**4.7.2.1 Organisation of an Ecosystem – Year 10 Biology Self Study**

**Facts**

* All organisms that photosynthesise (plants and algae) are the producers of biomass for life on Earth
* Feeding relationships within an ecosystem can be represented by food chains
* Food chains are given levels and they all start with producers
* An example of a food chain: Carrot 🡪 Rabbit 🡪 Fox
* Level 1: Plants and algae make their own food and are called producers.
* Level 2: Herbivores eat plants/algae and are called primary consumers.
* Level 3: Carnivores that eat herbivores are called secondary consumers.
* Level 4: Carnivores that eat other carnivores are called tertiary consumers.
* Apex predators are carnivores with no predators.
* Decomposers break down dead plant and animal matter by secreting enzymes into the environment. Small soluble food molecules then diffuse into the microorganism.
* Different levels of food chains are called trophic levels
* Consumers that eat other animals are called predators
* Prey are animals that are eaten by predators
* In a stable community, predators and prey rise and fall in cycles called predator-prey cycles.

**Task 1: Watch free Science lessons (if you can) and do a mind map of the information**

* GCSE Science Biology (9-1) Food Chains and Predator-Prey Cycles

**Task 2: Answer these Questions**

1. What is meant by a producer?
2. What is a herbivore?
3. What is a carnivore?
4. What is an apex predator
5. What is a trophic level?
6. What examples of producers?
7. What are consumers?
8. What are decomposers?

**Task 3**: Write a food chain for the following series of organisms, labelling them with levels and what type of organism they are

* *Cat, bird, caterpillar, cabbage*
* *Antelope, tiger, grass, vulture*
* *Grass, human, cow*

**Task 4: Copy and complete the fill in the gaps:**

Photosynthetic organisms are the \_\_\_\_\_\_\_\_\_ of biomass for life on Earth. Feeding relationships within a community can be represented by \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_. All food chains begin with a \_\_\_\_\_\_\_\_\_\_\_\_ which synthesises molecules. This is usually a \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ or alga which makes glucose by \_\_\_\_\_\_\_\_\_\_\_\_. Producers are eaten by \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_, which in turn may be eaten by \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_ and then tertiary consumers. Consumers that eat other animals are called \_\_\_\_\_\_\_\_\_\_\_\_ and those that are eaten are \_\_\_\_\_\_\_\_\_\_\_. In a \_\_\_\_\_\_\_\_\_\_community the numbers of predators and prey rise and \_\_\_\_\_\_\_\_ in cycles.

*Predators, photosynthesis, primary consumers, food chains, fall, prey, producers, secondary consumers, stable, green plant, producers*

**Task 5: Answer the Questions about the graph below**



1. Which animal is the predator and which is the prey?

2. As the hare population increases what happens to the population of the lynx? Why do you think is?

3. As the lynx population increases what happens to the population of the snowshoe hare? Why do you think is?

4. The population growth curves are said to fluctuate, what do you think this means?

5. Using the graph to help, how many years are there in one fluctuating cycle of the hare population?

6. What factors could be responsible for the unusual number of hare in 1895?

7. A good predator-prey relationship keeps the two populations “in balance”, what do we mean by this?

8. What would happen to the forest environment if the lynx started being hunted for their skins?

9. Challenge: Explain the changes, if any, the introduction of a second predator of the snowshoe hare would have on the predator-prey relationship shown above?