

Suited For Survival



Objectives

Given a particular marine environment, the student will be able to research that environment and create a new species (plant or animal) with adaptations that suit the species for the environment. The student will be able to predict how this new species might affect the ecosystem into which it is introduced.

Materials

For each student or student group:

- paper
- markers/colored pencils
- reference materials and/or Internet access
- modeling clay or papier mâché materials

For class:

- 3' x 5' cards with marine environments written on them (for example, deep sea, rocky intertidal, coral reef, kelp bed, open ocean, deep-sea thermal vent, sandy beach, etc.)

Action

1. Divide the class into small groups. Give each group a card naming a particular marine environment (or let the students choose their own). Students research and write information about their environment including temperature, depth, topography, and plants (algae) and animals that live there.
2. Have students brainstorm and list essential adaptations for a new species that they “create.” Consider the species' role in the ecosystem.
 - Where does it live?
 - What and how does it eat?
 - What eats it?
 - How does it avoid predators?
 - How does it reproduce?
3. Students sketch their new species. They label and describe the purpose of each adaptation. (If time allows, students may want to create a 3-D image of their animal with clay or papier mâché.)
4. Discuss the following questions with your students:
 - What effect would introducing this species have on the rest of the ecosystem?
 - Would any of the existing species' populations suffer?
5. Have students construct a food chain or food web including their newly introduced species.

Deeper Depths

Repeat activity using land-based environments such as rain forests, savannahs, grasslands, jungle, etc. Students should research plants and trees of the area, rainfall, terrain, and temperature. Design the new animal answering the same questions posed for the marine animal. If students do both marine and terrestrial adaptations, compare the results. What differences in the environment cause differences in animal adaptations and appearance? For example, the buoyancy of water in marine environments vs. the pull of gravity in terrestrial environments.