

# Science

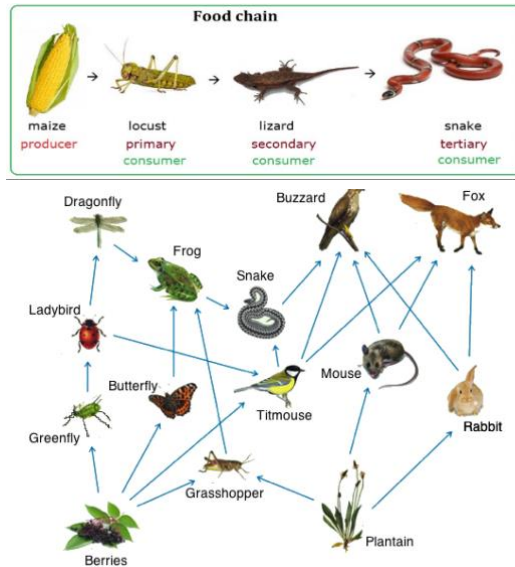
## Animals, including humans Year 4 (food chains/ food webs)

### Remember when:

Animals can be grouped into carnivores, herbivores and omnivores and other ways in which to classify animals. (Y1/Y2/Y3)  
 Examples of habitats (including microhabitats) and the animals and plants that can be found there. (Y2)  
 Plants need sunlight to grow. Living things depend on each other to survive. (Y2)  
 The seven life processes and that nutrition is one of them. (Y3)  
 Nutrition is the life process by which animals get energy. (Y3)  
 How environments are changing. (Y2)  
 Simple food chains. (Y2)

### Sticky knowledge:

- A food chain is a simple way to show the direction in which energy moves from the producer to the various consumers to the top or tertiary consumer.
- When part of the food chain is removed, this has an impact on the other parts of the food chain. The number of some species will increase, while the population of others will decrease.
- The population of tertiary consumers depends on healthy populations of producers, primary and secondary consumers.
- A predator is an animal that kills and eats other animals.
- A food web shows the direction in which energy travels when animals and producers (plants) are eaten by more than one thing it can include multiple food chains where there are multiple feeding relationships.
- Owls regurgitate the undigestible parts of their food. These are called owl pellets and can tell us what an owl has eaten
- Carnivores' teeth are for ripping and tearing whereas herbivores' teeth are more for grinding.



### Key vocabulary

consumer  
 energy  
 food chain  
 multiple  
 species  
 survive  
 predator  
 producer  
 prey  
 population  
 tertiary consumer  
 primary consumer  
 secondary consumer

### National Curriculum:

Construct and interpret a variety of food chains, identifying producers, predators or prey.

### Working Scientifically

- Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
- Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
- Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.
- Make systematic and careful observations
- To use straightforward scientific evidence to answer questions.

### Common Misconceptions

Some children may think:

- the death of one of the parts of a food chain or web has no or limited consequences on the rest of the chain
- there is always plenty of food for wild animals
- animals are only land-living creatures
- animals and plants can adapt to their habitats, however they change
- all changes to habitats are negative.

LO	Knowledge and Skills	Lesson outline
<p>Lesson 1 What is a food chain?</p> <p><b>LO:</b> To construct and interpret a variety of food chains</p> <p><b>Enquiry Type:</b> Grouping, sorting and classifying</p>	<p><b>Sticky Knowledge:</b> A food chain is a simple way to show the direction in which energy moves from the producer to the various consumers to the top or tertiary consumer.</p> <p>A predator is an animal that kills and eats other animals.</p>	<p>Recap from Year 2</p> <p>Glossary of key words linked with food chains.</p> <p><b>STEM habitats and food chains- fox and hedgehog</b> <a href="#">STEM</a></p> <p>LA Matching sentences explaining the food chain using correct terminology.</p> <p>MA- Sentences explaining the food chain using correct terminology.</p> <p>GD Variety of biomes consisting of food chains. Explain the process of food chains using correct terminology.</p>

	<p><b>Skill:</b> Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</p>	<p>Create food chains for various types of animals/ living things exploring different context – use paper chains to demonstrate</p>
<p><b>Lesson 2</b> What affects a food chain?</p> <p><b>LO:</b> To understand how changes in a food chain impacts the rest of the food chain</p> <p><b>Enquiry Type:</b> Research</p>	<p><b>Sticky knowledge:</b> When part of the food chain is removed, this has an impact on the other parts of the food chain. The number of some species will increase, while the population of others will decrease.</p> <p><b>Skills:</b> Recording findings using simple scientific language, drawings, labelled diagrams</p>	<p>Opening question – Does the death of the one part of the food chain have a consequence on the rest of the chain?</p> <p>Repeat paper chain activity to show what happens when a link is broken</p> <p>Children to answer, how would the animals be affected? How do these differences affect the food chain?</p> <p>What might affect the food chains in different environments?</p> <p>Look at similarities and differences in eco systems e.g. arctic then and now considering melting ice and rising sea levels. E.g. Overfishing and the effects on the food chain.</p>
<p><b>Lesson 3</b></p> <p><b>LO:</b> To understand how to interpret food webs</p> <p><b>Enquiry Type:</b> Grouping, sorting and classifying</p>	<p><b>Sticky knowledge:</b> A food web shows the direction in which energy travels when animals and producers (plants) are eaten by more than one thing it can include multiple food chains where there are multiple feeding relationships.</p> <p><b>Skill:</b> Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</p>	<p>Interpret and answer questions on a given food web.</p> <ol style="list-style-type: none"> <li>1. What is the predator?</li> <li>2. What is the prey?</li> <li>3. What are the primary consumers?</li> <li>4. What are the secondary consumers?</li> <li>5. What are the tertiary consumers?</li> <li>6. What happens when the animal dies?</li> <li>7. Name a omnivore, carnivore and herbivore from the food web</li> </ol>
<p><b>Lesson 4</b></p> <p><b>LO:</b> To understand what owls eat and create the food web for an owl.</p> <p><b>Enquiry Type:</b> Observation</p>	<p><b>Sticky Knowledge:</b></p> <p>Owls regurgitate the undigestable parts of their food. These are called owl pellets and can tell us what an owl has eaten</p> <p><b>Skill:</b> Make systematic and careful observations</p>	<p>You will need to buy owl pellets that have been sterilized for this activity. These can be purchased from the Barn Owl Association or from ebay. <a href="#">Guidance Leaflet XX Title (cleapss.org.uk)</a> This is a general dissection document so just pick out the parts relevant to your lesson</p> <p><a href="https://bio.libretexts.org/Learning_Objects/Worksheets/Book%3A_The_Biology_Corner_(Worksheets)/Ecology/Investigation%3A_What_Can_an_Owl_Pellet_Reveal_About_Diet%3">https://bio.libretexts.org/Learning_Objects/Worksheets/Book%3A_The_Biology_Corner_(Worksheets)/Ecology/Investigation%3A_What_Can_an_Owl_Pellet_Reveal_About_Diet%3</a></p> <p>Watch video of owls producing pellets.Link to human digestive system previously covered.</p> <p>Dissect pellets. All to complete identification sheet to identify which animals the bones belong to.</p> <p>Possible research for food web depending upon dissection of the pellet.</p> <p><a href="https://sciencing.com/owl-pellets-6603769.html">https://sciencing.com/owl-pellets-6603769.html</a></p>
<p><b>Lesson 5</b></p> <p><b>LO:</b> To know how to construct a food web</p> <p><b>Enquiry Type:</b> Grouping, sorting and classifying</p>	<p><b>Sticky knowledge:</b></p> <p>A food web shows the direction in which energy travels when animals and producers (plants) are eaten by more than one thing it can include multiple food chains where there are multiple feeding relationships.</p> <p><b>Skill:</b> Reporting on findings from enquiries, including oral and written explanations, displays or</p>	<p>Create a food web for an owl linked to dissection of pellets from previous lesson.</p> <p>LA – Create food chain art: see example <a href="#">17 Cool Ways to Teach Food Webs and Food Chains, In Person and Online (weareteachers.com)</a></p> <p>MA - Create food web from within one habitat.</p> <p>GD - Larger variety of animals within an extended ecosystem,</p> <p>Ext/plenary- think back to the previous lessons- give scenario of one species dying out- what would the other animals in the food chain do? E.g. if mice declined in population, what would owls do? Would they die out or eat other things? What would happen to the populations of those animals?</p>

	presentations of results and conclusions.	
<p><b>Lesson 6</b></p> <p><b>LO:</b> To compare the teeth of carnivores and herbivores and understand their purpose.</p> <p><b>Enquiry Type:</b> Research/ Observation</p>	<p><b>Sticky Knowledge:</b></p> <p>Carnivores' teeth are for ripping and tearing whereas herbivores' teeth are more for grinding.</p> <p><b>Skill:</b> To use straightforward scientific evidence to answer questions.</p>	<p>Investigate animal x rays for teeth/animal skulls. Why have these animals got different teeth to humans?</p> <p>Relate to food chains/webs and the food they know that each animal eats- what does a lion eat? What types of teeth would you expect them to need most? What does a cow eat? What types of teeth would you expect them to need most? Then look at the skulls and xrays to see if they were correct.</p>
Working towards	<p><b>End of unit assessment</b></p> <p>Working at Age related expectations</p>	Working at a greater depth