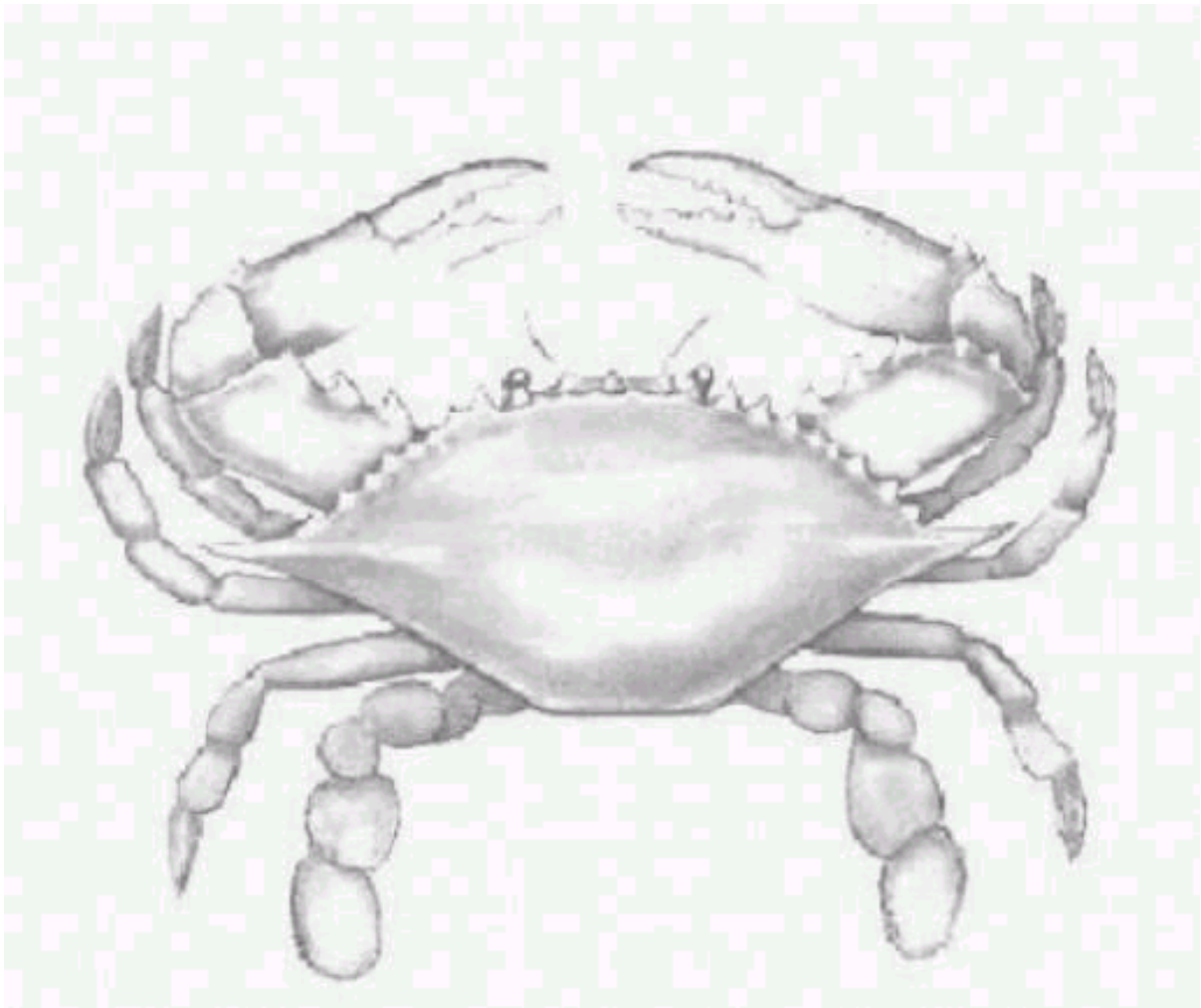




Learning About  
The Barnegat Bay Watershed  
and  
Related Environmental and Cultural Issues



A Curriculum Guide  
for  
Kindergarten Through Third Grade Teachers





# Learning About The Barnegat Bay Watershed and Related Environmental and Cultural Issues



	Grade Level	Page
1. Learning About Food From the Sea	K-3	1
2. The Wampanoag Indians Helped the Pilgrims	K	2
3. Why Are Trees Important	K	3
4. Don't Be a Water Waster	1	4
5. Learning About Bogs	1	5
6. Harvesting Cranberries	1	6
7. Pollution and Our Environment	1-2	7
8. What is a Bay Habitat?	2	8
9. Our Place in the Environment	2	9
10. How Culture and Growth Has Changed the Shore Area	2-3	10
11. Connecting Our Cultural and Our Natural Resources	3	11
12. The Fishing Industry's Impact on Our Watershed	3	12
13. New Jersey Core Curriculum Content Standards	Appendix	A

**Note:** *All Lesson Plans are easily adaptable for Kindergarten through Third Grade by modifying activities and vocabulary to age and grade appropriateness.*





**Activity Focus: Barnegat Bay Estuary**      *Grade Level: K - 3*

**Lesson Title: Learning About Food From the Sea**

**Goal:**

Students will learn about the different products and foods, which come from the ocean, and about the people who get them.

**Objective(s): Students will ...**

make a collage from magazine cutouts of foods and by-products that come from the ocean.

**Introduction:**

Discuss life in the sea, ocean. What do we think lives in the sea, ocean? What does it look like under the sea, ocean? How do we catch this food? What kind of food from the ocean have we seen in restaurants? On TV commercials? How does the food get to the restaurants? Let's make a list of this food.

**Key Vocabulary:**

Fish, shrimp, lobster, kelp, seaweed, shells, tuna, ice cream, toothpaste

**Activity:** students to work in small groups.

Distribute magazines, scissors, and paste.

Instruct students to search for pictures of the sea such as fish, shells, etc.

Cut and paste onto large piece of construction paper to make a collage or mural.

Students will listen to sea sounds or music about the sea while creating collage or mural.

**Wrap-Up (Closure)**

Each group will display their mural and tell the class about this artwork.


**Evaluation:**

Students will discuss the real foods or products that come from the ocean vs. ones that look like fish. Students will write or tell about their artwork or a special picture that the group found.

**Extensions:**

1. Students will taste test foods from the ocean on a field trip or in the class. (Be sure to survey the parents for any food allergies before having students taste test real seafood).
2. Students will make fish out of jello.
3. Students will bring snacks to class to share that resemble food from the ocean such as candies or crackers and discuss real food from the sea vs. manufactured foods.

**New Jersey Core Curriculum Content Standards Addressed:**

Cross Content Workplace Readiness ___1 ✓ 2 ___3 ✓ 4 ✓ 5	Visual and Performing Arts and ✓ 1.1 ✓ 1.2 ✓ 1.3 ___1.4 ___1.5 ✓ 1.6	Comprehensive Health and Physical Education ___2.1 ___2.2 ___2.3 ___2.4 ___2.5 ___2.6	Language Arts Literacy and ✓ 3.1 ✓ 3.2 ___3.3 ___3.4 ✓ 3.5
Mathematics ___4.1 ___4.2 ___4.3 ___4.4 ___4.5 ___4.6 ___4.7 ___4.8 ___4.9 ___4.10 ___4.11 ___4.12 4.13 4.14 4.15 4.16	Science ___5.1 ___5.2 ✓ 5.3 ___5.4 ___5.5 ✓ 5.6 ___5.7 ___5.8 ___5.9 ___5.10 ___5.11 ✓ 5.12	Social Studies ___6.1 ___6.2 ___6.3 ___6.4 ___6.5 ___6.6 ✓ 6.7 ___6.8 ✓ 6.9	World Languages ___7.1 ___7.2 



**Activity Focus: Barnegat Bay Estuary**

*Grade Level: Kindergarten*

**Lesson Plan: The Wampanoag Indians Helped the Pilgrims**

**Goal:** Help students recognize the hardships the Pilgrims faced when trying to adjust to a new and different environment and lifestyle

**Objective(s): Students will ...**

1. Describe some of the natural resources the Wampanoag Indians showed to the Plymouth Settlers
2. Discuss the role the Indians played in helping the Pilgrims adjust and learn to use these resources
3. List several natural resources located at the Jersey Shore
4. Discuss how we use these resources

**Introduction:**

Discuss the role the Wampanoag Indians played in helping the Pilgrims adjust and learn to use the resources around them. Ask guiding questions when necessary to help children think about shelter, food, clothing, feelings, health, etc. On chart paper, list the children's responses. Remind the children that the Pilgrims had been living in cities in London where there were shops, doctors, and other goods and services.

**Key Vocabulary:** Settlers, Environment, Resources, Goods and Services, Harvest, Feast

**Activity:**

1. Read a book about the Pilgrims and have children list the hardships the Pilgrims faced. Record the childrens' responses to the question, "What did the Indians teach the pilgrims?"
2. Use pictures from resource books to show the children what the various vegetables, fish, seafood, and game animals look like, as well as homes, means of cooking, etc.
3. Bring in some vegetables, seeds, tools, and utensils for children to explore.
4. Have the children work in groups to create murals of the Indians teaching the Pilgrims ways of using natural resources. Examples could include hunting, gathering clams and mussels, fishing, planting corn. (use paper, crayons, paints)
5. Have each group present their mural to the class; then display.
6. Read a poem about the first Thanksgiving. Ask, "What were the Pilgrims thankful for?" List the responses on a chart.
7. Discuss the Thanksgiving Feast. Using pictures, posters, and resource books describe for the children what a three day feast was like. Include descriptions of food, clothing, utensils, responsibilities of adults and children.


**Wrap-Up (Closure):**

Plan a Thanksgiving Feast. Review the vocabulary words as they relate to the feast. Have students identify the resources they will bring to the feast. Talk about the various jobs required to plan the feast, hold the feast, and clean-up after the feast. How does the clean-up affect the environment?

**Evaluation:** Observation, student participation, murals developed and presented to class

**Extensions:** Hold a Thanksgiving Feast; Roleplay various participants; play some of the games that were played long ago.

**New Jersey Core Curriculum Content Standards Addressed:**

Cross Content Workplace Readiness ___ 1 ___ 2 ✓ 3 ___ 4 ___ 5	Visual and Performing Arts and ___ 1.1 ___ 1.2 ✓ 1.3 ___ 1.4 ✓ 1.5 ___ 1.6	Comprehensive Health and Physical Education ___ 2.1 ___ 2.2 ___ 2.3 ___ 2.4 ___ 2.5 ✓ 2.6	Language Arts Literacy and ___ 3.1 ___ 3.2 ___ 3.3 ✓ 3.4 ___ 3.5
Mathematics ___ 4.1 ___ 4.2 ___ 4.3 ___ 4.4 ___ 4.5 ___ 4.6 ___ 4.7 ___ 4.8 ___ 4.9 ___ 4.10 ___ 4.11 ___ 4.12 ___ 4.13 ___ 4.14 ___ 4.15 ___ 4.16	Science ___ 5.1 ___ 5.2 ___ 5.3 ___ 5.4 ___ 5.5 ___ 5.6 ___ 5.7 ___ 5.8 ___ 5.9 ___ 5.10 ___ 5.11 ___ 5.12	Social Studies ___ 6.1 ___ 6.2 ___ 6.3 ✓ 6.4 ___ 6.5 ✓ 6.6 ___ 6.7 ___ 6.8 ✓ 6.9	World Languages ___ 7.1 ___ 7.2 



<b>Activity Focus:</b> Barnegat Bay Estuary	<b>Grade Level:</b> Kindergarten
---	----------------------------------

**Lesson Plan: Why Are Trees Important?**

**Goal:**

To develop an understanding of the important role of trees in our lives.

**Objective(s): Students will ...**

1. Identify parts of a tree.
2. Discuss why trees are important to human life.

**Introduction:**

Today we will talk about trees and how they help us.  
We will identify many different trees and list the parts of a tree.

**Key Vocabulary:**

Leaves, trunk, branches, roots, tree

**Activity:**

1. Students will make a poster or mural of things made from trees.  
Label The poster: "We Need Trees"
2. Students to go on a tree walk. Students will collect leaves and make tree rubbings or trace the outline of the leaves.

**Wrap-Up (Closure)**

Students will discuss the different kind of trees they see and how they are useful to us.


**Evaluation:**

Students to color and identify tree parts.

**Extensions:**

1. Students will read a book about trees.
2. Students will listen to music about the seasons and pretending they are trees dance or move about as as tree.

**New Jersey Core Curriculum Content Standards Addressed:**

Cross Content Workplace Readiness ✓ 1 ___ 2 ✓ 3 ___ 4 ✓ 5	Visual and Performing Arts and ✓ 1.1 ✓ 1.2 ✓ 1.3 ___ 1.4 ___ 1.5 ✓ 1.6	Comprehensive Health and Physical Education ___ 2.1 ___ 2.2 ___ 2.3 ___ 2.4 ✓ 2.5 ___ 2.6	Language Arts Literacy and ___ 3.1 ___ 3.2 ___ 3.3 ___ 3.4 ___ 3.5
Mathematics ___ 4.1 ___ 4.2 ___ 4.3 ___ 4.4 ___ 4.5 ___ 4.6 ___ 4.7 ___ 4.8 ___ 4.9 ___ 4.10 ___ 4.11 ___ 4.12 4.13 4.14 4.15 4.16	Science ___ 5.1 ___ 5.2 ___ 5.3 ___ 5.4 ___ 5.5 ___ 5.6 ___ 5.7 ___ 5.8 ___ 5.9 ✓ 5.10 ✓ 5.11 ✓ 5.12	Social Studies ___ 6.1 ___ 6.2 ___ 6.3 ___ 6.4 ___ 6.5 ___ 6.6 ___ 6.7 ___ 6.8 ✓ 6.9	World Languages  ___ 7.1 ___ 7.2



## Elementary Curriculum Development Project (Grades K-3)

<b>Activity Focus:</b> Barnegat Bay Estuary	<b>Grade Level:</b> 1
---	-----------------------

### Lesson Plan: Don't be a Water Waster

#### Goal:

To help students understand the importance of conserving water.

#### Objective(s): Students will ...

Learn health-enhancing personal, interpersonal, and life skills

#### Introduction:

Students and teacher will discuss the drought of this summer and what it means to us.  
 Discussion will continue about the rules of watering every other day, odd-even days.  
 Students will discuss what happened to the water at the end of the summer and why we  
 are now no longer able to water the grass.  
 Students will think about, "What happened to the water?"

#### Key Vocabulary:

Water Waster, drought, odd/even, conservation

#### Activity:

Make a story chart of the day to show how many times we use the water  
 from the sink and the water faucet.  
 Help students to make a graph of the results.  
 Have the child help make a list of times water is used at home.  
 Have them draw/chart how many times a day they think they use water at home.

#### Wrap-Up (Closure)

As a class we create and color a large graph to show the whole class's use of water.  
 Use 1-inch graph paper with each inch indicating one use of water.  
 List the ways water is used at the bottom of the paper.


#### Evaluation:

Students will talk about how they can cut back on their use of water. Make a list and post in class.

#### Extensions:

Help students fold drawing paper in 4's to serve as a graph. After a list is made in class  
 regarding the number of times students think they use water at home, hand a graph  
 paper out to each child (to take home).  
 Students will color the graph each time they use water at their home.  
 The children will return their graphs to school and compare it to the list they made in class,  
 then discuss whether they used more or less water that they originally thought.  
 Continue discussion on ways to conserve water.

### New Jersey Core Curriculum Content Standards Addressed:

Cross Content Workplace Readiness ___1 ___2 ✓ 3 ___4 ✓ 5	Visual and Performing Arts and ___1.1 ___1.2 ___1.3 ___1.4 ___1.5 ___1.6	Comprehensive Health and Physical Education ___2.1 ✓2.2 ___2.3 ___2.4 ___2.5 ___2.6	Language Arts Literacy and ___3.1 ___3.2 ___3.3 ___3.4 ___3.5
Mathematics ✓4.1 ✓4.2 ✓4.3 ___4.4 ___4.5 ___4.6 ✓4.7 ___4.8 ✓4.9 ___4.10 ___4.11 ✓4.12 ___4.13 ___4.14 ___4.15 ___4.16	Science ___5.1 ___5.2 ___5.3 ___5.4 ___5.5 ___5.6 ___5.7 ___5.8 ___5.9 ___5.10 ___5.11 ___5.12	Social Studies ___6.1 ___6.2 ___6.3 ___6.4 ___6.5 ___6.6 ___6.7 ___6.8 ___6.9	World Languages ___7.1 ___7.2 



# Elementary Curriculum Development Project (Grades K-3)

<b>Activity Focus:</b> Barnegat Bay Estuary	<b>Grade Level:</b> 1
---	-----------------------

## Lesson Plan: Learning About Bogs

### Goal:

Students will have a basic understanding of the layers in a bog.

### Objective(s): Students will ...

Identify the components of a bog and then build a mini bog

### Introduction:

Discuss what a cranberry bog is and where they are found

### Key Vocabulary:

Bog, cranberry

### Activity:

(Taken from the Cape Cod Cranberry Growers' Association)

Give each student an 8 oz receptacle plastic cup. As you talk about the formation of a natural bog, ask each student to layer the materials in the cup as follows:

- 1 inch square modeling clay
- course gravel to cover the clay
- peat moss to fill 3/4 of the cup
- 1/2 inch of sand to cover the peat moss
- cranberry cuttings (optional - available at Weston Nurseries (508) 435-3414 or a local cranberry bogs during harvesting).

### Wrap-Up (Closure)


Students will summarize what they have in their cups and draw a diagram of what they see.

### Evaluation:

Students will look at mini bogs and discuss how these ingredients help cranberries to grow.

**Extensions:** Visit a real cranberry bog; discuss jobs/workers at a cranberry bog.

### New Jersey Core Curriculum Content Standards Addressed:

Cross Content Workplace Readiness __1 __2 ✓ 3 ✓ 4 __5	Visual and Performing Arts and __1.1 __1.2 __1.3 __1.4 __1.5 __1.6	Comprehensive Health and Physical Education __2.1 __2.2 __2.3 __2.4 __2.5 __2.6	Language Arts Literacy and ✓3.1 ✓3.2 __3.3 __3.4 __3.5
Mathematics __4.1 __4.2 ✓4.3 __4.4 __4.5 __4.6 __4.7 __4.8 ✓4.9 ✓4.10 __4.11 __4.12 __4.13 __4.14 __4.15 __4.16	Science ✓5.1 __5.2 __5.3 __5.4 __5.5 __5.6 __5.7 __5.8 __5.9 __5.10 __5.11 __5.12	Social Studies __6.1 __6.2 __6.3 __6.4 __6.5 __6.6 __6.7 __6.8 __6.9	World Languages __7.1 __7.2 



## Elementary Curriculum Development Project (Grades K-3)

<b>Activity Focus:</b> <b>Barneгат Bay Estuary</b>	<i>Grade Level: 1</i>
--	-----------------------

### Lesson Plan: Harvesting Cranberries

#### Goal:

To help students have a better understanding of the industry of cranberry harvesting.

#### Objective(s): Students will ...

Learn about cranberry harvesting

#### Introduction:

Teacher will read: Cranberries by William Jaspersohn.

Students will listen to the story about cranberry harvesting and discuss the colorful pictures in the book.

Students will discuss when we eat cranberries; other uses of cranberries (food for animals; dye for artwork; counting markers, etc).

#### Key Vocabulary:

Bog, harvesting, corrals, hopper

#### Activity:

Children will string cranberries and popcorn to place on trees outside classroom to feed local animals.

#### Wrap-Up (Closure)

Choose a cranberry recipe and make with children. Eat as snack.

#### Evaluation:


Students will write a story about how we use cranberries or write a funny recipe with cranberries as the main ingredient.

#### Extensions:

Attend Cranberry Festival, Chatsworth, NJ.

Watch for animal activity on or near the decorated tree and chart same.

### New Jersey Core Curriculum Content Standards Addressed:

Cross Content Workplace Readiness ___1 ___2 ___3 ___4 ___5	Visual and Performing Arts and ___1.1 ___1.2 ___1.3 ___1.4 ___1.5 ___1.6	Comprehensive Health and Physical Education ___2.1 ___2.2 ___2.3 ___2.4 ___2.5 ___2.6	Language Arts Literacy and ___3.1 ✓3.2 ✓3.3 ___3.4 ___3.5
Mathematics ___4.1 ___4.2 ___4.3 ___4.4 ___4.5 ___4.6 ___4.7 ___4.8 ___4.9 ___4.10 ___4.11 ___4.12 ___4.13 ___4.14 ___4.15 ___4.16	Science ✓5.1 ___5.2 ___5.3 ___5.4 ___5.5 ___5.6 ___5.7 ___5.8 ___5.9 ___5.10 ___5.11 ___5.12	Social Studies ___6.1 ___6.2 ___6.3 ___6.4 ___6.5 ✓6.6 ___6.7 ___6.8 ✓6.9	World Languages ___7.1 ___7.2 





**Activity Focus:** Barnegat Bay Estuary

**Grade Level:** 1 - 2

**Lesson Plan:** Pollution and Our Environment

**Goal:**

To help students understanding the effect of pollution on our environment.

**Objective:** Students will...

Learn ways to reduce pollution.

**Introduction:**

The teacher will read the Big Book: Where Does All the Garbage Go?; then interact through question and answer activity to help students better understand pollution.

**Key Vocabulary:**

Pollution, recycle

**Activity:**

1. Have children bring in items from home that would normally go in the garbage or be recycled - *no food or soiled items.*
2. Sort according to recycling for community.
3. Discuss how these recycling items can be used again.

**Wrap-Up (Closure)**

1. Have a recycling race with two or more teams.
2. Time how long it will take each team to recycle items correctly.
3. Have each team tell how they categorized each item.


**Evaluation:**

1. Students will develop a plan to recycle correctly in school by making a chart of items to recycle and by labeling containers for recycling.
2. Students will discuss how recycling helps save the environment.

**Extensions:**

Students will make recycled paper and discuss how the use of recycled paper can help save the environment.

**New Jersey Core Curriculum Content Standards Addressed:**

Cross Content Workplace Readiness ✓ 1 ___2 ✓ 3 ___4 ✓ 5	Visual and Performing Arts and ___1.1 ___1.2 ___1.3 ___1.4 ___1.5 ✓ 1.6	Comprehensive Health and Physical Education ✓ 2.1 ___2.2 ___2.3 ___2.4 ___2.5 ___2.6	Language Arts Literacy and ✓ 3.1 ✓ 3.2 ___3.3 ___3.4 ✓ 3.5
Mathematics ___4.1 ✓ 4.2 ✓ 4.3 ___4.4 ___4.5 ___4.6 ___4.7 ✓ 4.8 ___4.9 ___4.10 ___4.11 ___4.12 ___4.13 ✓ 4.14 ___4.15 ___4.16	Science ✓ 5.1 ___5.2 ___5.3 ___5.4 ✓ 5.5 ___5.6 ___5.7 ___5.8 ___5.9 ___5.10 ___5.11 ✓ 5.12	Social Studies ___6.1 ___6.2 ___6.3 ___6.4 ___6.5 ___6.6 ___6.7 ___6.8 ✓ 6.9	World Languages ___7.1 ___7.2 



**Elementary Curriculum Development Project  
(Grades K-3)**

<b>Activity Focus: Barnegat Bay Estuary</b>	<b>Grade Level: 2</b>
---	-----------------------

**Lesson Plan: What is a Bay Habitat**

**Goal:**

Children will create a bay habitat and use handmade samples of the various living organisms to act out a play

**Objective(s): Students will ...**

Students will demonstrate the ability to identify and create bay habitat living creatures and then use their theatrical abilities to put on a small skit about “life in a bay habitat.”

**Introduction:**

Ask children of what life is like at home (i.e. a day in the life of ...) and now compare it to bay life

**Key Vocabulary:**

Varying bay creatures and living organisms

**Activity:**

Children will create plate puppets of different creatures found in the bay (i.e. crabs, clams, etc) and then they will pretend they are those creatures as they act out “a day in the life of these animals”

**Wrap-Up (Closure)**

Children will perform their skits in groups to the classroom.


**Evaluation:**

Students will create their own creatures and write a story about their life in the sea.

**Extensions:**

Students will choose a book from the library related to the bay habitat; read the book; write a book report with both text and pictures; and present report to the class.

**New Jersey Core Curriculum Content Standards Addressed:**

Cross Content Workplace Readiness ___1 ___2 ___3 ___4 ___5	Visual and Performing Arts and ✓ 1.1 ✓ 1.2 ___1.3 ___1.4 ✓ 1.5 ___1.6	Comprehensive Health and Physical Education ___2.1 ___2.2 ___2.3 ___2.4 ___2.5 ___2.6	Language Arts Literacy and ✓ 3.1 ___3.2 ___3.3 ___3.4 ___3.5
Mathematics ___4.1 ___4.2 ___4.3 ___4.4 ___4.5 ___4.6 ___4.7 ___4.8 ___4.9 ___4.10 ___4.11 ___4.12 ___4.13 ___4.14 ___4.15 ___4.16	Science ___5.1 ___5.2 ___5.3 ___5.4 ___5.5 ___5.6 ✓5.7 ___5.8 ___5.9 ___5.10 ___5.11 ___5.12	Social Studies ___6.1 ___6.2 ___6.3 ___6.4 ___6.5 ___6.6 ___6.7 ___6.8 ___6.9	World Languages ___7.1 ___7.2 



<b>Activity Focus: Barnegat Bay Estuary</b>	<b>Grade Level: 2</b>
---	-----------------------

**Lesson Plan: Our place in the Environment**

**Goal:**

To promote awareness and pride in students.

**Objective(s): Students will ...**

Identify the role they play in protecting the environment; and  
List the reasons they are special based on their role as a caretaker.

**Introduction:**

Class discusses the uniqueness of each student and their ability to protect the earth.

**Key Vocabulary:**

Special, important, caretaker, protector

**Activity:**

Children will read stories about children from other places and discuss the geographic environments of these places. How are they the same or different from ours?  
Children will use adjectives to discuss differences in dress and answer, “Where we get our clothes? How do our type of clothes relate to our environment?”

**Wrap-Up (Closure)**

Children will feel good about themselves and their families by listing ways they protect the environment.


**Evaluation:**

Children will write a story or draw a special picture about themselves depicting how they are a caretaker of the environment.

**Extensions:**

Using maps of USA and World students will discuss the environment as it relates to weather, geographic location, topography and cultural differences

**New Jersey Core Curriculum Content Standards Addressed:**

Cross Content Workplace Readiness ___1 ___2 ___3 ___4 ___5	Visual and Performing Arts and ___1.1 ___1.2 ___1.3 ___1.4 ___1.5 ___1.6	Comprehensive Health and Physical Education ✓2.1 ___2.2 ___2.3 ___2.4 ___2.5 ✓2.6	Language Arts Literacy and ___3.1 ___3.2 ___3.3 ✓3.4 ___3.5
Mathematics ___4.1 ___4.2 ___4.3 ___4.4 ___4.5 ___4.6 ___4.7 ___4.8 ___4.9 ___4.10 ___4.11 ___4.12 ___4.13 ___4.14 ___4.15 ___4.16	Science ___5.1 ___5.2 ___5.3 ___5.4 ___5.5 ___5.6 ___5.7 ___5.8 ___5.9 ___5.10 ___5.11 ___5.12	Social Studies ___6.1 ___6.2 ___6.3 ✓6.4 ✓6.5 ___6.6 ___6.7 ✓6.8 ___6.9	World Languages ✓7.1 ___7.2 



## Elementary Curriculum Development Project (Grades K-3)

<b>Activity Focus:</b> Barnegat Bay Estuary	<b>Grade Level:</b> 2 - 3
---	---------------------------

### Lesson Plan: How Culture and Growth Has Changed the Shore Area

**Goal:**

To demonstrate how the shore area has changed due to culture and growth

**Objective(s): Students will ...**

Students will understand how civilization has impacted the natural environment.

**Introduction:**

- Show pictures of the environment depicting the past and present. Talk about how things have changed .
- Look at old maps of area, views from the air, - then and now.
- Discuss reasons for the change.
- Depict what the future will look like. Why?

**Key Vocabulary:**

Change, evolve, different, cause, effect

**Activity:**

Using markers, pens, pencils, crayons, make postcards depicting the past, the present and the future showing how one area has changed and will continue to change over time.

**Wrap-Up (Closure)**

“Mail” postcards to other students in class and “share” postcards.


**Evaluation:**

- Have students interpret each other’s postcards through discussion.
- Have students write a story about the change they see or that they predict for the future.

**Extensions:**

Invite a local historian to class to talk about the changes. Have students develop questions for the historian regarding these changes.

**New Jersey Core Curriculum Content Standards Addressed:**

Cross Content Workplace Readiness ___1 ___2 ✓ 3 ___4 ___5	Visual and Performing Arts and ✓ 1.1 ___1.2 ✓ 1.3 ___1.4 ___1.5 ___1.6	Comprehensive Health and Physical Education ___2.1 ___2.2 ___2.3 ___2.4 ___2.5 ___2.6	Language Arts Literacy and ✓ 3.1 ✓ 3.2 ✓ 3.3 ✓ 3.4 ✓ 3.5
Mathematics ___4.1 ___4.2 ✓ 4.3 ___4.4 ___4.5 ✓ 4.6 ___4.7 ___4.8 ___4.9 ___4.10 ✓ 4.11 ___4.12 ___4.13 ___4.14 ___4.15 ___4.16	Science ✓ 5.1 ___5.2 ___5.3 ___5.4 ___5.5 ___5.6 ___5.7 ___5.8 ___5.9 ___5.10 ___5.11 ✓ 5.12	Social Studies ___6.1 ___6.2 ___6.3 ___6.4 ___6.5 ___6.6 ___6.7 ✓ 6.8 ✓ 6.9	World Languages ___7.1 ___7.2 



### Elementary Curriculum Development Project (Grades K-3)

<b>Activity Focus:</b> Barnegat Bay Estuary	<b>Grade Level:</b> 3
---	-----------------------

#### Lesson Plan: Connecting Our Cultural and Our Natural Resources:

##### Goal:

To help students become more aware of our cultural and natural resources.

##### Objective(s): Students will ...

1. Identify and list cultural and natural resources.
2. Interpret information by collecting and classifying magazine pictures.
3. Locate places on a map.

##### Introduction:

Review our role in the American Revolution; Joshua Huddy, the Block House, and the past and present uses of our natural resources.

##### Key Vocabulary:

Natural resource, charcoal, salt marshes, pinelands, farming, fishing, recreation

##### Activity:

1. Use an Ocean County map to locate pinelands, barrier islands, Barnegat Bay, Toms River, salt marshes, etc.
2. Discuss uses of salt, charcoal, cranberries, and blueberries.
3. Ask students to identify different local industries, farming, fishing, and recreational activities.
4. List some of these activities.
5. Have students cut out and collect magazine pictures from NJ magazines and local brochures of cultural or natural resources discussed.

##### Wrap-Up (Closure)


1. Make a large map of Ocean County, have students put their pictures in the appropriate places on the map to make a collage.
2. Students will then explain why they chose their picture(s) and tell why they put it on the map.

##### Evaluation:

Review student checklist/rubric for project completion.

**Extensions:** Display map collage, use computer to find out more about Ocean County.

##### New Jersey Core Curriculum Content Standards Addressed:

Cross Content Workplace Readiness ✓ 1 ✓ 2 ___3 ___4 ___5	Visual and Performing Arts and ___1.1 ___1.2 ✓1.3 ✓1.4 ___1.5 ___1.6	Comprehensive Health and Physical Education ___2.1 ___2.2 ___2.3 ___2.4 ___2.5 ___2.6	Language Arts Literacy and ✓3.1 ✓3.2 ___3.3 ___3.4 ___3.5
Mathematics ___4.1 ___4.2 ___4.3 ___4.4 ___4.5 ___4.6 ___4.7 ___4.8 ___4.9 ___4.10 ___4.11 ___4.12 ___4.13 ___4.14 ___4.15 ___4.16	Science ✓5.1 ✓5.2 ___5.3 ___5.4 ___5.5 ___5.6 ✓5.7 ___5.8 ___5.9 ___5.10 ___5.11 ___5.12	Social Studies ___6.1 ___6.2 ✓6.3 ___6.4 ___6.5 ✓6.6 ___6.7 ___6.8 ✓6.9	World Languages ___7.1 ___7.2 



# Elementary Curriculum Development Project (Grades K-3)

<b>Activity Focus: Barnegat Bay Estuary</b>	<b>Grade Level: 3</b>
---	-----------------------

## Lesson Plan: The Fishing Industrys’ Impact on the Watershed

### Goal:

Students discover how the watershed is impacted by the fishing industry.

### Objective(s): Students will ...

Learn about the fishing industry and its effect on the Barnegat Bay watershed.

### Introduction:

Show photos of fishing industry workers, tools, and use maps to show location.

### Key Vocabulary:

Watershed, draggers, clammers, vessel, Barnegat Bay

### Activity:

A local fisherman will come and tell the class about his job.

He will discuss how fishing impacts the watershed area and how regulations of the land and water impact the fishing industry.

### Wrap-Up (Closure)

Question and answer period

### Evaluation:

Students will be evaluated on their participation.

Students will write a short story or poem about the fishing industry’s impact on the watershed.


### Extensions:

Look in magazines and make a seashore collage.

Read a book about the Barnegat Bay Watershed.

Search the internet for information about the Barnegat Bay Watershed.

## New Jersey Core Curriculum Content Standards Addressed:

Cross Content Workplace Readines <input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input checked="" type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	Visual and Performing Arts and <input type="checkbox"/> 1.1 <input type="checkbox"/> 1.2 <input checked="" type="checkbox"/> 1.3 <input type="checkbox"/> 1.4 <input type="checkbox"/> 1.5 <input type="checkbox"/> 1.6	Comprehensive Health and Physical Education <input type="checkbox"/> 2.1 <input type="checkbox"/> 2.2 <input type="checkbox"/> 2.3 <input type="checkbox"/> 2.4 <input type="checkbox"/> 2.5 <input type="checkbox"/> 2.6	Language Arts Literacy and <input type="checkbox"/> 3.1 <input checked="" type="checkbox"/> 3.2 <input type="checkbox"/> 3.3 <input type="checkbox"/> 3.4 <input checked="" type="checkbox"/> 3.5
Mathematics <input type="checkbox"/> 4.1 <input type="checkbox"/> 4.2 <input type="checkbox"/> 4.3 <input type="checkbox"/> 4.4 <input type="checkbox"/> 4.5 <input type="checkbox"/> 4.6 <input type="checkbox"/> 4.7 <input type="checkbox"/> 4.8 <input type="checkbox"/> 4.9 <input type="checkbox"/> 4.10 <input type="checkbox"/> 4.11 <input type="checkbox"/> 4.12 <input type="checkbox"/> 4.13 <input type="checkbox"/> 4.14 <input type="checkbox"/> 4.15 <input type="checkbox"/> 4.16	Science <input type="checkbox"/> 5.1 <input type="checkbox"/> 5.2 <input checked="" type="checkbox"/> 5.3 <input type="checkbox"/> 5.4 <input type="checkbox"/> 5.5 <input type="checkbox"/> 5.6 <input type="checkbox"/> 5.7 <input type="checkbox"/> 5.8 <input type="checkbox"/> 5.9 <input type="checkbox"/> 5.10 <input type="checkbox"/> 5.11 <input type="checkbox"/> 5.12	Social Studies <input type="checkbox"/> 6.1 <input type="checkbox"/> 6.2 <input type="checkbox"/> 6.3 <input type="checkbox"/> 6.4 <input type="checkbox"/> 6.5 <input type="checkbox"/> 6.6 <input type="checkbox"/> 6.7 <input type="checkbox"/> 6.8 <input checked="" type="checkbox"/> 6.9	World Languages <input type="checkbox"/> 7.1 <input type="checkbox"/> 7.2 

**Cross Content Workplace Readiness Standards –**

1. All students will develop career planning and workplace readiness skills.
2. All students will use technology, information and other tools.
3. All students will use critical thinking, decision-making, and problem-solving skills.
4. All students will demonstrate self-management skills.
5. All students will apply safety principles.

**Visual and Performing Arts Standards -**

- 1.1 All students will acquire knowledge and skills that increase aesthetic awareness in dance, music, theater, and visual arts.
- 1.2 All students will refine perceptual, intellectual, physical, and technical skills through creating dance, music, theater, and/or visual arts.
- 1.3 All students will utilize arts elements and arts media to produce artistic products and performances.
- 1.4 All students will demonstrate knowledge of the process of critique.
- 1.5 All students will identify the various historical, social, and cultural influences and traditions which have generated artistic accomplishments throughout the ages and which continue to shape contemporary arts.
- 1.6 All students will develop design skills for planning the form and function of space, structures, objects, sound, and events.

**Comprehensive Health and Physical Education Standards –**

- 2.1 All students will learn health promotion and disease prevention concepts and health-enhancing behaviors.
- 2.2 All students will learn health-enhancing personal, interpersonal, and life skills.
- 2.3 All students will learn the physical, mental, emotional, and social effects of the use and abuse of alcohol, tobacco, and other drugs.
- 2.4 All students will learn the biological, social, cultural, and psychological aspects of human sexuality and family life.
- 2.5 All students will learn and apply movement concepts and skills that foster participation in physical activities throughout life.
- 2.6 All students will learn and apply health-related fitness concepts.

**Language Arts Literacy Standards**

- 3.1 All students will speak for a variety of real purposes and audiences.
- 3.2 All students will listen actively in a variety of situations to information from a variety of sources.
- 3.3 All students will write in clear, concise, organized language that varies in content and form for different audiences and purposes.
- 3.4 All students will read various materials and texts with comprehension and critical analysis.
- 3.5 All students will view, understand, and use nontextual visual information.

**Mathematics Standards**

- 4.1 All students will develop the ability to pose and solve mathematical problems in mathematics, other disciplines, and everyday experiences.
- 4.2 All students will communicate mathematically through written, oral, symbolic, and visual forms of expression.
- 4.3 All students will connect mathematics to other learning by understanding the interrelationships of mathematical ideas and the roles that mathematics and mathematical modeling play in other disciplines and in life.
- 4.4 All students will develop reasoning ability and will become self-reliant, independent mathematical thinkers.
- 4.5 All students will regularly and routinely use calculators, computers, manipulatives, and other mathematical tools to enhance mathematical thinking, understanding, and power.
- 4.6 All students will develop number sense and an ability to represent numbers in a variety of forms and use numbers in diverse situations.
- 4.7 All students will develop spatial sense and an ability to use geometric properties and relationships to solve problems in mathematics and in everyday life.
- 4.8 All students will understand, select, and apply various methods of performing numerical operations.
- 4.9 All students will develop an understanding of and will use measurement to describe and analyze phenomena.
- 4.10 All students will use a variety of estimation strategies and recognize situations in which estimation is appropriate.
- 4.11 All students will develop an understanding of patterns, relationships, and functions and will use them to represent and explain real-world phenomena.

**Mathematics Standards (con't)**

- 4.12 All students will develop an understanding of statistics and probability and will use them to describe sets of data, model situations, and support appropriate inferences and arguments.
- 4.13 All students will develop an understanding of algebraic concepts and processes and will use them to represent and analyze relationships among variable quantities and to solve problems.
- 4.14 All students will apply the concepts and methods of discrete mathematics to model and explore a variety of practical situations.
- 4.15 All students will develop an understanding of the conceptual building blocks of calculus and will use them to model and analyze natural phenomena.
- 4.16 All students will demonstrate high levels of mathematical thought through experiences which extend beyond traditional computation, algebra, and geometry

**Science Standards**

- 5.1 All students will learn to identify systems of interacting components and understand how their interactions combine to produce the overall behavior of the system.
- 5.2 All students will develop problem-solving, decision-making and inquiry skills, reflected by formulating usable questions and hypotheses, planning experiments, conducting systematic observations, interpreting and analyzing data, drawing conclusions, and communicating results.
- 5.3 All students will develop an understanding of how people of various cultures have contributed to the advancement of science and technology, and how major discoveries and events have advanced science and technology.
- 5.4 All students will develop an understanding of technology as an application of scientific principles.
- 5.5 All students will integrate mathematics as a tool for problem solving in science, and as a means of expressing and/or modeling scientific theories.
- 5.6 All students will gain an understanding of the structure, characteristics, and basic needs of organisms.
- 5.7 All students will investigate the diversity of life.
- 5.8 All students will gain an understanding of the structure and behavior of matter.
- 5.9 All students will gain an understanding of natural laws as they apply to motion, forces, and energy transformations.
- 5.10 All students will gain an understanding of the structure, dynamics, and geophysical systems of the earth.
- 5.11 All students will gain an understanding of the origin, evolution, and structure of the universe.
- 5.12 All students will develop an understanding of the environment as a system of interdependent components affected by human activity and natural phenomena.

**Social Studies Standards**

- 6.1 All students will learn democratic citizenship and how to participate in the constitutional system of government of the United States.
- 6.2 All students will learn democratic citizenship through the humanities, by studying literature, art, history and philosophy, and related fields.
- 6.3 All students will acquire historical understanding of political and diplomatic ideas, forces, and institutions throughout the history of New Jersey, the United States, and the world.
- 6.4 All students will acquire historical understanding of societal ideas and forces throughout the history of New Jersey, the United States, and the world.
- 6.5 All students will acquire historical understanding of varying cultures throughout the history of New Jersey, the United States, and the world.
- 6.6 All students will acquire historical understanding of economic forces, ideas, and institutions throughout the history of New Jersey, the United States, and the world.
- 6.7 All students will acquire geographical understanding by studying the world in spatial terms.
- 6.8 All students will acquire geographical understanding by studying human systems in geography.
- 6.9 All students will acquire geographical understanding by studying the environment and society.

**World Languages Standards**

- 7.1 All students will be able to communicate at a basic literacy level in at least one language other than English.
- 7.2 All students will be able to demonstrate an understanding of the interrelationship between language and culture for at least one world language in addition to English.