

Home learning activities

Years 7, 8 & 9

Subject
Science
Year Group
Year 7
Unit of work / Knowledge organiser
Ecosystems
Activities
<ul style="list-style-type: none"> • Read through Sections 1-3 of the 'Ecosystems' 'Knowledge Organiser' on 'Habitats', 'Food Chains' and 'Predator Prey Relationships'. • Make careful and detailed notes on Sections 1-3, including writing out the key words from Section 2 and their meanings. • Describe the relationships shown in the graph in Section 3 on 'Predator Prey Relationships'. • Read Sections 4-6 of the 'Ecosystems' 'Knowledge Organiser' on 'Food Webs', 'Overfishing' and 'Invasive Species'. • Makes careful and detailed notes on Sections 4-6, including writing out the 'food chains' in Section 3. • Describe, in detail, what is meant by a 'food web'.
Where do you complete the work?
In Study Books.
What to do if you finish the work? (Extension activity)
<ul style="list-style-type: none"> • Complete 'Test Yourself 1 & 2' sets of Questions.
These websites might help:
<ul style="list-style-type: none"> • BBC Bitesize -> Secondary -> KS3 -> Science -> Biology -> Ecosystems

Year 7—Ecosystems

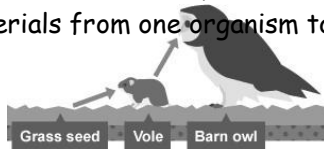
1. Habitats

A habitat is the place where a living thing lives.

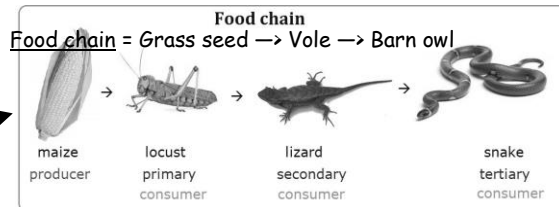
Examples of habitats are: **forest, ocean, desert, meadow, woodland** and **grassland**.

2. Food chains

A food chain shows what eats what in a particular habitat. It shows the flow of energy and materials from one organism to the next, beginning with a producer.



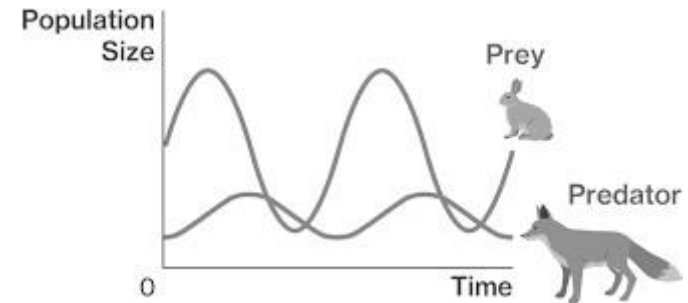
Producer gets its energy from the Sun



Organism	How it gets its energy
Consumer	Feeding on other organisms
Primary consumer	Eating plants
Secondary consumer	Eating primary consumers
Tertiary consumer	Eating secondary consumers
Herbivore	Eating plants
Carnivore	Eating other animals
Decomposer	Feeding on dead and decaying organisms, and on the undigested parts of plant and animal matter in faeces

3. Predator prey relationships

In a healthy, balanced ecosystem the numbers of **predators** and **prey** remain fairly constant. They can go up and down during each year but generally over the years, these increases and decreases remain fairly constant.



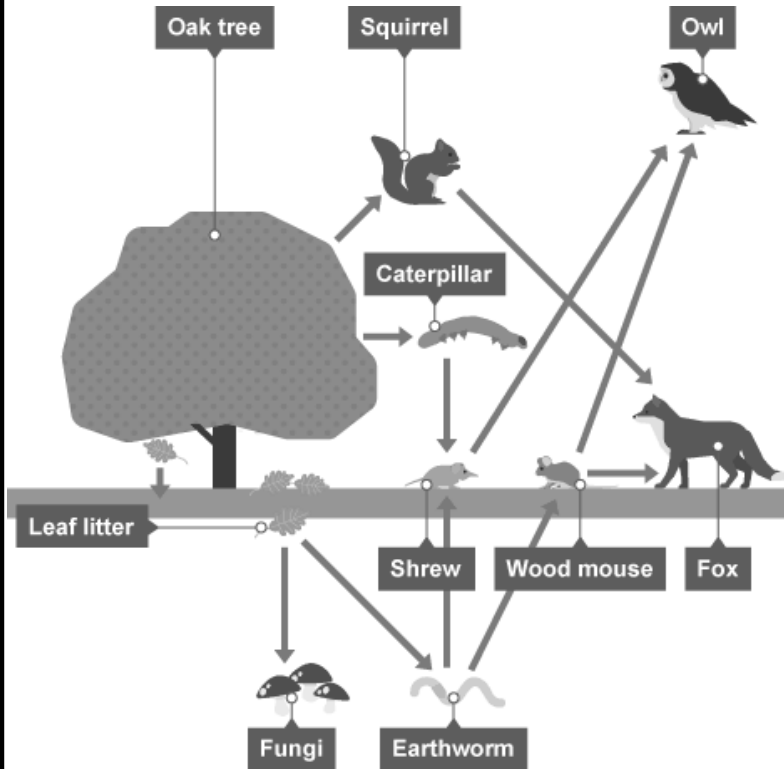
The graph shows that there are almost always more prey than predators. It also shows the following pattern:

The number of predators increase because there are more prey. The number of prey reduce because there are more predators. The number of predators reduce because there is less prey.

Year 7—Ecosystems

4. Food webs

A food web is a network of interconnected food chains. A food web shows the energy flow through an ecosystem.



Here are three food chains from the above food web:

5. Overfishing

We consume huge quantities of fish. Our love of fish and chips in the UK has put great strain on fish stocks in our seas and oceans.

Cod fishing

In recent years, cod has rapidly declined in numbers as improvements in fishing technology and illegal fishing vessels have dwindled supplies. The North Sea is an example of a marine ecosystem where supplies of cod have diminished by nearly 300 per cent since 1963.

To address **overfishing** many countries are adopting a more sustainable strategy for fishing. These include Iceland and New Zealand. Many countries have introduced fishing quotas which limit the amount of fish that can be caught and killed from specific species. The size of the gaps in fishing nets has also been increased to ensure that juvenile fish can reach reproductive maturity and have offspring before being killed.

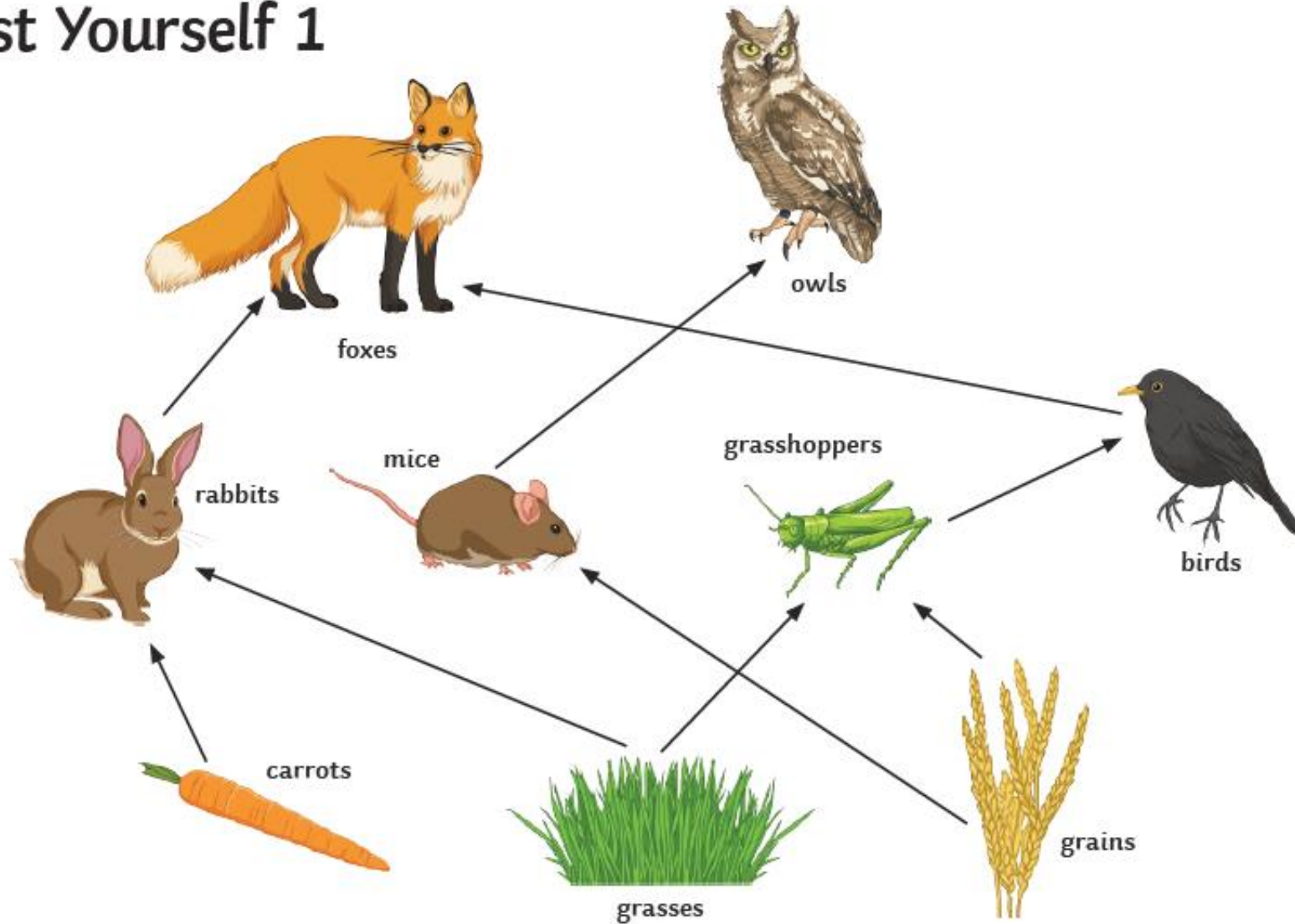
Sustainable—An activity which does not consume or destroy resources or the environment.

6. Invasive species

A species whose numbers grow faster than native species and upset the ecological balance. Invasive species cost the economy an estimated £1.7 billion per year. A good example of this is the grey squirrel, which threatens our native red squirrel and causes significant damage to forestry in the UK.

Another example are the 1930s Australian farmers who had trouble with grubs and beetles eating their crops. They introduced a cane toad from Hawaii to eat them. Unfortunately the cane toad was an alien species to Australia and had no natural predators to control the numbers and the population exploded. It was a predator to a large number of species but not the cane beetle. The cane toad was prey for many predators but it would exude a toxin which killed the predator, it also carried diseases which the native species had no resistance to. This series of events led to a large reduction of biodiversity in the area reducing the population of the yellow-spotted monitor lizard by 90 per cent. To this day, Australia is struggling to control the spread

Test Yourself 1



Using the food web shown above, answer the following questions.

• Name a producer: _____

• Name a herbivore: _____

• Name a carnivore: _____

• What is a consumer? _____

• Draw a food chain that has 4 stages.

• What would happen to the number of grasshoppers if the number of mice decreased?

• What would happen to the number of the rabbits and foxes if a disease killed a lot of carrots?

- What do the arrows show in a food chain? _____

Insecticides were sprayed on the grain to kill insects that eat the crops. Unfortunately, the toxins in the insecticides never leave the food chain and can have serious consequences for those organisms at the top of the food chain.

- What is this an example of? _____

- Explain how the insecticide could kill the owls but not the grasshoppers or mice.
