

# Burrowing Crayfish

## 5. Aquatic Food webs



### What is a food web?

### How do living things depend on each other?

### What are feeding relationships in freshwater?

#### Lesson Overview:

In this activity the students learn about food webs. A food web shows the feeding relationships that exist in ecosystems. The students investigate feeding categories of herbivores, omnivores and carnivores in an aquatic ecosystem. Students use creature cards and string to connect the feeding relationships between the living and non-living parts of an ecosystem. The students create an interactive food web to visually show the interdependent relationships that exist between living things.

**Key concepts:** Ecological relationships, food webs, interdependence.

**Teaching strategies:** 5 E model, mini conferencing, group interactive strategies.

**Equipment & Resources:** Digital camera, 3 different coloured Strings, creature cards.

**AUSVELS Curriculum Linkages:** Level 4 biological science: Living things depend on each other and the environment to survive.

#### Activity Sequence:

**1 hour**

- Engage:** watch the short YouTube clip about wetlands and the animals that live in them and how they interact.  
**Create by Melbourne Water:**  
<https://www.youtube.com/watch?v=4nJgIBeux6Y>
- A creature card is given to each student as the session begins.
  - Discuss the different feeding groups for aquatic creatures; define each of the 5 key consumer groups Autotrophs (sunlight converters) herbivores (plant consumers), omnivores (plant and meat consumers), carnivores (meat consumers) and detritivores (decomposed plant and animal material consumers).
  - Discuss the concept of a food chain: A linear progression of consumption starting with high order consumers progressing to autotrophs (algae) or detritivores (decomposing animal/plant material).
- Explore:** Divide the students into small groups of 5. Allow time to read the creature card and work out:
  - The type of feeding group that the creature would belong in (herbivore, carnivore etc).
  - What they consume in the feeding group.
  - In these groups the students are to organise themselves in a food consuming chain.
  - Visit each group to see the food chain creatures and feeding order they have created.
- Explain and Elaborate:** The students are to work out the relationships that exist when a single food chains become part of a food web.
  - Join 2 groups together that have identified their food chain feeding order.
  - Give the string to the group explaining: One end of the string is given to an autotroph (plant or algae) and the other end of the string is left for another creature to eat or consume.
  - The students form a long food chain with many of the same creatures found at a similar spot on the string.
  - Introduce second and third strings of a different colour where these junctions occur. Ask the students to link together to form a web. (This is a difficult task, it is designed to demonstrate the complexities of a food web, be flexible and allow some creative discussion as the web is created)

5. **Evaluate:** Look at the web that you have created. Did it work? How is it structured? What happens if we remove one of the creatures? What happens if we remove an plants? Take photographs of the food web for a class record. Discuss and record your answers to these questions in your learning journal.

**Teachers working example:**

*This is a dynamic activity. The interactive nature of the activity creates a busy class room, carefully group your students in effective working teams (ask student who are not participating correctly to sit out of the activity as it can change the dynamics of the activity greatly if they interrupt the flow of the activity). Ensure that you start off the session by clearly defining the feeding relationships and the consumer feeding groups (herbivore, carnivore and omnivore).*

*The first part of the session is undertaken in small groups of 5 so that all students are switched onto the creature and the feeding relationships. By adding groups together you are creating a more complex relationship. This is a student led negotiated by the groups, allow space for discussion and debate and watch how your students organise themselves. The additional strings are added as the group progresses and are clearly identifying the correct concepts. Take photographs to record this activity it is a valuable tool for evaluation and to record the process. Choose one food web as an example provide discussion time and focus on the web, ask questions of the students in the web, actively involve them in the process and ask for sound explanation of what they are trying to achieve: Did the web work? Who is in the right spot? Who is a carnivore, herbivore or omnivore? How could we improve the web? What happens if I remove one of the species in the web? How does this affect the structure of the food web?*

*Creatures:*

*Carnivores: Fish, platypus, bird. Herbivore: snails, diving beetle.*

*Omnivore: scuds, shrimp, stick caddis, yabby. Detritivore: crabs, burrowing crayfish, dragon fly larvae. Primary producer: (organism that creates energy from the sun) algae, aquatic plants. Detritus: organic matter that has died or began decomposition.*

*Example of food web combinations:*

*Fish → snail → scud → algae*  
Carnivore                  herbivore                  omnivore                  producer

*Platypus → yabbies → plants aquatic*  
Carnivore                                  omnivore                                  producer

*Fish → dragon fly larvae → algae*  
Carnivore                                  omnivore                                  producer

*Birds → Fish → scuds → detritus*  
Carnivores                                  omnivore

*Burrowing Crayfish → Roots of plants*