# *Feeding relationships* **Teacher background notes**

**In this investigation, students explore and develop models of food chains and food webs to represent and analyse the flow of energy through ecosystems and explore the impact of changing components within these systems.**

## [Australian Curriculum: Science links](https://assist.asta.edu.au/resource/4154/feeding-relationships-year-7-cle)

## Learning intentions

Students will be able to:

* recall that the Sun is the source of all energy in a community;
* describe the role of producers, consumers and decomposers in a community;
* identify animals as being herbivores, carnivores or omnivores from their usual diets;
* draw a simple food chain to show feeding relationships between animals and plants;
* construct and interpret food webs to demonstrate relationships in a community;
* describe how living things can cause changes to their environment and impact other living things;
* collate and summarise data from different sources;
* communicate their ideas using scientific language and appropriate representations.

## Suggested time for this CLE

The time needed to complete the *Feeding relationships CLE* will depend on the depth of the prior knowledge of students, the time to perform the three investigations—'Investigating feeding relationships 1', 'Investigating feeding relationships 2' and 'Investigating the effect of introduced species'—and follow up with any further extension activities. Allow 4–8 hours.

## Prior conceptual knowledge

No prior learning of content relevant to this CLE has been covered prior to Year 7.

## New concepts to be introduced

Feeding relationships between organisms in a community can be represented by food chains. Food chains shown the sequence in which organisms feed on each other and the direction of energy flow.

Each organism in a food chain occupies a feeding level. All organisms in a community can be classified according to their feeding level.

e.g. producer consumer decomposer

The terminology for feeding levels and food chains can sometimes be confusing as there are a number of different terms that can be used to describe an organism’s position in the food chain.

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **Grass** | **🡪** | | **Grasshopper** | **🡪** | **Bird** | **🡪** | **Cat** |
| Producer | |  | Consumer |  | Consumer |  | Consumer |
|  | |  | Herbivore |  | Carnivore |  | Carnivore |
|  | |  | 1st-order consumer |  | 2nd-order consumer |  | 3rd-order consumer |
|  | |  | Primary consumer |  | Secondary consumer |  | Tertiary consumer |

Feeding relationships in a community are more complex than a linear food chain. Many organisms have more than one food source and are therefore members of a number of different food chains. These food chains interconnect to form food webs.

Human activity, such as introducing non-native species to an area, can upset the balance in a community. In Australia, there are many examples of where introduced species have resulted in many of our native organisms becoming threatened or eventually extinct.

## Possible misconceptions

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| **STUDENTS MAY THINK…** | **INSTEAD OF THINKING…** |
| Food chains involve predator and prey, but not producers. | Producers are an essential part of all food chains and webs. |
| Food webs are as simple food chains. | Food webs actually show the flow of energy and the complex set of relationships in a community. |
| Higher-order consumers eat everything that is lower in the food web. | Higher-order consumers eat some, but not necessarily all, of the organisms below them. |
| Decomposers release some energy that is cycled back to plants. | Decomposers break down dead organisms, returning nutrients to the soil so they available for plants to use. Carnivores eat some decomposers. |

## Links to further information

‘What is a Food Chain?’, BBC KS3 *Bitesize Science* website, <https://www.bbc.co.uk/bitesize/topics/zcyycdm/articles/zww9r2p>  
Includes a video, information texts, activities, a quiz, and challenges

‘Biodiversity’, Australian Government Department of Environment and Energy website, <https://www.environment.gov.au/biodiversity>

Australian Government Department of Environment and Heritage. 2004. *Invasive species in Australia,* Department of Environment and Energy website, <https://www.environment.gov.au/system/files/resources/2bf26cd3-1462-4b9a-a0cc-e72842815b99/files/invasive.pdf>