**LESSON 1**

**Water, Water Everywhere**

How is water important to the animals that make their homes in the pond?
What kind of homes do the animals in a pond habitat make?

**LESSON 2**

**Pond Homes**

What kinds of animals and plants could you expect to find in an ocean habitat?
How are pond and ocean habitats similar and different?

**LESSON 3**

**Living in Water Habitats**

August 7, 2008
Water, Water Everywhere

- What is Water?
- Water Station Activities
- Fill' er Up Teacher Demo
- Going Further

Pond Homes

- Introducing Pond Homes
- Creating Pond Homes
- Adding Worms and Snails
- Fish in the Pond

Build a Pond

- Who's at Home?
- The Class Pond
- Going Further

Living in Water Habitats

- Pond Diversity
- Introducing Marine Habitats
- Visiting Marine Habitats Around the School
- Water Homes Bingo

Adopt-a-Playground

- Map Making
- The Schoolyard Field Trip
- Litter in Our Habitat
- The "Green" Classroom and Lunchbox

Highlighted text denotes recommended first year lessons
Ponds

Kindergarten MARE

Flow Chart

Water, Water Everywhere
Hands on discovery 4 class periods

What Is Water?
2 class periods

Water Station Activities

Fill 'er Up

Pond Homes
Hands on activity 4 class periods

Introducing Pond Homes

Creating Pond Homes

Fish in the Pond

Worms and Snails

Please go to the next page

(Blue title indicates lessons to start within Year 1)
A class period = 45 minutes
Who's at Home?

The Class Pond

Pond in Action!

Build a Pond
3 class periods
45 minutes each

Living in Water Habitats
4 class periods
45-60 minutes each

Pond Diversity

Marine Habitats
Around the School

Marine Habitats

Water Homes
Bingo

Adopt a Playground

Map Making

Schoolyard Field Trip

Litter in Our Habitat

The "Green" Classroom and Lunchbox

Please go to the next page
WATER, WATER EVERYWHERE

Ponds (Kindergarten)

Lesson Overview
Students brainstorm and explore the importance of water while rotating in 3 activity stations.
• Sink or Float?
• Boat Building
• Water Drops

Lesson Rationale
Exposing young students to our “Blue Planet” and discovering the properties that makes water unique and interesting.

Teacher’s Notes
Students work in small groups stations under teacher direction to predict outcomes.

My Notes

Key Concept:
Water is a very important liquid for every living thing.

Time Required:
4 class periods of approximately 60 minutes each
<table>
<thead>
<tr>
<th>Subject Area</th>
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</table>
| Science      | • Water is a very important and interesting liquid.  
• Scientists make careful observations before using their five senses.  
• Some materials tend to float, other materials tend to sink.  
• Whether or not something sinks or floats depends on the material, not the size of the object.  
• We can make predictions and then measure the amount of water that different shapes will hold. | Pond  
Teacher’s Guide  
Chart paper  
Markers  
Materials in binder for water stations |  | STANDARD 5.1  (Scientific Processes)  
5.1.A.1  
STANDARD 5.3  (Mathematical Applications)  
5.3.A.1  
5.3.D1  
STANDARD 5.8  (Earth Science)  
5.8.B.1  
STANDARD 5.10  (Environmental Studies)  
5.10.A.1 |  |
| Language Arts Literacy | Students brainstorm sentences for “Water Is…”  
Students will choose their favorite sentence, write it and then illustrate it for bulletin board or class book. | Chart paper  
Markers  
Paper | **Guided Reading:**  
*Where Is Water?* - Level B  
*Senses* - Level D  
*Does It Sink or Float?* – Level F  
*Earth’s Water* - Level H  
(Materials provided)  
**Poems** – Water Cycle, Water  
**Literature Connection**  
*Water* - Neil Morris  
Thameside Press, 2001  
(Provides information about water, its different forms, how it is used, includes activities.)  
Read aloud for the class, and then create a water cycle flow chart. |  | STANDARD 3.1  (Reading)  
3.1.A.5  
3.1.C.1  
3.1.E.5  
STANDARD 3.2  (Writing)  
3.2.A.1  
3.2.A.2  
3.2.A.4  
3.2.B.1  
3.2.D.1 |  |
| Mathematics | Students will graph number of students able to float certain numbers of pennies in the boat building station. | Markers  
Large graph paper | Students can keep track of the weather each day. Make weekly and monthly graphs. |  | STANDARD 4.1  
Numerical Operations  
4.1.A.3  
4.1.B1 |
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<tr>
<td><strong>Social Studies</strong></td>
<td>Students will look at local and regional maps to find lakes, streams, rivers, etc.</td>
<td>Wall maps</td>
<td><strong>STANDARD 4.4 Data Analysis</strong> 4.4.A.1 4.4.A.2</td>
<td>STANDARAD 6.6. The World in Spatial Terms 6.6.A.1, A.2, C.1, E.1</td>
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<tr>
<td><strong>Visual Arts</strong></td>
<td>Using old magazines, create a water collage that illustrates the different ways water is used by living and non-living things</td>
<td>Magazines, Paper, Glue</td>
<td><strong>Songs</strong> – Five Senses, Rain Create posters about seasonal precipitation.</td>
<td>STANDARD 1.2 (Creation and Performance) 1.2.D.1</td>
</tr>
<tr>
<td><strong>World Language</strong></td>
<td></td>
<td>Children can discuss how different people around the world collect drinking water.</td>
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<td><strong>Career Education &amp; Consumer, Family &amp; Life Skills</strong></td>
<td></td>
<td>Students can act out the water cycle. Start on the ground as a puddle, and then begin standing as they evaporate. As they gather together in groups of two, then three and four, they are condensing in the clouds. Finally they use their arms and fingers as precipitation falling back to earth.</td>
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<tr>
<td><strong>Physical Education</strong></td>
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**POND HOMES**

Ponds (Kindergarten)

**Lesson Overview**
Students work together to build desktop ponds as they learn about habitats and adaptations.

**Lesson Rationale**
The accessibility of ponds makes them a great habitat to explore with students. Students realize that ponds are filled with interesting organisms.

**Teacher’s Notes**
Students listen to a teacher directed story about ponds and then work in small groups to find evidence about pond life. Students work in groups to create pond homes.

**My Notes**

**Key Concept:**
An animals’ habitat is where it lives. The habitat has everything that the animal needs to survive. Animals make adaptations to help them survive in their habitat.

**Time Required:**
4 class periods about 45 minutes each
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| **Science**  | • The neighborhood where an animal lives is called a habitat and has everything an animal needs to survive.  
• An animal’s habitat must provide food, water, shelter, and space.  
• Our desktop ponds are models for real ponds.  
• Scientists create models of organisms and habitats so that they can learn more about them.  
• It is important to write down observations using words and drawings so we can tell others what we have discovered.  
• Animals have special parts or ways of acting that help them to survive in their habitat. These are called adaptations. | Books about ponds  
Chart paper  
Markers  
Aquarium  
Pond muck  
and water  
Gravel  
Microscopes  
Hand lenses | Visit local ponds during the seasons. Create journal entries for the changes noted for the season.  
Purchase tadpoles for pond homes.  
(Check local nurseries or science catalogues.) | STANDARD 5.1 (Scientific Processes)  
5.1.A.1  
5.1.A.2  
STANDARD 5.5 (Characteristics of Life)  
5.5.A.1  
5.5.A.2  
STANDARD 5.10 (Environmental Studies)  
5.10.A.1 |
| **Language Arts Literacy** | **Writing:** Modeled writing-make a chart about Pond homes.  
Habitat Health Rules chart.  
Science journals | Chart paper  
Markers  
Journals or sheets of paper with construction paper covers | **Guided Reading:**  
*Pond Animals* -Level A  
*Pond Life*- Level B  
*The Busy Pond* –Level D  
*Frog Is Hungry* - Level D  
(Materials provided) | STANDARD 3.1 (Reading)  
3.1.C.1, D.1, F.1, H.2  
STANDARD 3.2 (Writing)  
3.2.A.1, A.4, B.1  
STANDARD 3.3 (Speaking)  
3.3.A.1, B.1  
STANDARD 3.4 (Listening)  
3.4.A.1 |
| **Literature Connection:**  
*In the Small, Small Pond* by Denise Fleming  
Use prior to building pond homes.  
Students can choose the animal they like and then write a sentence and illustrate a picture for a class big book.  
**Writing:** Students can dictate or write a story from the viewpoint of any organism that lives in a pond. | Poems – *River, Save Our Animals* | | |
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<td>Mathematics</td>
<td></td>
<td>Create a graph monitoring the fish population in the pond habitats. Repeat weekly. Estimate how many worms are in the sand and gravel each day</td>
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<td>Social Studies</td>
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<tr>
<td>Visual Arts</td>
<td>Create pond home drawings.</td>
<td>Students can illustrate the key concepts of the lessons. Create paper plate frogs, using paint and pipe cleaners. Create lily pad for the frogs using construction paper and tissue paper.</td>
<td>STANDARD 1.2 (Creation and Performance) 1.2.D.1, D.3</td>
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<td>World Language</td>
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<tr>
<td>Physical Education</td>
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<td>Leapfrog relay races Turtle Hurdles: The object of the lesson is to imitate the movements of turtles by lying on a scooter and using their hands and feet as flippers. Hurdles, using cones and hockey sticks, can be used for the students to go under (since turtles can’t jump). For more information see Rob Causton’s website. He is a MARE Educator</td>
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Living in Water Habitats

Ponds (Kindergarten)

Lesson Overview
Students observe their living ponds and are introduced to the words algae and organism. They also learn that the ocean is made up of many different habitats.

Lesson Rationale
Students will gain a better understanding of the diversity of organisms in pond and ocean habitats.

Teacher's Notes
Teacher guided for Pond Diversity and Introducing Marine Habitats. Students work in small groups to compare organisms in fresh water ponds and saltwater homes. Students then visit other classrooms to gather more information about saltwater habitat organisms.

My Notes

Key Concept:
There are many types of living organisms, plants and animals that live in water habitats.

Time Required:
4 sessions of about 60 minutes each
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<tr>
<td>Science</td>
<td>• Living things are called organisms. Organisms can be animals, plants, or living things that look like plants. • Plant-like organisms are called algae. • The water in ponds is fresh water. • Many different organisms live in fresh water. • Some animals live in fresh water and some animals live in salt water. • The water in the ocean is salty. • There are many different habitats in the ocean. • Different kinds of organisms live in different ocean habitats.</td>
<td>Chart paper Markers Sentence strips Pond/ocean pictures Pond/ocean books Illustrations of the five different habitats • Rocky seashore • Sandy beach • Wetlands • Kelp forest • Open ocean Marine/Pond organism illustrations Bingo boards Markers</td>
<td>Students color and cut out black-line drawings of pond and ocean organisms. Attach the drawings to magnets and have the students sort according to habitat.</td>
<td>STANDARD 5.1 (SCIENTIFIC PROCESSES) 5.1.A.1 5.1.B.1 5.1.C.1 STANDARD 5.10 (ENVIRONMENTAL STUDIES) 5.5.A.1 5.5.B.1</td>
</tr>
</tbody>
</table>
| Language Arts Literacy | • Compile a KWL chart for Pond/Ocean. • New vocabulary-organism, algae, habitat • Students will think, pair, and share differences between | Chart paper Markers Sentence strips | **Guided Reading:**  
*Life in the Pond*-Level I  
*Land and Water*-Level I  
*Shapes in the Tide-Pool*-Level E  
*In the Sea*-Level E  
(Materials provided)  
**Literature Connection:**  
*Lottie’s New Beach Towel* by Petra Mathers (1998) Read aloud to the students. | STANDARD 3.1 (Reading) 3.1.C.1 3.1.D.1 3.1.F.1 3.1.F.2 STANDARD 3.2 (Writing) 3.2.A.1 3.2.A.2 |
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<td>Ocean/Pond Life</td>
<td>• Record ideas about pond/ocean habitats on sentence strips.</td>
<td></td>
<td>Students can make a decorated paper beach towel. Discuss things you need to take to the beach for an enjoyable day. List all of the words on the board. Hand out pieces of sentence strips and have the students attach the words to their beach towel. They can even illustrate at the end of the strip. Take pictures of each student and place them on the beach towel.</td>
<td>3.2.A.4 3.2.A.6 3.2.B.1 STANDARD 3.3 (Speaking) 3.3.A.1 3.3.B.1 3.3.B.2</td>
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<tr>
<td>Mathematics</td>
<td>During the Bingo game, counting the number of squares covered. Introduce terms horizontal, vertical, and diagonal.</td>
<td>Bingo cards Cup of 9 bingo markers</td>
<td>Use goldfish crackers for counting, estimating, and graphing.</td>
<td>STANDARD 4.1 (Number and numerical operations) 4.4.A.1</td>
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<tr>
<td>Social Studies</td>
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<td>Observe New Jersey maps to locate the ocean and rivers.</td>
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<td>Visual Arts</td>
<td>Students will begin creating bulletin board pond habitat using information they have learned about animals and plants. Students will choose one pond and one ocean organism to draw and color.</td>
<td>Drawing paper Markers, crayons, paint Pictures of organisms</td>
<td>Paper plate frog.</td>
<td>STANDARD 1.2 (Creation and Performance) 1.2.D.1, D.2</td>
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<td>Technology</td>
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<td>Pond coloring book</td>
<td><a href="http://www.eibspond.com/">http://www.eibspond.com/</a></td>
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<td>World Language</td>
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<tr>
<td>Career Education &amp; Consumer, Family &amp; Life Skills</td>
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<td>Visit local aquariums:</td>
<td>Jenkinson’s in Point Pleasant</td>
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<td>Adventure Aquarium in Camden</td>
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<td>Physical Education</td>
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<td>Crab Bowl</td>
<td>The objective of the game is to discuss how crabs move on the land and in the water. Students are divided into two teams. The crabs must cross the tide pool without getting bowled over or hit by one of the foam balls. Check out Rob Causton’s website for more information. He is a MARE teacher.</td>
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<td><a href="http://www.warrennet.org/oxford/causton/">http://www.warrennet.org/oxford/causton/</a></td>
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