Activities based on the book *Jo MacDonald Saw a Pond* - by Mary Quattlebaum

Dragonfly Tales

Introduction

In the book *Jo MacDonald Saw a Pond*, author Mary Quattlebaum introduces children to the planets and creatures of a pond ecosystem. In this activity and its related connections, children focus on the green darner dragonfly and dramatize, draw, and write about its growth cycle and pond experience.

Materials Needed

- Several pieces of paper
- Colored markers or Crayons

Key Concepts

- The environment must supply the needs of organisms.
- Plants and animals have life cycles.
- Each organism has different structures for different functions.

For standards correlation please see our website.

Procedure

1. Ask chidren to find the dragonfly in every picture in the book. What is it doing?
2. Explain that although the book's pictures only show the adult dragonfly, the dragonfly's life cycle includes three stages of growth: eggs, larvae (called *nymphs*), and winged adults. (This information is included in the *Green Darner* description at the back of the book.)
3. Show children pictures of these three stages from other books or the internet. How do the eggs, nymphs, and dragonflies move? What body parts allow them to move that way? What do they eat?
4. Have children act out the different stages (still eggs, swimming nymphs, flying adults).
5. Ask children to draw a picture of each growth stage.
6. Invite children to write and illustrate a story about the adult dragonfly. What does it see at the pond? What other creatures does it meet? What does it do when it meets a predator, like a hungry fish?

Nature Connections

- Invite children to write and illustrate a story from the perspective of a hungry fish that is looking for something to eat. What does it see at the pond? What creatures does it meet? What does it do when it sees a dragonfly?

- The Green Darner dragonfly is the State insect of Washington. What is your State insect? **http://statesymbolsusa.org/Washington/insect_dragonfly.html**

Additional Resources

Dragonfly Life Cycle
http://www.dragonfly-site.com/dragonfly-life-cycle.html

Dragonflies and Damselflies
http://www.npwrc.usgs.gov/resource/distr/insects/dfly/index.htm

Dragonfly Society of the Americas
http://odonatacentral.org/

BioKids: Dragonflies
http://www.biokids.umich.edu/critters/Anisoptera/

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In a Drop of Pond Water

Introduction

In the book *Jo MacDonald Saw a Pond*, author Mary Quattlebaum introduces children to the plants and creatures of a pond ecosystem. In this activity and its related connections, children use observation and several scientific tools to examine a drop of pond water.

Materials Needed

- Vial of pond water
- Scientific notebook (3 pieces of paper stapled)
- Pencils
- Magnifying Glass
- Microscope
- Slide and slide cover

Key Concepts

- Plan and conduct a simple systematic observation or investigation.
- Use simple instruments such as magnifier and microscope to gather data and extend the senses.
- Communicte investigations that might be drawn or spoken as well as written.

For standards correlation please see our website.

Procedure

1. Tell children that they are scientists and will be making careful observations of a drop of pond water using three types of scientific tools (eye, magnifying glass, and microscope).
2. Ask them to draw one big circle on each page of the scientific notebook.
3. Put a drop of pond water on a slide or piece of clean, clear plastic. For the first observation ask children what they see or “observe”; have them draw their observations inside the first circle in the notebook. The eye is usually the scientist’s first tool.
4. For the second observation, have children observe the drop with a magnifying glass and draw what they see inside the second circle in the notebook.
5. Place a drop of pond water on a slide with the slide cover. Have children observe with microscope and draw what they see inside the third circle in the notebook. This is the third observation.
6. Have children compare their different observations. What are the similarities and differences between the three drawings?
7. Explain that Jo MacDonald was able to see many pond plants and creatures with her naked eye. Some creatures are so tiny, though, that you can see them only with a microscope. But they, too, are part of the pond ecosystem. Tiny plants (algae) and creatures such as hydras, protozoa, and worms are an important food source for pond creatures.

Nature Connections

- Have children examine a drop of pond water to which a drop of bleach or other chemical has been added. Repeat steps 2-6 in procedures above. Have them compare their observations/drawings of pond water and pond water with bleach. Discuss with children: How might pollutants and chemicals affect the microorganisms that are part of a pond ecosystem? And then, what might be the effect upon larger creatures that depend on these microorganisms for food?

Additional Resources

Pond Life Video Gallery
http://www.microscopyu.com/moviegallery/pondscum/

Pond Life Activities
http://42explore.com/pond.htm

Pond Life Basics
http://sciencespot.net/Pages/kdzbiopond.html

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Frog Fun

Introduction

In the book *Jo MacDonald Saw a Pond*, author Mary Quattlebaum introduces children to the plants and creatures of a pond ecosystem. In this activity and its related connections, children focus on frogs and explore their growth cycle through writing and drawing, and discuss the work of a frog scientist.

Materials Needed

- Several pieces of paper
- Colored markers or crayons

Key Concepts

- Plants and animals have life cycles.
- Each organism has different structures for different functions.
- Science can be a life-long career.

For standards correlation please see our website.

Procedure

1. Have children find the frog in the pictures in the book. What is it doing?
2. Explain that the pictures show the adult frog but that its life cycle includes three stages of growth: eggs, tadpoles, and adult frogs. (This information is included in the bullfrog description in the back.)
3. Show children pictures of these three stages in other books or on the internet. How do they move? What parts of their body allow them to move? What do they eat?
4. Have children act out the different stages (still eggs; wriggly, swimming tadpoles, leaping adult frogs.)
5. Ask them to pretend to be a tadpole and to write a letter to a frog. What would the tadpole like to ask the frog? What would it like to say about its life as a tadpole? About its growing legs? About the other pond creatures? Ask children to illustrate their letter.

Nature Connections

- Share the book *The Frog Scientist* (Houghton Mifflin, 2009) by Pamela Turner with the class. The author introduces Dr. Tyrone Hayes, who loved frogs as a kid and grew up to be a scientist doing research to help frogs. He examines the effect upon frogs of changes in their environment because he wants to understand why the frog population around the world is declining. Encourage students to look at and talk about the book's photos. Does Dr. Hayes work in a lab or in the field or both? What kind of equipment does he use? What has he discovered through his research?

Additional Resources

Life Cycle of a Frog
http://www.frog-life-cycle.com

Frog Facts and Fun
http://www.allaboutfrogs.org

FrogWatch USA
http://www.aza.org/frogwatch/

Frog Crafts
http://www.dltk-kids.com/animals/frogs.htm

American Bullfrog
http://kids.nationalgeographic.com/kids/animals/creaturefeature/american-bullfrog/

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Pond Drama

Introduction

In the book *Jo MacDonald Saw a Pond*, author Mary Quattlebaum introduces children to the plants and creatures of a pond ecosystem. In this activity and its related connections, children create pictures of the creatures and make their own noises and movements.

Materials Needed

- Paper
- Markers or Crayons
- Large blue blanket or fabric (optional)

Key Concepts

- Environments are the space, conditions, and factors that affect an individual's and a population's ability to survive and their quality of life.

For standards correlation please see our website.

Procedure

1. Assign each student to a certain plant or creature in the book (reed, frog, dragonfly, etc.).
2. Have them draw a picture of their creature using the book's illustrations as a guide. (Or provide a large photo of each plant/creature.)
3. Spread the blanket on the floor and have each child take place on this "pond."
4. Sing the song, with each child making her creature's sound and holding up her picture at the appropriate time.
5. At the end of the song, have children make their noises all together. What a wild symphony!

Nature Connections

- During the reading/song, have children make the movement as well as the noise of each creature.

- At the end of the book, Jo MacDonald draws a picture of all the pond creatures and shares it with her grandfather. Ask students to draw a pond with all the creatures and to share it with someone special.

- Visit a pond or have children look at a picutre of one in a book or on the internet. Do they see animals that aren't in Jo's pond? As a class, list the animals and their noises. Sing the song again and have children add these animals and their noises.

Additional Resources

Seasonal Changes in a Pond
http://www.hilton.pond.org

What's the Difference Between a Lake and a Pond?
http://www.aquahabitat.com/ponds.lakes.ed.html

Pond and Lake Habitats
http://ethemes.missouri.edu/themes/1458

Lakes and Ponds Biome
http://www.untamedscience.com/biology/world-biomes/lakes-and-ponds-biome

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Reed Weaving

Introduction

In the book *Jo MacDonald Saw a Pond*, author Mary Quattlebaum introduces children to the plants and creatures of a pond ecosystem. In this activity and its related connections, children learn about the importance of cattails to humans. Native Americans used cattails as building material for shelters and for food, medicine, toys and woven mats. Children will finger-weave their own mats.

Materials Needed

- Construction paper (one brown, one tan)
- Scissors

Key Concepts

- Plants are the base of an ecosystem.
- All organisms have different needs.
- Humans depend on environments.

For standards correlation please see our website.

Procedure

1. Show how cattails were used by Native Americans by sharing the website **Native Tech: American Technology and Art** at *www.nativetech.org/cattail/cattail.html*. Native Americans used their fingers, rather than looms, to create the mats.
2. Distribute brown construction paper.
3. Ask students to fold brown paper horizontally and make a light pencil mark 1 inch from the top.
4. Have them cut from the fold up to the pencil mark and to repeat this at 1 inch intervals. (These cuts need not be straight; in fact, irregular cuts make more interesting patterns.)
5. Unfold brown paper and lay it straight on the table.
6. Have students cut the tan paper into 1-inch strips (or distribute pre-cut strips to students.)
7. Ask students to weave one end of tan strip first over the brown “thread” and then under the brown continuously.
8. Use another tan strip for the next row; alternate to weave under/over the brown “thread.”

Nature Connections

- Read aloud the description of cattails in the back of *Jo MacDonald Saw a Pond*. Cattails can provide food, shelter/nests, and resting or hiding places for pond creatures. Ask children to look at each picture to discover whether an animal is using it in one of those three ways.

- Purchase cattails from a florist or nursery and guide the children to observe them carefully (what is the color and shape), smell them, and touch them. Have the children hold and move the cattails. What sound do they make? Have each child take on the persona of the cattail and write a poem.

Additional Resources

Cattails in the Wetlands
http://www.cattails.info/

USDA Plant Database
http://plants.usda.gov/

The Edible Cattail
http://www.sacredearth.com/ethnobotany/foraging/cattail.php

Weaving with Cattails
http://www.wickerwoman.com/articles/gathering-cattail-leaves