**Constructing diagrams of food chains**

**Levels:** 3-4 **NoS achievement aims:** Communicating in science

**Topic:** Rocky Shore **Contextual strands:** Living world

**Rationale**

The living things in a community interact with each other.

Constructing food chains allows students to develop models of feeding relationships in communities. This will contribute to students’ developing understanding of the conventions of how the natural world is represented in science.

**What you need**

* Pictures of a variety of living things found at the rocky shore (or other chosen environment).
* Information about the living things found in the environment, and their lifestyles.
* Sets of blank cards colour-coded to represent different types of feeders (for example, green for producers, brown for decomposers, red for carnivores, yellow for herbivores).

**Focus**

* How can we find out what eats what in this community?
* Why is it important to know what eats what in this community?
* How could we show feeding relationships?
* How do scientists show them?
* What do the arrows in a food chain mean?

**Exploration**

1. Discuss the construction of food chains starting with a producer (plants and/or seaweeds and other algae relevant to the environment type), followed by a herbivore, and so on. Note: Make sure the students understand the conventions of showing the direction of energy flow in food chains.
2. Introduce the coloured cards to illustrate a food chain.
3. Help students use appropriately colour-coded ‘feeder’ cards to write the name of each living thing they have identified in the chosen environment.
4. Encourage them to lay out the cards in appropriate patterns to create as many (theoretical) food chains as possible.
5. Get students to use research material and their own experiences to check whether the food chains that they create could actually occur in the chosen environment. (Record any questions this raises for subsequent research.)
6. Introduce some simple scenarios for the groups or class to explore in discussing the consequences of change, for example:
   1. What would happen if there were no producers?
   2. What would happen if we took away most of the yellow cards (herbivores)?
   3. Would it matter if we took away all the carnivores? (Students may not realise that this will impact on the needs of other things by allowing unchecked growth of populations that the carnivores usually keep down.)

**Reflection**

* Did using the coloured cards help you to find a pattern?
* What do all food chains start with?
* Why can’t you just construct any food chain you want?
* What do you notice about the placement of plants in a food chain?
* How would you go about building a food chain with you in it?
* What are the main things you have learned about food chains in nature?
* Scientists can’t ever see a food chain in a community but make models to show the feeding relationships. How could scientists make use of these models?
* What do food chains show? What don’t they show?