K-2 Life

Southern Nevada Regional Professional Development Program

Goldfish Unit

INTRODUCTION

Young children love to get up close and learn about animals in the world around them. Goldfish are one of the hardiest and easiest aquarium fish to care for. Students will find them captivating and get pleasure from observing them. All you need to get this unit started is an inexpensive plastic container or fishbowl, fish food, and two goldfish.

WHERE'S THE SCIENCE?

Fish have been around for more than 300 million years. There are more kinds of fish than all other kinds of vertebrates put together; three out of every four vertebrates are fish.

Most goldfish are orange however they can also be white, black or multicolored. A goldfish is streamlined to move through the water. They have two eyes, one on each side of the head, as well as two nostrils for sensing their environment through smell, and a mouth located in the front of the head. Behind the head are two gill covers that open and close. The goldfish has a dorsal fin on its back and a tail fin, along with two pairs of fins located behind the gills-two pectoral fins and two ventral fins. The entire body of the goldfish

is covered with scales to protect it. It is impossible to tell if a goldfish is a male or female.

MATERIALS

- 2 goldfish (select 2 goldfish that look very different from each other)
- 1 Fishbowl or plastic container
- Goldfish food
- Aquarium plant (for lesson # three)
- Science notebooks
- Chart paper

PROCEDURES

Lesson One: Goldfish Structures

Note: You will need to set up the aquarium before this lesson. Fill with regular tap water and leave uncovered, then set aside for at least 24 hours to dechlorinate the water. You should also prepare a second source of water to be used weekly to change about one-third of the water to promote a clean healthy oxygenated habitat. After purchasing the goldfish place them in the water in the bag that was provided for transportation. Let the fish and bag float in the water for approximately fifteen minutes to balance the temperatures before releasing the fish.

1. Tell the students that today you have brought in an animal for them to observe. Show the students the class habitat and ask them if they have ever seen a fish before. Next ask them what they think they already know about fish and chart responses.
2. Tell the students that today they will be observing goldfish and their job is to find out what they look like. (L2D1) Send small groups of students to the science center to observe the fish more closely. Visit the center and ask the students to find the head, mouth, tail, eyes, fins and gills.
3. Once everyone has had a chance to visit the science center, call the students to a group area and place the goldfish habitat on a table where everyone can see them. Discuss what the

students noticed and add to the group chart using a different color marker to illustrate what they learned by observing. You should also begin a question board charting any questions students generate.

4. After all the students have observed the goldfish, call the class over to a group area and place the habitat on a table. Allow students to share observations and add responses to the class chart.
5. Tell the students that they will each be getting a science notebook to record their goldfish observations in. Today they will need to draw a sketch of one of the goldfish. Model for the children how to draw a goldfish with their input on a large piece of chart paper.
6. Pass out science notebooks to the students and send them back to their tables to draw a sketch of a goldfish in their science notebook. As students work, move from table to table making sure that they are including the basic structures of a goldfish: body, fins, gills, eyes, mouth, and a tail. (L2D1)
7. As students finish their sketches have them return to the group area with their science notebooks. Once everyone is finished have them share their science notebooks with a partner and tell their partner one thing they learned about goldfish today.
8. Close the lesson by asking a few students to share out what they learned and add to the class chart.

Lesson Two: Feeding Goldfish

1. Call the students to the group area and review the body parts of a goldfish as you list them. Next ask the students to compare their body parts as you list them. Ask: Do you have a head, mouth, tail, eyes, fins or gills? If not, why not? What do you have that goldfish don't have? Behind both lists, write what each body part is used for. Example: eyes-see (L2B1)
2. Introduce the term "habitat". Tell the students that a habitat includes water, food, shelter, and space. Our habitat includes

everything but food. (L2C2)Therefore today we will be feeding the goldfish. Explain that their job is to closely observe the habitat as you feed the goldfish to observe where they eat. Do they eat at the top, middle or bottom of the habitat? How do you think the goldfish find their food?

3. Pass out science notebooks and instruct the students to draw a sketch of the goldfish eating to show where they eat in the habitat.
4. Close the lesson by reviewing the structures of a goldfish and sharing out what they learned today

<u>Lesson Three</u>: Goldfish Behavior

1. Call the students to the group area and place the goldfish habitat on a table where everyone can see it.
2. Review and compare the body parts lists from lesson two. Discuss how our habitat is different from a fish. Why do we need arms and a fish needs fins, etc…? Share and chart responses on chart from lesson one.
3. Ask the students to closely observe how the fish move. What part of the body allows it to move? Does it move forward, sideways, backwards, or up and down? Do they always move around? Do they seem to prefer a certain area in the habitat? Share and chart responses on chart from lesson one.
4. Add an aquarium plant to the habitat and observe how the goldfish respond. Next add a simple aquarium structure purchased from a pet store and observe how the goldfish respond.
5. Pass out science notebooks and instruct the students to sketch the habitat with the new items (plant and structure) and draw where the goldfish like to be in the habitat.
6. Once everyone is finished call the students back to the group area to share out their science notebooks.
7. Close the lesson by sharing out what students learned about goldfish behavior today.

***Lesson Four*: Compare and Contrast Goldfish**

1. Call the students to the group area and place the goldfish habitat on a table where everyone can see it.
2. Place a piece of chart paper on the board near the habitat and draw a Venn diagram on the sheet. Ask the students how the goldfish are the same and how they are different. Chart responses. (L2A2)
3. Pass out science notebooks and instruct the students to sketch at least two ways to illustrate how the goldfish are different. Example: One stays by the plant the other likes the boot. One eats at the top and one in the middle. One is orange and one is orange and black.
4. Once everyone is finished, close the lesson by calling the students back to the group area and sharing out science notebooks.

Additional Resources

http://www.meer.org/generalized-fish-body.html
This site contains a diagram of fish in general.
http://scionn.mcb.arizona.edu/formfish/form_fish.html
This site explains what each of the body parts are used for.
http://faculty.washington.edu/chudler/amaze.html
This is an amazing site containing information regarding how various animals use their senses.
Observing an Aquarium, Delta Science Readers
http://www.delta-education.com
In the Delta Science Reader *Observing an Aquarium***, students read about the plants and animals that live in an aquarium. They learn about the life cycle of fish. They find out about the different body parts that make fish well adapted to living in water. They also read about the job of an**

aquarium scientist. Finally, students observe different types of water habitats.

Nevada State Standards

L2A2 Students know differences exist among individuals of the same kind of plant or animal. E/S
L2C2 Students know a habitat includes food, water, shelter and space. E/S
L2C3 Students know living things are found almost everywhere in the world. E/S
L2D1 Students know plants and animals can be sorted by observable characteristics and behaviors. E/S
N2A1 Students know how to make observations and give descriptions using words, numbers and drawings. E/S
N2A2 Students know tools can be used safely to gather data and extend the senses. I/L