer.

INCREASE - there would be more plants available for the seed-eating birds.

A more complicated example:

If all the mice were removed from the food chain would the population of toads INCREASE, DECREASE or STAY THE SAME. Give a reason for your answer.

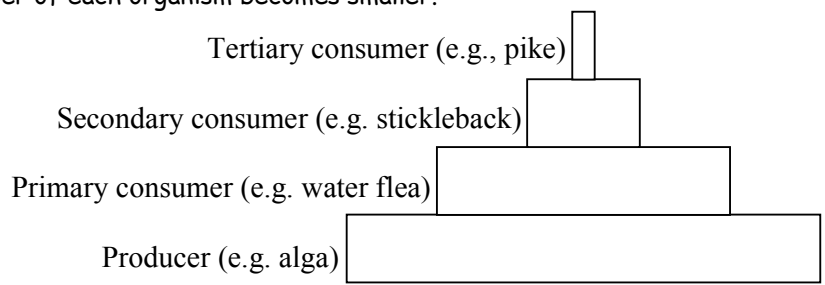
INCREASE - there would be more plants available for the herbivorous insects to eat. An increase in the number of herbivorous insects would lead to an increase in the number of predaceous insects and this in turn would lead to an increase in the number of toads.

**The arrows in a food chain or web show DIRECTION OF ENERGY FLOW.**

**Energy can be lost from a food chain or food web by -  
MOVEMENT, HEAT or UNDIGESTED FOOD.**

Pyramids

Pyramids of numbers show how many organisms can be found at each feeding level in a food chain. As you move up a pyramid of numbers the organisms normally become larger, but the number of each organism becomes smaller.



Sometimes a pyramid of numbers does not look very pyramid shaped. This is normally because the producer is a very large organism (such as an oak tree). In this case we draw a pyramid of biomass instead. Pyramids of biomass show the mass of each population in a food chain.

There is a third type of pyramid called a pyramid of energy. This is the most reliable type of pyramid as it is based on the productivity of the ecosystem (kilojoules of energy/m<sup>2</sup> which each population adds to the ecosystem in one year).