Lesson 4: Eat or Be Eaten

(Food Web game adapted from Mystery Science)

Subject
Intertidal zones and food webs

Materials/Teacher Preparation

- Eat or Be Eaten Cards (one set of cards per 2-4 students)
- Eat or Be Eaten Instructions (can be put on overhead projector)
- Score Cards (one per student)

Size/setting/duration
Entire class/Indoors/30 min

Background
The intertidal zone has a complex food chain which creates many interdependent relationships.

The Eat or Be Eaten activity was adapted from Mystery Science Web of Life Lesson 1. For more information, watch this video.

Overview
Target:

- I can describe the flow of energy through a local intertidal food chain
- I can describe organisms that live in the four intertidal zones (spray, high tide, middle tide, low tide) of our local Salish Sea.

Success Criteria:

- Students create an intertidal food chain and accurately describe the trophic level of each organism within the chain. Students explain how energy moves through the chain.

Procedure

1. Eat or Be Eaten Card Activity (30 min)
    a. Goal of the Game: Make as many cards as you can into food chains AND make

those food chains as long as you can.

b. How to play
    i. Shuffle the deck and pile the cards in the center, face down.
    ii. On the first round, players take turns picking a card from the pile & reading the card aloud.
    iii. On each subsequent turn, a player has a choice. They can choose a card from the pile or steal a card from another player.
    iv. Important Note: Once a card is linked in a food chain, it can't be stolen. Putting cards in a food chain protects them.
    v. The game continues until all the cards are used or you run out of class time.
    vi. At the end of the game, each player tallies their score using their Eat or Be Eaten scorecard.
c. Rules for Scoring
    i. You get 1 point for every card in a food chain.
    ii. Food chains of four or more cards get 2 bonus points.
d. Note: We encourage players to reason from the descriptions on the cards. For example, the cricket eats dead leaves and the oak tree produces leaves. Though the oak tree card doesn't say that there are dead leaves under the oak tree, a player may contend that there are leaves under the tree to provide food for the cricket and make a food chain.

Next Generation Science Standards

Performance Expectations		
5-LS2-1: Develop a model to describe the movement of matter among plants, animals, and decomposers, and the environment 5-ESS2-1: Earth Systems. Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact		
Scientific and Engineering Practices	Disciplinary Core Ideas	Cross-cutting Concepts
Developing and using models	LS2.A Interdependent Relationships in Ecosystems ESS2.A Earth Materials and Systems	A system can be described in terms of its components System and System Models

Other Standards

ESE2: The Natural and Built Environment. Students engage in inquiry and systems thinking and use information gained through learning experiences in, about, and for the environment to understand the structure, components, and processes of natural and human-built environments.

Graphics

Eat or Be Eaten Cards

Vocabulary

- food chain - a hierarchical series of organisms each dependent on the next as a source of food.
- Nutrients - a substance that provides nourishment essential for growth and the maintenance of life.
- Photosynthesis - the process of using sunlight to synthesize foods from carbon dioxide and water.

Extension

- Eat or Be Eaten Advanced Play: Making Food Webs Players may realize that some of their food chains could be connected to form a network of interlocking chains — that is, a food web. If your group realizes this and if you have time, ask them to see how many chains they can connect in a food web.