

# OCEANS ALIVE

## UNIT OVERVIEW

Water, an extremely precious resource, is the basis for this exciting, hands-on unit on oceans. “**Part I - Core Teaching Lessons**” will have students playing in the waves, comparing fresh water and salt water, and creating oil spills right in their own classroom. “**Part II - Student Handbook**” is included to supplement all of the Core Lessons. Cooking and art activities from “**Part III - Optional Lessons**” will give students a different perspective about oceans. A student exam to test the students’ knowledge of the information contained in this unit is also included. Set sail for an exciting voyage!

## PART I - CORE TEACHING LESSONS

In this section, students will learn about the Earth’s Oceans. The lesson titles and subsequent activities are as follows:

- |  |                                   |
|--|-----------------------------------|
| 1) <b>Water, Water, Everywhere!</b>            | Unit Introduction, Wordsearch     |
| 2) <b>Sink or Swim</b>                         | Science Experiment                |
| 3) <b>Catch a Wave</b>                         | Wave Formation Experiment         |
| 4) <b>The Tide Will Come, The Tide Will Go</b> | Worksheet                         |
| 5) <b>Exploring Downunder</b>                  | Visualization, Diagram            |
| 6) <b>Hang on to Your Hats!</b>                | Sequencing Activity               |
| 7) <b>Line Up for Lunch</b>                    | Marine Food Web Activity          |
| 8) <b>A “Slick” Slick</b>                      | Brainstorming, Science Experiment |

## PART II - STUDENT HANDBOOK

This section contains student notes that correspond to each of the Core Teaching Lessons. The notes may be used as handouts, on an overhead, or students may copy them from the blackboard into their notebooks.

## PART III - OPTIONAL LESSONS

The following activities are meant to enhance, extend, and supplement the Core Teaching Lessons, building flexibility into the unit.

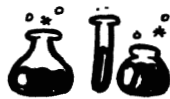
- 1) Novel Study
- 2) The Magic School Bus on the Ocean Floor
- 3) Ocean Floor Pressure Experiment
- 4) Poetry Writing
- 5) Salt Water Experiment
- 6) Treasure Chest of Ocean Words
- 7) Research Project
- 8) Bulletin Boards
- 9) Art Activities
- 10) Cooking Activities
- 11) Oceans Alive Crossword
- 12) Ocean Environments

## PART IV - EXAM AND ANSWER KEY

A sample exam has been included.



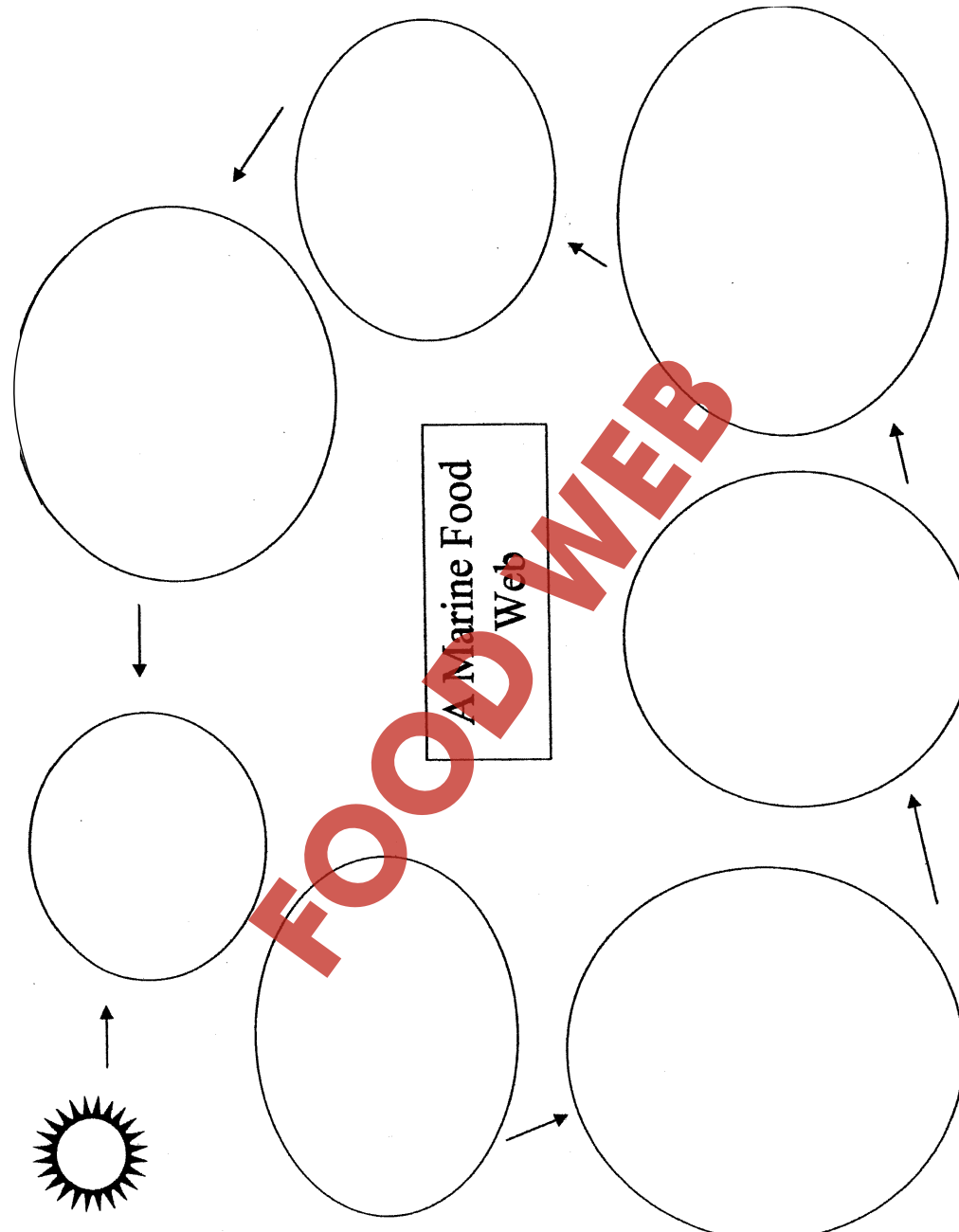
# SCIENCE EXPERIMENT FORM



Name: \_\_\_\_\_

Experiment Title: \_\_\_\_\_

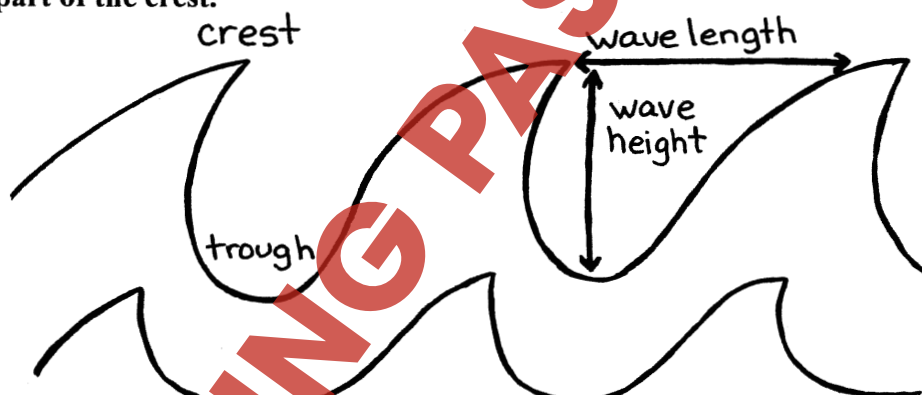
- QUESTION** - What do I want to find out?  
\_\_\_\_\_  
\_\_\_\_\_
- HYPOTHESIS** - What do I think I will find out?  
\_\_\_\_\_  
\_\_\_\_\_
- PROCEDURE** - How will I find out?  
a) \_\_\_\_\_  
b) \_\_\_\_\_  
c) \_\_\_\_\_  
d) \_\_\_\_\_
- RESULTS** - What actually happened?  
\_\_\_\_\_  
\_\_\_\_\_
- CONCLUSION** - What did I learn?  
\_\_\_\_\_  
\_\_\_\_\_



## FORMATION OF WAVES

Waves are created by wind moving over the water. Friction between the surface of the water and the moving air piles the water up into ridges that become waves. When a light breeze blows, small waves called ripples, are formed. When a strong wind blows, whitecaps will form on an ocean.

The crest and the trough are the top and bottom points of a wave. Wave length is the distance between two crests. Wave height is the distance between the most bottom part of the trough and the highest part of the crest.



Tsunami waves are waves that are created by disturbances such as earthquakes, landslides, or underwater volcanoes. The word "tsunami" is a Japanese word meaning "storm-wave". These waves are similar to wind waves because they also have crests and troughs, but they are much greater in size than wind waves and they are much more destructive.

## Optional Lesson #7 - Research Project

Have students research an ocean creature and write a report on it and/or do a presentation. Its never difficult to get students motivated about sharks, whales, dolphins, octopus, coral reefs, underwater treasure, killer whales, manta rays, icebergs and all kinds of ocean-related topics.



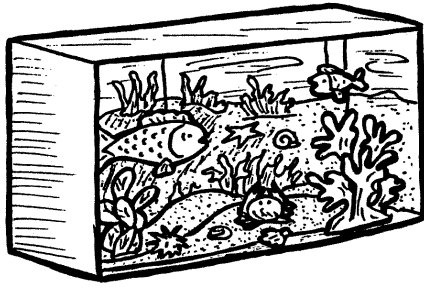
## Optional Lesson #8 - Bulletin Boards

Create a bulletin board using a fishing net, seashells, sand, or any other ocean paraphernalia. A display of books about oceans could be incorporated with the bulletin board.

**Optional Lesson #9 - Art Activities**

There are many art activities that will enhance this unit.

- Make posters about the effects of pollution and display them around the school.
- Make ocean dioramas from shoeboxes.



- Using a white paper plate, create an ocean scene. Have students paint the background blue, then glue sand on the bottom half of the plate. Use construction paper to make fish, shells, plants, rocks, waves, etc. and glue these to the plate. Give each student another paper plate which they cut the bottom out of and then glue on top of the ocean scene. Cover the hole with plastic wrap.



**Optional Lesson #10 - Cooking Activities**

A culminating activity to this unit on oceans might be a class lunch or party. The students could make some of the following to enjoy at their party.

- "Swamp Water" is made by mixing Coke, orange, and Sprite together. (It is good!)
- "Sea" sandwiches could be made from tuna or salmon on bread that has been cut with fish-shaped cookie cutters. A star-shaped cookie cutter could make "starfish" sandwiches.
- "Goldfish" crackers could be served as a snack.
- Dessert could be blueberry Jell-O with blue whales candy set into it to create an ocean effect.
- Teachers may wish to set up a "tasting table" where students could sample other seafood such as oysters, crab, sardines, herring, shrimp, clams, mussels, snails, or even lobster.



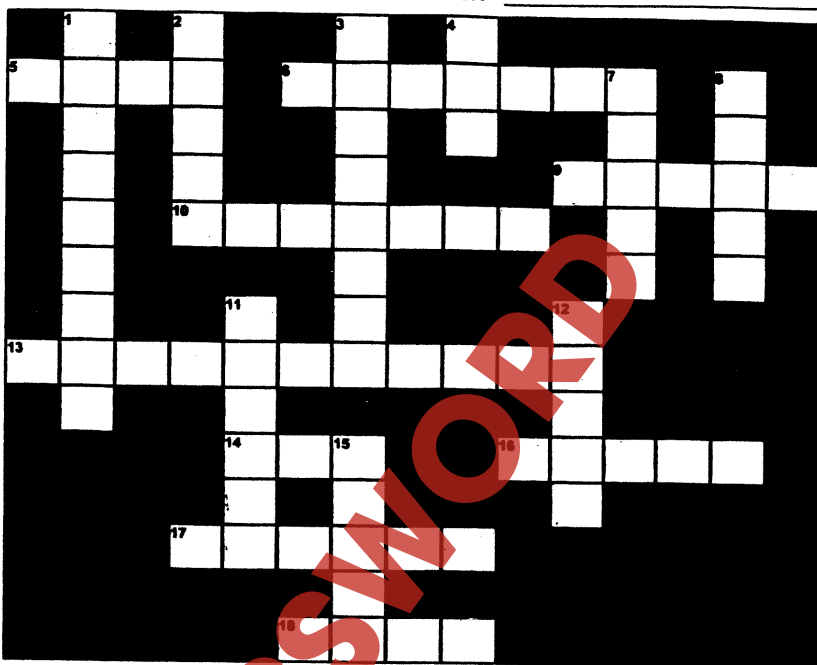
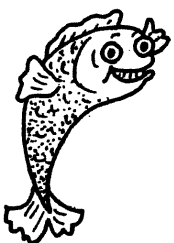
\*\*\*Note\*\*\*

Be aware of any students who have *food allergies*! Seafood allergies are very common. (Just for interest sake, does anyone else notice that kids seem to be more allergic to more things today than when you were a kid?)

The optional activities for this unit are endless! Anything that has to do with water, seas, or oceans could somehow be included.

**OCEANS ALIVE CROSSWORD**

Name: \_\_\_\_\_



**ACROSS:**

- There are \_\_\_\_\_ major oceans covering 71% of our planet.
- The island of Hawaii is located in the \_\_\_\_\_ Ocean.
- Wind moving over water forms \_\_\_\_\_.
- This type of wave can be created by earthquakes and underwater volcanoes.
- On the \_\_\_\_\_ Slope, you can find deep canyons.
- Water vapour is a \_\_\_\_\_ that is produced when water evaporates.
- \_\_\_\_\_ are created by the gravitational pull between the earth and the moon.
- The \_\_\_\_\_ is the bottom point of a wave.
- It is easier to stay afloat in \_\_\_\_\_ water.

**DOWN:**

- \_\_\_\_\_ in the ocean is caused by oil spills and toxic wastes.
- The \_\_\_\_\_ is the top point of a wave.
- Tsunami is a \_\_\_\_\_ word meaning "storm-wave".
- The Exxon Valdez spilled millions of gallons of \_\_\_\_\_ into the ocean.
- Phytoplankton is the most important item of the marine food \_\_\_\_\_.
- Fish and plants are abundant along the continental \_\_\_\_\_.
- Small fish are eaten by \_\_\_\_\_ fish.
- The ocean floor is called the \_\_\_\_\_.
- A "self-contained underwater breathing apparatus" is used by \_\_\_\_\_ divers.



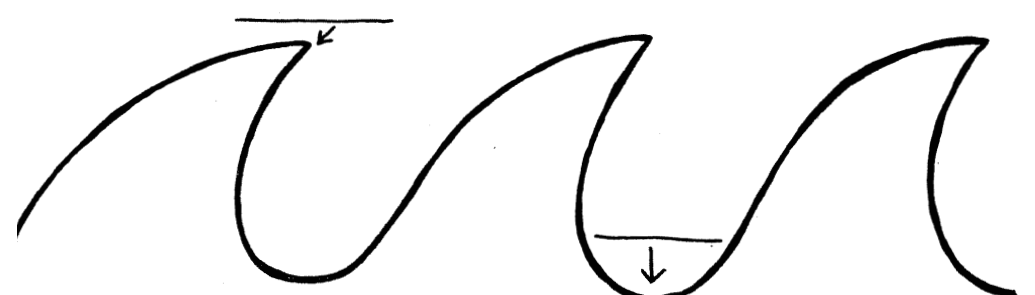
**TEST - OCEANS**

Name: \_\_\_\_\_

**A. Fill in the blanks:**

- The four major oceans are the \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_.
- Together, these oceans cover about \_\_\_\_\_ % of the earth's surface.
- Tides occur \_\_\_\_\_ every twenty-four hours.
- \_\_\_\_\_ is the force that pulls the earth towards the moon.
- \_\_\_\_\_ are the most important living things in the ocean.

**B. Label the following diagram of a wave with its two parts:**





# OCEANS WORDSEARCH



Name: \_\_\_\_\_

Find and circle all the vocabulary words listed below. The words can be found horizontally, vertically, or diagonally. Good luck!

L T T O Y E P B P T Z P Q X M  
 P L W A V E S C O B N D B I Y  
 P M R H U V H P L A N K T O N  
 A O P B W M O U L I L H W A L  
 P O B L M G R N U G M G M Y R  
 C I C U R R E N T W N A A U R  
 T O J A L A Y S I I R R T E H  
 G M P F B V U D O I D S P E F  
 K H I O B I J J N R U E T F M  
 Y Q S A L T Y E I N E F S H Q  
 A Y X H G Y R S A L I R R I I  
 S L O P E R R M Q X D Q E H Q  
 D E G A F L I W C Q K V Z E D  
 U X T F T O F O C O R S B Z P  
 Q X N F O E I H U W V T Q U T



ALGAE  
 CLIMATE  
 CURRENT  
 GRAVITY  
 MARINE

PLANKTON  
 POLLUTION  
 SALTY  
 SHELF  
 SHORE

SLOPE  
 TIDES  
 TOPOGRAPHY  
 TSUNAMI  
 WAVES



# ANSWER KEY

## UNIT #1 - WATER, WATER, EVERYWHERE!

### Objectives and Activities

Students will be introduced to the unit and become familiar with the necessary vocabulary.

### Additional Teaching Strategies

Introduce the unit by using a globe to discuss how the four major oceans are actually connected, forming one large ocean. By turning the globe upside down, students will see how the oceans all come together around the continent of Antarctica. Have students name the oceans.

Using the student notes, have students guess the percentage of the earth's surface that is covered by water. (Answer - 71%) Have students fill in the blank. On the map of the world, have students colour and label the four oceans. This will help reinforce the fact that the oceans are connected.

Have students complete the "Oceans Wordsearch". This activity will introduce students to the vocabulary they will encounter throughout the unit.

### Wordsearch Answer Key

L T T O Y E P B P T Z P Q X M  
 P L W A V E S C O B N D B I Y  
 P M R H U V H P L A N K T O N  
 A O P B W M O U L I L H W A L  
 P O B L M G R N U G M G M Y R  
 C I C U R R E N T W N A A U R  
 T O J A L A Y S I I R R T E H  
 G M P F B V U D O I D S P E F  
 K H I O B I J J N R U E T F M  
 Y Q S A L T Y E I N E F S H Q  
 A Y X H G Y R S A L I R R I I  
 S L O P E R R M Q X D Q E H Q  
 D E G A F L I W C Q K V Z E D  
 U X T F T O F O C O R S B Z P  
 Q X N F O E I H U W V T Q U T