

Counting on the Stream

WHO IS IT FOR?

- ◆ Young Scientists . . .
- ◆ Evolving Mathematicians . . .
- ◆ Emerging Linguists . . .
- ◆ Sprouting Historians . . .
- ◆ Budding Artists . . .

TARGETED LEVEL:
(Kindergarten)

THE CHALLENGE:

The students will . . .

- ⇒ recognize and begin to analyze the differences between living and non-living things.
- ⇒ begin to recognize characteristics of a pond and of aquatic plants and animals.
- ⇒ learn about ecosystems.

SAFETY ISSUES & CONCERNS:

- * Students need to demonstrate care with sharp objects and writing utensils.

WHAT'CHA NEED?

4. Student Counting Books.
5. Colored pencils or crayons.
6. Books from the library about aquatic plants, animals and insects.
7. Brown paper bags (1 per child)
8. Green construction paper.
9. Glue

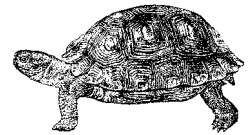
TIME NEEDED FOR THE ADVENTURE:

Minimum of 45 minutes.

Post-visit Activity

The children interacted with a wide variety of organisms at the Elm Fork Education Center (EFEC). More than likely their *journals* will contain pictures of turtles, frogs and/or tadpoles, butterflies, birds, dragonflies, fish, aquatic plants, trees, mosquitoes, snails, rocks, bronze statues, etc. This post-visit activity will be centered on extending their observations and encouraging the children to analyze their findings. It will also involve encouraging the children to find out more about the organisms and/or objects that they chose to include in their journals.

For reference, some brief information is included below about a few of the above listed organisms that the children may have drawn in their *journals*. The children may find others that are not discussed below. Teachers are encouraged to find books or information about the children's other discoveries in order to help the children understand some basic information about their finds.



Turtles: Turtles live in ponds, however, they lay their eggs on the edge or shore of the pond. A turtle's diet usually consists of dead or decaying plant and animal matter. By eating this decaying material, turtles help keep their ponds clean.



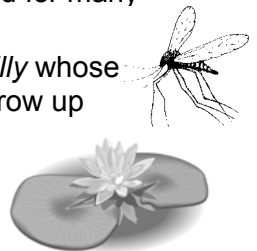
Frogs: As tadpoles, frogs have gills and breathe under water. As adults, frogs lose their gills and use their lungs to breathe the air above the water. Because of this change in the frogs' life, the pond is absolutely the most perfect environment for it to live.

Dragonflies: Dragonflies have very strong wings that allow them to move quickly across the pond water to catch its food – insects. They can spend hours in the air, mate in flight, and lay their eggs on pond plants.



Mosquitoes: Mosquitoes depend on the pond for its food and in order to lay its eggs. More importantly, mosquitoes are the food for many of the organisms that live in and around the pond.

Aquatic plants: A main staple of any pond is the *Water Lilly* whose roots grow into the bottom of the pond but whose pads grow up through the water and rest on its surface. Many organisms rely on water lilies. Frogs will sit on them and wait for their food to fly by (insects). Snails will lay their eggs on the underside of the pads and scrape food off of their surfaces. Others use the Lilly pads as protective cover to hide from those organisms that might want to eat them.



Rocks: Rocks, stones, dirt, etc., are all nonliving aspects of the pond that have vital importance. They help provide form and structure for the pond; they provide shelter, places for reptiles to bask in the sun, space to hide, and room to lay eggs.



WORDS TO KNOW?

9. Aquatics
10. Biology
11. Ecology
12. Ecosystem
13. Habitat
14. Pond
15. Stream
16. Waterfall

DID YOU KNOW . . .

Frogs are smooth skinned with long, powerful hind legs?

Tree frogs have toes with enlarged tips?

Tadpoles are the well-known larvae of frogs and toads and are completely aquatic?

Red-eared Turtles (Sliders) are the most familiar pond turtle and are instantly recognizable as soon as it stretches out its neck? (There are red stripes behind its eyes!)

EXTRA STUFF?

Related **books/stories** and on-line sources:

Fleming, *In The Small, Small Pond*.

Kalman, *What Is An Amphibian*.

TEKS

CONNECTIONS:

Science TEKS - Kindergarten:

K.2 (A) – Students will ask questions about organisms, objects, and events.

K.4 (B) – Students will make observations.

K.8 (A) – Students will identify a particular organism or object as living or nonliving.

K.8 (B) – Students will group organisms and objects as living or nonliving

K.9 (A) – Students will identify basic needs of living organisms.



PROCEDURES:

Ready, Set, Go. . . .

1. Instruct the students to take out their journals and their crayons and/or colored pencils.
2. Encourage the students to color the pictures that they drew while they were at EFEC.
3. As the children are working in their journals, begin a discussion with them about the various organisms that they discovered on their adventure.
4. Ask if they know anything about any of the organisms that they included in their journals.
5. Explain to the students some of the characteristics that these organisms share, and some of the differences among them. For instance, both frogs and dragonflies lay their eggs in the water, but frog eggs, once hatched are called tadpoles and look very different from hatched dragonfly eggs, which are known as nymphs.
6. Explain some of the basic similarities and differences between frogs and turtles. For instance, frogs lay their eggs in the water and turtles lay their eggs on land. Baby frogs breathe underwater, but baby turtles look like smaller versions of the adult, right from birth.
7. Continue with the discussion, allowing it to run its course.
8. At the end of the discussion – host a Turtle Parade for the students.
9. Provide each student with a brown paper bag on which you have drawn a yellow plastron (lower shell) on the front and a green carapace (upper shell) on the back. The tail, made from construction paper cut in the shape of a long “V” can be glued onto the bottom of the carapace.
10. Cut holes in the bags to allow for head and arms.
11. Allow the students to parade around the room doing their best imitations of turtles.
12. Have a turtle race in which the winner is the one that goes the slowest!

Assessment:

Journals



The Bottom Line: The students will be able to use their senses and observational skills in order to recognize and analyze the differences between living and nonliving things.