"Oceans of Fun" Theme Unit

An Honors Thesis (HONRS 499)

by

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Purpose of Thesis

This theme unit about the ocean community emphasizes learning across the curriculum. Throughout the unit students become aware of the beauty, wonder, and value of one of the earth's last frontiers by participating in interdisciplinary hands-on activities. Students learn that they can play an important role in keeping our oceans clean and saving the ocean life. This approach motivates students to participate and take control of their own learning and make the learning more meaningful.
OCEANS OF FUN!!!!
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"Oceans of Fun"  

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I. PURPOSE OF THE UNIT:

The purpose of this unit is to open students' eyes to the beauty, wonder, and value of one of the earth's last frontiers--the ocean. Students will also learn the importance of keeping the oceans clean and what their role and responsibility can be in that important job. Students' learning will take place through a variety of interdisciplinary activities with an emphasis on "hands-on" experiences.

II. DURATION OF THE UNIT:

This unit will take approximately three weeks to complete. A good time of the year in which to start the unit is the week of April 22, in which Earth Day takes place.

III. GRADE LEVEL:

This unit has been created for the second through third grade levels.
IV. Objectives

A. Generalizations

1. In comparison, water covers more of the earth than our land does.

2. Water in the ocean is salty.

3. Ocean water does not always look blue.

4. The temperature of the ocean varies.

5. The ocean floor has many of the same formations that we see on the land and is composed of materials that we may see on our beaches.

6. Marine animals are all the animals that live in the ocean.

7. The oceans are quickly becoming polluted for many reasons.

8. All living things in the ocean are part of the ocean food chain.

B. Basic Skills

1. The students will complete all assignments.

2. The students will improve their listening skills.

3. The students will participate in all activities.

4. The students will follow directions.

5. The students will follow classroom rules.

6. The students will successfully work in small cooperative groups.

C. Attitude and Appreciations

1. The students will become aware of the vastness of oceans.

2. The students will realize the beauty of oceans.

3. The students will become aware of the value and resourcefulness of the ocean.

4. The students will realize that they play a role in saving our oceans and marine life.
V. INITIATION OF THE UNIT:

A. Before unit is started

1. Send home parent information letter—Appendix p. 33
2. Transform classroom into an "Ocean Community"
   a. decorate the doorway as a sandcastle—App. p. 41
   b. hang sign above door reading "Oceans of Fun"
   c. display pictures of ocean creatures around the classroom
   d. have learning centers set up (see "Learning Center" section p. 68-89)
   e. hang up bulletin boards (see "Bulletin Board" section p. 63-67)

B. First day of the unit

1. Explain to the students that they are no longer students in a classroom, but rather ocean explorers in an Ocean Community.
2. Introduce daily sandcastle journal—Appendix p. 42
3. Use KWL strategy
   a. On a chart, make 3 categories: one for K, one for W, and one for L.
   b. Ask students what they already know about the ocean and record under K category; ask students what they want to learn and record under W category; tell students that category L will be completed at the completion of the unit
4. Share with students pictures from the book THE OCEAN WORLD OF JACQUES COUSTEAU as discussion takes place throughout the KWL strategy (see bibliography in "Teacher Resource" section p. 26).
5. Complete stuffed fish art activity—Appendix p. 50.
CONTENT
AND
RELATED ACTIVITIES
VI. Content and Related Activities

A. In comparison, water covers more of the earth than our land does.

Concepts

1. There are 5 major oceans of the world: Pacific, Atlantic, Indian, Arctic Antarctic.

2. Oceans cover about 70% of our earth.

3. The biggest ocean is the Pacific covering 64,000,000 square miles.

4. The average depth of the oceans is 13,000 feet.

Activities

1. Initiating--Read The Mystery of the Missing Jewel Fish. Have the students tell which 4 oceans were mentioned in the story. List them on a chart or the chalkboard.

2. Developing--Show the students a world map. Have students locate the oceans. List the 5th major ocean not mentioned in the story and locate it on the map. Divide students into groups of about 3 to 4. Give each group a graph (Appendix p.47). Make a bigger graph to post on the board. Give each group a listing of the sizes of the oceans (Appendix p.46). Show students how to graph the size of the first ocean and have them finish the rest. Let them discover which is the largest. Show students a 12 inch ruler. Explain that the average depth of the ocean is 13,000 feet deep which is 13,000 rulers stacked end to end high.

3. Concluding--In their groups, have students make a list of how big the oceans are from largest to smallest. Give each student a world map worksheet to complete (Appendix p.48).
B. Water in the ocean is salty.

Concepts

1. Salt in the ocean occurs in such a large quantity that if the water evaporates, the salt will be left in an observable form.

2. The salt in oceans is what makes oceans different from lakes, rivers, and ponds.

3. Most of the salt in the oceans is the same kind of salt we eat, which is a combination of the two elements sodium and chlorine.

Activities

1. Initiating—Set up a taste test for those who wish to participate. Have them taste a cup of regular water and a cup of salt water. Have them decide which is regular water and what is mixed in the other water.

2. Developing—After students have distinguished between the regular and salt water, explain that the cup of regular water represents the water in a lake, river, pond, or stream. The salt water represents the water that is in oceans. Divide students into groups of two. Give each group a Dixie cup with a small amount of table salt in it. Explain that the salt that is in the ocean is just like the salt we eat on our food. Allow them to taste the salt if they wish. In their groups of two, have them complete the "Salty Water Evaporation" experiment (Appendix p.49).

3. Concluding—Have students complete the art project, "Saltwater Painting" (Appendix p.50).
C. Ocean water does not always look blue.

<table>
<thead>
<tr>
<th>Concepts</th>
<th>Activities</th>
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<tr>
<td>1. Bodies of water, whether oceans or seas, may appear a color other than blue for many reasons.</td>
<td>1. Initiating-Ask students what color first comes to their mind when they think of the ocean. Ask students if they think that all oceans or seas look blue.</td>
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<tr>
<td>2. Some bodies of water are named after their color.</td>
<td>2. Developing-Explain to students that not all oceans look blue. Explain that there are a number of reasons for this and in fact, many oceans are named for the color that they appear. Write the following on the board: Yellow Sea, Red Sea, White Sea, Black Sea. Ask students if they have ever heard of these seas before. Explain that these seas are actually named after the color that they appear. Give students a copy of a world map and have them try to locate the seas. As the students find them, show the seas' location on a big world map. Explain to students that the next activity will show them some of the reasons why these oceans appear a color other than blue.</td>
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<td>3. Concluding-Divide students into groups of 4 or 5 per group. Give each group a chart (Appendix p.52). Provide each group with 4 encyclopedias, one for each sea. As a group, the students are to look up the reasons behind the oceans' color and write the reason in the chart. When the groups are finished, discuss the groups' findings as a whole class.</td>
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### D. The temperature of the ocean varies.

**Concepts**

1. The water in the ocean is not all the same temperature.
2. The water gets colder the deeper you go into the ocean.

**Activities**

1. **Initiating**—Show students a thermometer, preferably one for cooking. Ask them what it is, and what it is used for. Draw a thermometer on the board and show students how to read one. Explain that they will be learning about the temperature of the ocean.

2. **Developing**—Ask students if they think that the water in the ocean is all the same temperature. Give each student a copy of the worksheet (Appendix p.53). Discuss the questions at the beginning of the worksheet, then complete the activity. Once the activity is completed, come back together as a class and discuss the findings. Now, direct students attention to the fact that the water gets colder the deeper you go into the ocean. Complete "Now That's Cold" activity (Appendix p.54).

3. **Concluding**—Pair students up in 2's. Give each pair a glass and a thermometer. Have students find out the temperature of their water and record it on the board. On a chart, with the students, record the temperatures from warmest to coldest. This will reinforce the fact that the temperatures in the ocean do vary and drop in degrees the deeper you go down.
E. The ocean floor has many of the same formations that we see on the land and is composed of materials that we may see on our beaches.

Concepts

1. The rim of underwater land is called the continental shelf.

2. The continental slope is the slope that is beginning of the big dropoff to the ocean floor.

3. The floor of the ocean is covered with mud, sand, plants, rocks, and pebbles.

4. The ocean floor is a series of hills, valleys, and mountains.

Activities

1. Initiating-Show students pictures of the ocean floor. Ask them what they think the floor is made of. Record students responses on the board. Ask students what they think the floor looks like: flat, hilly, etc. Record students responses.

2. Developing-Distribute to student a copy of Appendix p.56. Discuss the information on this page with students. Show the students pictures which depict these features of the floor from a variety of books. Distribute App. p.55 to the students. Instruct students to complete the page on their own.

3. Concluding-Complete the "Layers of the Ocean Floor" activity on Appendix p.57
F. Marine animals are all of the animals that live in the water.

Concepts

1. Animals of all shapes and sizes live in the ocean.
2. Animals live at different levels of the oceans.
3. Some animals' names paint a picture in our mind of what they look like.
4. Animals in the ocean have water proof skin.

Activities

1. Initiating—Play the record "Songs of the Humpback Whale" by Roger Payne. Ask students if they can identify the sea animal that is on the record. Ask students to start naming animals that live in the ocean. Record their responses on the board.

2. Developing—Tell students that now that we have a start on what animals live in the ocean, we are going to talk about how they live in the water. Ask students to name some ways that we keep from getting wet. Students should name umbrellas, raincoats, etc. Explain that the animals have skin that is water-proof much like the items just mentioned. Ask if students think that all the animals live in the same part of the ocean. If they did, what would be the problem? Allow student to discover that they all live at different depths. Share with students the picture on Appendix p.58.* (This next part could be finished on the next day.) Reread the story The Mystery of the Missing Jewel Fish. When finished, have students name the animals in the story. List them on the board. Explain that these are animals that are not as well known as the ones listed in initiating. These fish remind us of something else. Complete activity on Appendix p.59).
4. Concluding-Make a "Meet the Sea Creatures" book. Have students pick their favorite sea animal, one we have talked about or have not. Students will use encyclopedias and library books to gather their information. Have the students draw a picture of the animal and write down its weight, length, diet, and any other information. Put each student’s project into one big class book.
G. The oceans are quickly becoming polluted, endangering the sea life.

Concepts

1. Many sources of pollution are polluting our oceans: our garbage, factories, oil spills from oil rigs, etc.

2. People have the responsibility of helping keep the oceans clean.

Activities

1. Initiating-Show students a bucket of clean water and a bucket of water with some dirt, paper, etc. Ask students what has happened to the dirty water. Ask students which they would rather live in if they were an animal in the ocean.

2. Developing-Ask students if they realize that people all over the world are contributing to the pollution of the oceans. Complete "Ahoy, garbage!" activity on Appendix p.60. Tell students that another problem besides garbage is oil spills from oil rigs. Discuss the problem of who is going to have to clean up the spills and how it is done.

3. Concluding-Complete "Pollution Solution" activity on Appendix p.60. This activity will show students how difficult and sometimes frustrating it is to clean up someone else's mess. Experiencing the difficulty and frustration, will hopefully show students how important it is to do their part in not making a mess for someone else to clean up.
H. All living things in the ocean are part of the ocean food chain.

Concepts

1. The food chain begins with the plants in the ocean. The small creatures and fish eat plants, then the medium-size fish eat the small ones. Then the big fish eat the medium ones. The chain ends with the people eating the larger fish.

2. The pollution in the ocean is endangering the sea life which will harm the food chain.

Activities

1. Initiating—Show students a paper chain. Direct their attention to the fact that each link in the chain depends on the link behind it. Ask them if they know what a food chain is. Use the example of a simple chain such as, a cow eating grass and people eating the cows. Explain that it is a food chain here on the land. Tell them that they are going to find out about the food chain in the ocean.

2. Developing—Have students think about what lives in the ocean. Ask them what the first part of the chain would be. Let them build upon it from there. Complete "The Ocean Food Chain" activity on Appendix p.61.

3. Concluding—Explain that the pollution we talked about in the previous lesson can affect the food chain. Complete "Pollution and the Food Chain" activity on Appendix p.62.

After this lesson is completed and the unit is complete, a field trip to Chicago's Shedd Aquarium will be scheduled.
V. CULMINATING ACTIVITIES

The last day of the unit will be an ocean community celebration party. Parents will be invited to join their children in the festivities. The students will write the invitations beforehand.

The activities for the party are as follows:
A. Students will complete the L section of the KWL chart, in which they will list what they have learned about oceans.
B. Students will share some of the work that they completed during the unit such as, stories, poems, art, etc.
C. Parents will be encouraged to look around the room at the decorations and bulletin boards.
D. Refreshments will be served
   1. Edible aquariums
   2. Goldfish crackers
   3. Fish-shaped cookies
   4. Blue Kool-Aid
E. The movie THE LITTLE MERMAID by Walt Disney will be shown.
EVALUATION
Evaluation

Students' grades will be determined by the following criteria:

Unit Test 40%
3 Quizzes 30%
Worksheets 10%
Completion of learning centers 10%
Participation 10%
TOTAL 100%

Grading Scale:

100%-90% A
89%-80% B
79%-70% C
69%-60% D
59% and below F
Quiz #1  Oceans of Fun!  Name_______

Directions: Read each sentence. If the sentence is true, circle the "T". If the sentence is not true, circle "F".

1. T  F  The ocean's water is salty.
2. T  F  There are only two major oceans on the earth.
3. T  F  The Pacific Ocean is the largest ocean on the earth.
4. T  F  The oceans cover only 10% of the earth.
5. T  F  The temperature of the ocean gets colder as you go down deeper.
Oceans of Fun!  Name____________________

Directions: Read each sentence. If it is true, circle the "T". If it is not true, circle the "F".

1. T F The temperature of the water in the ocean is not all the same.
2. T F The water in the ocean gets warmer the deeper you go.
3. T F The rim of underwater land is called the continental shelf.
4. T F The ocean floor is all flat with no hills.
5. T F The ocean floor is made up of pebbles, mud, sand, rocks, and plants.
Quiz #3  Oceans of Fun!  Name________________

Directions: Read each question and write down a complete answer.

1. List 4 animals that live in the ocean.

2. List 3 reasons why the ocean is becoming polluted.

3. Show the ocean food chain by drawing it in pictures.
Directions: Circle the answer that best completes the statement or best answers the question.

1. How many major world oceans did we learn about?
   a. 8
   b. 5
   c. 2

2. Which ocean is the largest?
   a. Indian
   b. Arctic
   c. Pacific

3. The rim of underwater land is called the
   a. continental slope
   b. continental shelf
   c. valley
4. As you go deeper into the ocean, the water temperature
   a. stays the same
   b. gets warmer
   c. gets colder

Directions: Read each sentence. If it is true, circle the "T". If it is not true, circle the "F".

5. T F The oceans cover about 70% of our land.

6. T F The ocean is fresh water.

7. T F Oceans do not always look blue.
Directions: Answer each question with the best answer.

8. List 3 reasons why our oceans are becoming polluted.

9. Write out the ocean food chain.

10. How can you help to keep the oceans clean?

* What did you like best about this unit?

* What did you like least about this unit?
A WHALE OF A JOB!

PRESENTED TO:

FOR:

Teacher

Date
Keeping Track of Activities Completed in Centers

1. Make each student a fishing pole out of construction paper. Make a number of fish out of construction paper. Each time the student finishes a required activity, a fish can be placed on the end of his/her fishing pole.

2. Make each student an octopus. When the student finishes an activity at a center, put a sticker on the tenacle on the octopus. Students will know how many activities they have completed and how many more they need to do to meet the requirement.

3. Make students a pattern of a sea creature. Put a sticker on the creature when an activity is completed.
LITERATURE
AND
RESOURCES
TEACHER RESOURCES


VIDEOS

The Little Mermaid. Walt Disney.


COMPUTER SOFTWARE

Audubon Wildlife Adventures: Whales
INFORMATION AND SUPPLIES

1. Center for Environmental Education
   624 9th Street, NW
   Washington, DC 20001

2. Aquarium Stock Co., Inc.
   31 Warren Street
   New York, N.Y. 10007
   OR
   8070 Beverly Blvd.
   Los Angeles, CA 90048

3. Coral Reefs Exhibits
   Box 1005 Kendall Dr.
   Miami, Florida 33156

4. Keys Marine Life Unlimited
   P.O. Box 426
   Key Largo, Florida 33037

5. Marine World
   3452 W. Devon Ave.
   Lincolnwood, IL 60645
FIELD TRIPS AND GUEST SPEAKERS

Field trips:
1. Chicago's Shedd Aquarium
2. Brookfield Zoo's ocean and fish exhibits

Guest Speakers:
1. marine biologist
2. fisherman
3. environmentalist
4. activist for "Save the Whales" campaign
5. worker from the Shedd Aquarium
6. worker from the Brookfield Zoo
STUDENT LITERATURE

NON-FICTION


STUDENT LITERATURE

FICTION


POETRY


APPENDIX
Dear Parents,

Next week we will be starting an exciting theme unit about the ocean community. Throughout the unit we will be participating in many hands-on activities which will emphasize learning across the curriculum. Our classroom will be transformed into an ocean environment. We invite you to stop by and take a look around. If you would like to help out in any way, such as bringing in objects for display, sharing a book, helping out with room decorations, volunteering to help with the ocean party at the end of the unit, or going along on the field trip to Shedd Aquarium, please fill out the form below and return.

Thank you for your support!

__________________________________________

Date

I would be willing to do the following for the ocean unit:

__________________________________________

__________________________________________

__________________________________________

__________________________________________

__________________________________________

__________________________________________

signature __________________________ date ____________
Patterns
Pattern
starfish
Pattern jellyfish

Pattern
sea horse
Pattern

Crab

Pattern fish

SANDCASTLE DOORWAY

Decorate the doorway of the classroom like a sandcastle. Using butcher paper, make a sandcastle similar to the one for the daily sandcastle journal which is on the next two pages. Above the door put a sign which reads, "OCEANS OF FUN". This will catch the students' attention and spark their interest and excitement before they even enter the classroom!
1. Provide each student with some type of journal.
2. Enlarge the sandcastle which appears on the next page; under each window will be an activity for students to put in their journal.
3. Students will open one window a day to find out what their journal activity is for that day.
4. The number of activities will correspond with the number of days in the unit.

ACTIVITIES:
* You've discovered a sunken treasure! Write about it. What is it? What will you do with it? How did you find it?
* List all of the things you can do at the beach.
* Write three safety tips for playing in the ocean.
* Draw and write about your favorite seafood.
* Design a T-shirt about oceans. Draw it.
* List some things in the grocery store that come from the ocean.
* Write ocean words that begin with these letters.
  C
  E
  A
  N
* You just went scuba diving for the first time. Tell your best friend about by writing him/her a letter.
* You went fishing with your friends in the Atlantic Ocean. You just caught a sea animal that you have never seen before! Explain the animal and give it a name.