

# A Fishy Twist On Adaptations

Christine Luttenegger

## Summary:

"A Fishy Twist on Adaptations" is designed to allow students to think about specific adaptations and how they pertain to the survival of the individual and, ultimately, the species. Students design a fish based on certain criteria (adaptations) and determine the type of habitat that would be best suited for their fish's survival. After drawing the fish and its habitat, students exchange habitats with another group and must first decide and then explain if their fish could survive in the new environment.

## Materials:

- \_Either use their notebooks or butcher paper or drawing paper
- \_markers/colored pencils, scissors, and tape
- Set of teacher-produced body part adaptations.

## Prior Knowledge:

This works well if used after introducing adaptations and at the beginning of natural selection.

**Vocabulary:** adaptation, species, natural selection, habitat, niche, descendent

# Teacher instructions

- 1. Students should be divided into groups of three or four.
- 2. Each student will need their notebook or two sheets of drawing paper-a smaller piece may be used for the fish, a larger piece for the habitat.
- 3. Each group must randomly choose one of each of four adaptations for body shape, coloration, mouth and feeding strategy and means of reproduction. It is helpful to enlarge the adaptation sheet, photocopy on cardstock and then laminate and cut out the individual cards from which students may select. These may then be reused in the future?
- 4. Allow students to design and draw the fish and its environment (approximately 30-40 minutes). Students draw, color and cut out their fish separately from the habitat so that they can exchange habitats later. When all groups are finished, have each group share with the class their fish, explaining adaptations and why the fish is well-suited to the environment.
- 5. After sharing this information, have the groups randomly exchange habitats with each

other. Each group must then discuss among themselves and answer questions pertaining to the fate of their fish in its new habitat. Could it survive and why

# A Fishy Twist On Adaptations

## *Introduction*

Does the coloration of an animal affect its chances for survival? Do feeding mechanisms alter an organism's chance of living? How would an organism's reproductive strategy affect the individual? How would it affect the species? Throughout time, people have marveled at the great amount of diversity found in nature. It is adaptations, however, that have led to this vast array of variation and which have resulted in the enormous variety among species. In this activity, you will be studying the effects that an adaptation, any feature that increases an organism's reproductive success (fitness) in its environment, has on a fish's success in different habitats.

## *Procedure*

- 1. Randomly choose one of each type of adaptation for fish-jaw shape, body shape, coloring and reproductive strategy-before designing your fish.
  - a. List and describe your fish's specific adaptations.
  - b. In what type of habitat would your fish be best suited for survival?  
(Be specific) *Explain* your reasons.
- 2. Using the paper and pencils provided, design, color, and cut out one fish showing all of the four adaptations.
- 3. Assign your fish a scientific name and a common name. Write both in the space below and on your fish.
- 4. On the right side of your notebook, draw and color the *habitat* in which your fish would be well suited for survival.
- 5. Explain to your table how your fish is adapted for this particular environment.
  - a. Which adaptations are most important to your fish's survival in this habitat? Why?
  - b. Do any adaptations seem inconsistent with each other? (Are they contradictory?) *Explain*.
- 6. Trade habitats with another person, keeping the fish you designed.
- 7. Place your fish in the new environment and reevaluate the probability of success for your fish.
- 8. Answer the questions on the back of this page then turn in both your fish and its *original* habitat.

*Analysis Questions*

- 1. How do adaptations increase the likelihood for an animal's survival?

---

---

- 2. List and justify any adaptations which will *limit the success* of your fish in its new habitat

---

---

---

- 3. List and justify any adaptations that will *enhance the success* of your fish in its new habitat.

---

---

---

- 4. Which adaptation is most important for the survival of the individual fish? Explain your reasoning.

---

---

---

- 5. Which adaptation is most important for the survival of your fish's species? Explain your reasoning.

---

---

---

- 6. What role do adaptations play in Darwin's Theory of Natural Selection? (Be specific)

---

---

---

---

---