Lab: Coastal Food Web

Objectives: Identify members of the coastal chains and web.
Label food web members as plants or animals (herbivores, omnivores or carnivores).
Construct coastal food chains and webs.

Background: All life systems depend on green plants which use radiant energy to produce glucose, fats and proteins. They are the ultimate food sources for all life. Green plants produce glucose. Animals must obtain energy from either plants or other animals. Animals that eat plants are herbivores. Animals that eat other animals are carnivores. Animals that eat both plants and animals are omnivores. Even organisms that break down dead plant and animal material get their food directly or indirectly from plants. Plants and animals are linked by food relationships and form food chains. Food chains link together to form more complex food webs. Decomposers are members of the web because when animals and plants die their decomposed forms are broken down into essential nutrients that are used by the green plants.

Procedure Lab Part 1:

1- Acquire a Coastal Organism card. This card has one coastal organism on it.
2- Within your assigned group (either group A or group B), create a food chain that includes yourself and four other organisms. Work together to ensure that everyone in the group creates an appropriate food chain. This may mean that you help multiple other groups create their food chain.
3- Answer the analysis questions for Part 1.

Part 1 Lab Analysis Questions: 1- My Coastal Organism Card was: _____

2- Draw your food chain. Include organisms that were involved in at least ONE of your food chains. Label the trophic level of each organism.

3- What type of organism is required as the basis of all food chains? Explain why they are so important.

4- What role did your organism play in the food chain that you created above? Where do they get their energy and to whom do they provide energy to?

5-Describe the flow of energy in a typical food chain. How does this coastal food web differ from the oceanic food webs that we have analyzed in the past?

Procedure Lab Part 2:

1- Within your designated group (either group A or group B), stand within a circle.
2- We will use yarn to represent the links between organisms. Starting at one random organism, holding the end of the yarn, GENTLY toss the yarn ball to an organism that you have a direct connections with (either you consume them or are consumed by them). Continue linking organisms until you have created a thorough visual of the interactions of the coastal organisms. Think about what would happen if one of these organisms became extinct.
3- Answer the analysis questions for Part 2.

Part 2 Lab Analysis Questions:

6-Using the Food Web created by the group, connect all of the organisms on the coastal food web below.
(Organisms Used in this Lab: dinoflagellates, mullet, blue crab, seagrass, osprey, striped bass, flounder, stingray, crayfish, diatoms, shrimp, algae, great blue heron, human, oyster, dragonfly nymph)

7-Pick one organism from the food web above and discuss the flow of energy to and from that particular organism. You are welcome to use sketches to represent the type of organism that you are discussing.

8-Create at least a five organism food web from the Sydney Harbor scene of *Finding Nemo*.