Zoology 2 Notebooking Journal

Below are descriptions of a suggested schedule and the activities included in this notebooking journal. The first three activities are taken directly from the coursework contained in *Exploring Creation with Zoology 2*. The others are additional optional activities coordinating with the book.

Suggested Schedule

A suggested schedule for reading the *Exploring Creation with Zoology 2* text and completing the activities contained in the book and in this journal has been provided. Though not every student or parent will choose to utilize the schedule, those who do may find it very beneficial. Some parents will appreciate having their student's daily reading and assignments organized for them. Older students will find it easy to complete the book and journal by following the schedule on their own. Though the suggested schedule provides for the zoology 2 course to be completed in twenty-eight weeks, two days per week, it is flexible and can be made to fit your goals. The course can be expedited by completing three or four days of science per week. You can lengthen the course by studying science only one day per week. If you wish to do the extra activities found in the Dive Deeper pages, still another day of science can be added. Above all, use the suggested schedule in a way that best suits your family.

Fascinating Facts

Exploring Creation with Zoology 2 contains many facts, ideas and interesting notions. Although oral (verbal) narration is an effective means for retention, your student may wish to record some of the information either through drawing or writing. The Fascinating Facts pages can be used for written narrations. Some of the lessons provide two Fascinating Facts pages for your student's use. If your student is an avid writer, you can access more Fascinating Facts pages to print (free of charge) on the Apologia website. To do so, simply login to www.apologia.com/bookextras and type in this password: Godmadethemswim. These additional pages can be included in this notebooking journal by simply stapling them onto one of the existing Facts pages.

What Do You Remember? Review Questions

These review questions are the same questions asked in the "What Do You Remember?" section found in each lesson of the book. They can be answered orally (verbally) or, for older students, as a written narration assignment. For co-ops or classroom use, these questions may also serve as a way to evaluate how much the students have retained from the reading. However, I would encourage you to review the material with the students before giving the questions as a written narration assignment. This will encourage better retention of the material and increase both the students' confidence and their ability to restate their learning. The answers to the review questions can be found on pages 219 through 223 of *Exploring Creation with Zoology 2*.

Notebooking Assignments, Activities and Projects

The lessons in *Exploring Creation with Zoology 2* offer suggested notebooking assignments, activities and projects typically found at the end of each lesson. Provided in this journal are templates (blank pages with lines for writing or space for drawing) which your student can use for completing these activities. Colored pencils can be used to encourage creative, high quality work. Some projects require the student to use a Scientific Speculation Sheet. These sheets have been included in this notebooking journal. Drawings or pictures of the projects can be pasted onto the Scientific Speculation Sheets.

Scripture Copywork

Incorporating the Word of God in your science studies through Scripture Copywork will provide many benefits to your student. It will encourage stronger faith and memorization of Scripture, as well as better writing, spelling and grammar skills. Each lesson has a corresponding verse for your child to copy, which may be printed or written in cursive.

Vocabulary Crosswords

If you desire to expand your child's studies with vocabulary activities, the Vocabulary Crosswords can be used to review the new words and concepts mentioned in the lesson. Remember, working with the vocabulary in this manner is not a "test" of your child's knowledge, but should be viewed as a reinforcement and reminder of what he has learned. The answers to the Vocabulary Crosswords can be found on pages 194 and 195.

Project Pages

Many of the projects and experiments in *Exploring Creation with Zoology 2* are "hands-on" and therefore cannot be preserved in a notebook. Each lesson in this notebooking journal provides a Project Page in which your student can write about what he did and learned from the various projects and experiments contained in the coursework. Be sure to take pictures of the finished products and glue them onto the Project Pages. Your child will enjoy looking back and remembering the fun he had learning zoology 2!

Cut and Fold Miniature Books

At the back of this journal, you will find Cut and Fold Miniature Book craft activities that correspond with the reading. These miniature books are designed to review the concepts learned in each lesson. Writing lines are provided on the miniature books so your students can record the information they have learned. Some books ask for specific information. Others do not and allow the students to record the facts they found most interesting. Students will cut out the pattern, write what they have learned in the designated places, then assemble the books according to the directions. Paste Pages are included in this journal for each miniature book activity. The Paste Pages provide a place for your students to preserve and display their Cut and Fold Miniature Books. Instructions are included for pasting the miniature books onto the Paste Pages.

These books are entirely optional. Some students thrive with the hands-on approach, while other students do not benefit academically from this type of activity. Allow your students to try the Cut and Fold Miniature Books to see if they enjoy learning in this way.

Dive Deeper

The Dive Deeper suggestions are designed to give your student additional ideas and activities that might enhance his studies such as: experiments, hands-on activities, research and living book titles, as well as audio and video resources. Because these assignments are entirely optional, they are not included in the suggested schedule for completing the notebooking journal.

Field Trip Sheets

Your family may wish to further enhance your studies by visiting a science museum, aquarium or perhaps Sea World. Field Trip Sheets are provided at the back of this notebooking journal to record your visits. You can make a pocket on the back of these sheets to hold any brochures or additional information you receive. Simply glue three edges (sides and bottom) of a half piece of construction paper to the bottom of the Field Trip Sheet.

Final Review

At the end of this journal are 50 questions that review the entire course. They can be answered orally or in writing. This is an optional activity; however, I believe your students would be pleasantly surprised to see how much they know about zoology 2 after answering the questions. The answers to the Final Review can be found on page 196.

Week	Day 1	Day 2
1	Lesson 1 - Aquatic Animals Read pp. 1-6 & Narrate *Begin working on Fascinating Facts about Aquatic Animals Read pp. 6-7 & Narrate *Begin working on Fascinating Facts about the Ocean, Currents and Water	Try This! p. 7 Read pp. 8-11 & Narrate Read pp. 12-15 & Narrate Try This! p. 15
2	Lesson 1 - Aquatic Animals Read p. 16 & Narrate *Written Narration: What Do You Remember? p. 16 *Notebooking Activity: Draw the tides and regions of the ocean floor p. 17	Ocean Box Project: <i>Create an ocean box</i> p. 17 Scripture Copywork Vocabulary Crossword Cut and Fold Miniature Books Experiment: Water Temperature p. 18
3	Lesson 2 - Whales Read pp. 19-21 & Narrate *Begin working on <i>Fascinating Facts about Whales</i> Read pp. 21-24 & Narrate	Read pp. 24-28 & Narrate Try This! p. 28 Read pp. 29-32 & Narrate Try This! p. 32 Read pp. 32-36 & Narrate
4	Lesson 2 - Whales Read pp. 36-38 & Narrate *Written Narration: What Do You Remember? p. 38 *Notebooking Activity: Cetaceans Illustrations p. 39 *Notebooking Activity: Beached Whales Speech p. 39	Ocean Box Project: Add whales to your ocean box p. 39 Scripture Copywork Vocabulary Crossword Cut and Fold Miniature Books Experiment: Sound Travel p. 39
5	Lesson 3 - Seals and Sea Cows Read pp. 41-43 & Narrate *Begin working on <i>Fascinating Facts about Pinnipeds</i> Read pp. 44-47 & Narrate	Read pp. 47-50 & Narrate Read pp. 50-53 & Narrate
6	*Written Narration: What Do You Remember? p. 53 *Notebooking Activity: Pinnipeds Illustrations p. 53 *Notebooking Activity: Petting Manatees Essay p. 53	Ocean Box Project: Add pinnipeds to your ocean box p. 53 Scripture Copywork Vocabulary Crossword Cut and Fold Miniature Books Experiment: Blubber p. 54
7	Lesson 4 - Aquatic Herps Read pp. 55-57 & Narrate *Begin working on Fascinating Facts about Aquatic Herps Try This! p. 57 Read pp. 58-61 & Narrate	Read pp. 61-62 & Narrate Try This! p. 62 Read pp. 63-67 & Narrate
8	Lesson 4 - Aquatic Herps Read pp. 67-71 & Narrate *Written Narration: What Do You Remember? p. 71 *Notebooking Activity: Sea Turtles Illustrations p. 71 *Notebooking Activity: Reptile meets Amphibian Story p. 71 *Notebooking Activity: Seat Turtle Preservation p. 71	Ocean Box Project: Add a sea turtle and a sea snake to your ocean box p. 71 Scripture Copywork Vocabulary Crossword Cut and Fold Miniature Books Experiment: Tadpole Growth p. 72
9	Lesson 5 - Primeval Reptiles Read pp. 73-76 & Narrate *Begin working on Fascinating Facts about Primeval Reptiles Read pp. 76-78 & Narrate Try This! p. 78	Read pp. 79-81 & Narrate Try This! p. 81 Read pp. 82-83 & Narrate Try This! p. 83
10	Lesson 5 - Primeval Reptiles Read pp. 83-84 & Narrate *Written Narration: What Do You Remember? p. 85 *Notebooking Activity: Underwater Scene p. 85 *Notebooking Activity: Leviathan Venn Diagram p. 85	Scripture Copywork Vocabulary Crossword Cut and Fold Miniature Books Experiment: Fossil Sediment p. 85

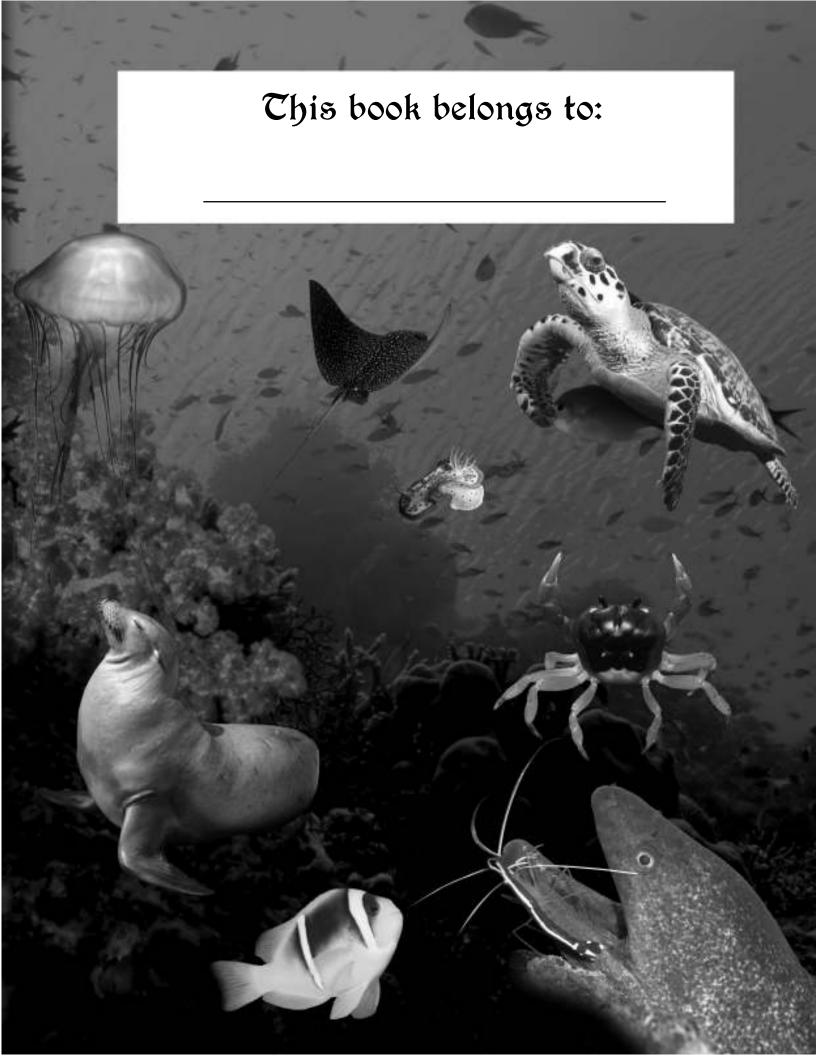
^{*} Templates provided for these activities

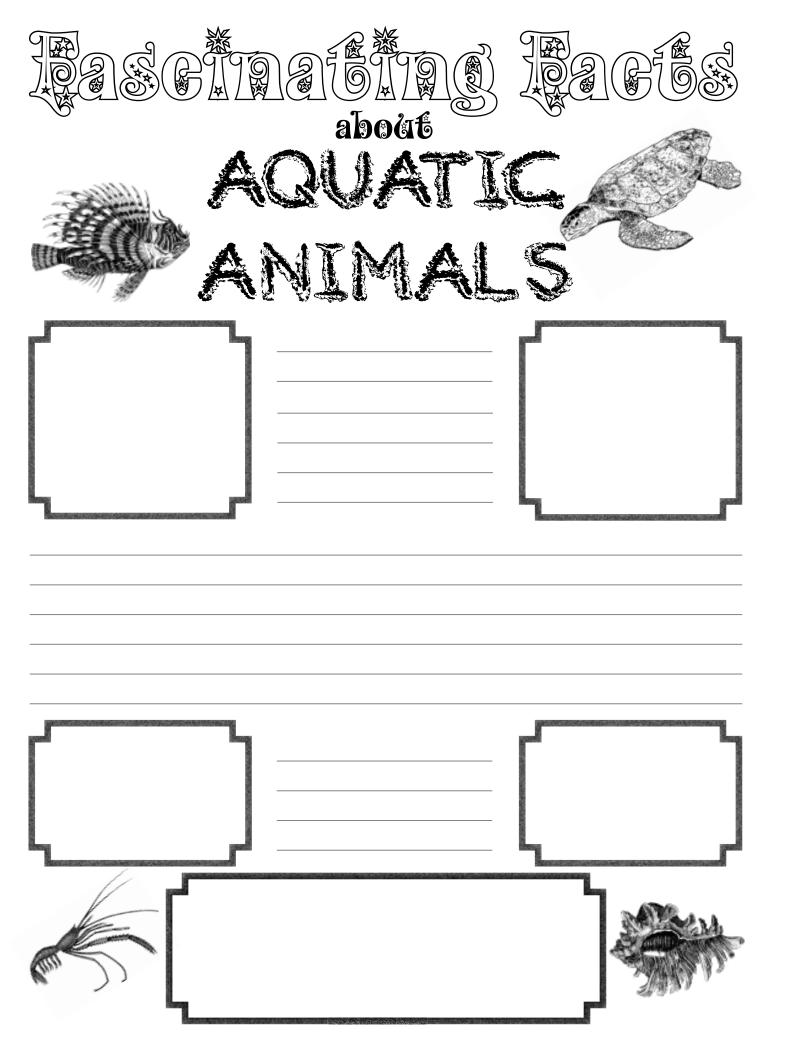
Week	Day 1	Day 2
11	Lesson 6 - Fish Read pp. 87-90 & Narrate *Begin working on Fascinating Facts About Fish Read pp. 90-92 & Narrate	Read pp. 93-96 & Narrate Read pp. 96-98 & Narrate
12	Lesson 6 - Fish Read pp. 98-100 & Narrate *Written Narration: What Do You Remember? p. 101 *Notebooking Activity: Fish Illustration with labels p. 101 *Notebooking Activity: Fish Shapes p. 101 *Notebooking Activity: Fish Design p. 101 *Notebooking Activity: Lifecycle of a Salmon p. 101	Ocean Box Project: Add several kinds of fishes to your ocean box p. 101 Scripture Copywork Vocabulary Crossword Cut and Fold Miniature Books Experiment: Fish Temperature p. 101
13	Lesson 7 - Sharks and Rays Read pp. 103-106 & Narrate *Begin working on <i>Fascinating Facts about Sharks and Rays</i> Read pp. 106-108 & Narrate	Read pp. 109-110 & Narrate Try This! p. 111 Read pp. 111-113 & Narrate
14	Lesson 7 - Sharks and Rays Read pp. 114-118 & Narrate *Written Narration: What Do You Remember? p. 119 *Notebooking Activity: Sharks & Rays Illustrations p. 119 *Notebooking Activity: Lamprey & Hagfish Illustrations p. 119	*Notebooking Activity: Shark Bites Speech p. 119 Ocean Box Project: Add a shark and ray to your ocean box p. 119 Scripture Copywork Vocabulary Crossword Cut and Fold Miniature Books Experiment: Electricity in Salt Water p. 119
15	Lesson 8 - Crustaceans Read pp. 121-123 & Narrate *Begin working on <i>Fascinating Facts about Crustaceans</i> Read pp. 123-126 & Narrate	Read pp. 126-130 & Narrate Read pp. 130-135 & Narrate Read pp. 135-137 & Narrate Try This! p. 137
16	Lesson 8 - Crustaceans Read p. 138 & Narrate *Written Narration: What Do You Remember? p. 138 *Notebooking Activity: Crustacean & Crab Hustration p. 138 *Notebooking Activity: Crab Conversation p. 138	Project: Animal Quiz Game p. 139 Ocean Box Project: Add crustaceans to your ocean box p. 140 Scripture Copywork Vocabulary Crossword Cut and Fold Miniature Books Experiment: Raise Sea Monkeys or Triops p. 140
17	Lesson 9 - Mollusks Read pp. 141-143 & Narrate *Begin working on <i>Fascinating Facts about Mollusks</i> Read pp. 143-146 & Narrate	Read pp. 146-151 & Narrate Read pp. 151-154 & Narrate
18	Lesson 9 - Mollusks Read pp. 154-156 & Narrate *Written Narration: What Do You Remember? p. 156 *Notebooking Activity: Bivalves and Gastropods Illustrations p. 156 Ocean Box Project: Add some mollusks to your ocean box p. 157	Scripture Copywork Vocabulary Crossword Cut and Fold Miniature Books Experiment: Resonance p. 157 Project: Make a Conchology Box p. 158
19	Lesson 10 - Cephalopods Read pp. 159-161 & Narrate *Begin working on Fascinating Facts about Cephalopods Read pp. 162-164 & Narrate	Read pp. 164-168 & Narrate Try This! p. 168

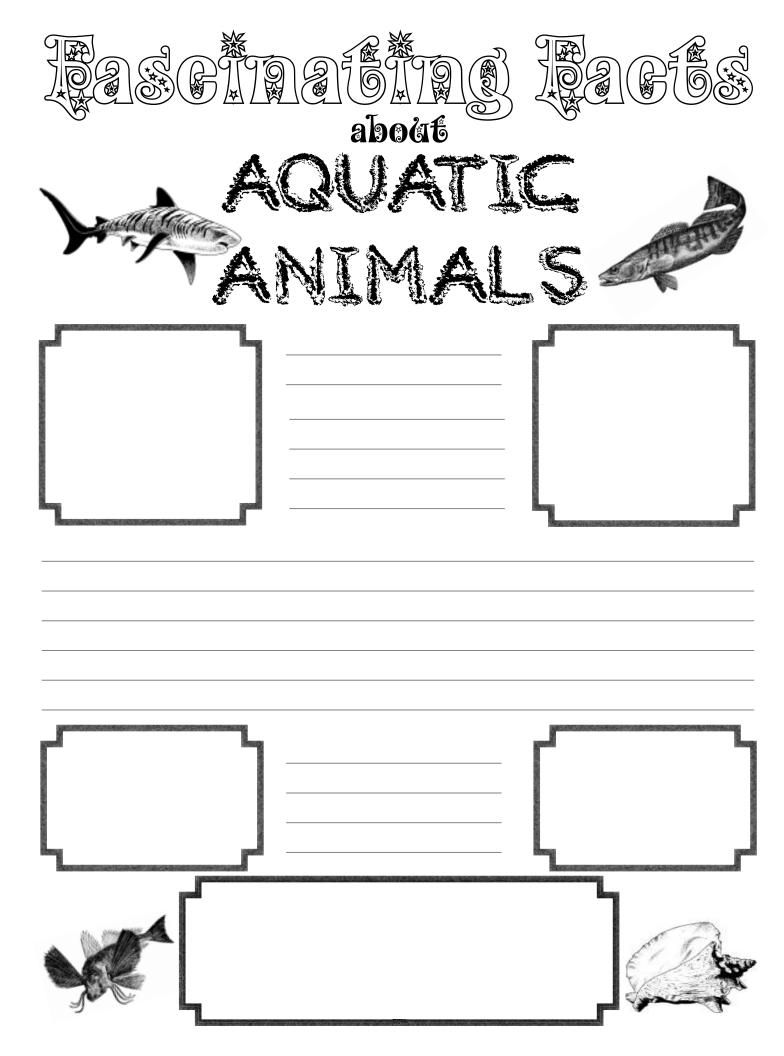
^{*} Templates provided for these activities

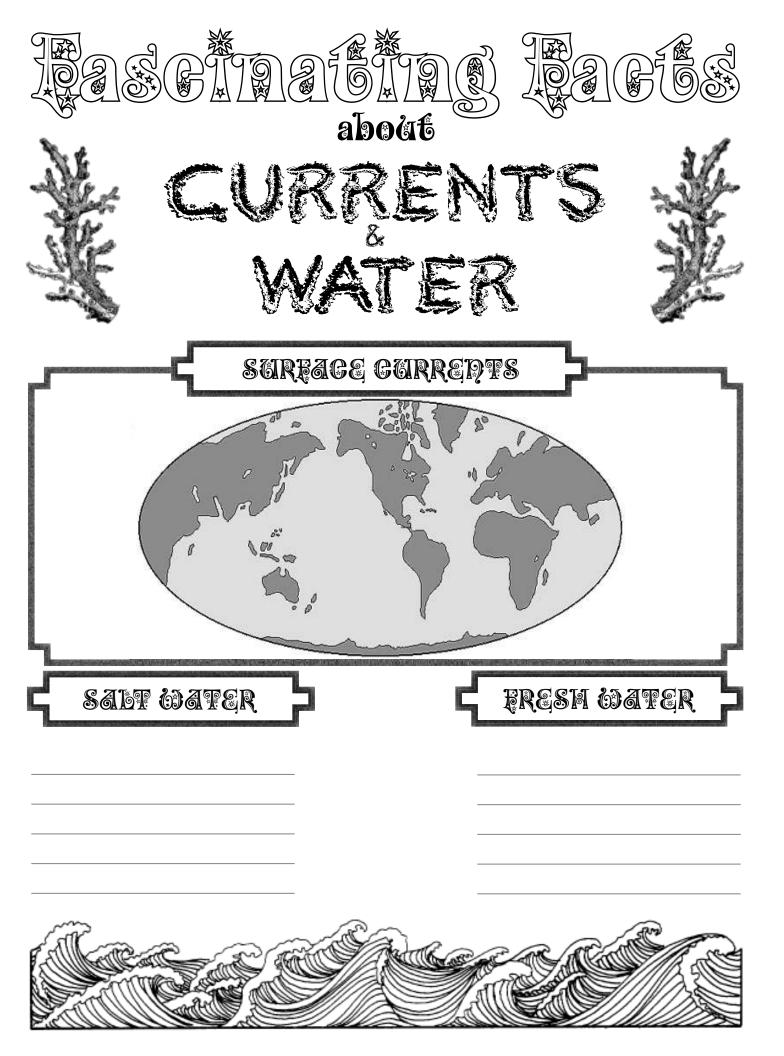
Week	Day 1	Day 2
20	Lesson 10 - Cephalopods Read pp. 168-170 & Narrate *Written Narration: What Do You Remember? p. 170 *Notebooking Activity: Cephalopod Illustrations p. 171 *Notebooking Activity: Whale & Squid Battle p. 171	Ocean Box Project: Add some cephalopods to your ocean box p. 171 Scripture Copywork Vocabulary Crossword Cut and Fold Miniature Books Experiment: Buoyancy p. 171
21	Lesson 11 - Echinoderms Read pp. 173-175 & Narrate *Begin working on Fascinating Facts about Echinoderms Read pp. 176-177 & Narrate	Read pp. 177-180 & Narrate Read pp. 180-182 & Narrate
22	Lesson 11 - Echinoderms *Written Narration: What Do You Remember? p. 182 *Notebooking Activity: Echinoderms p. 183 *Notebooking Activity: Sea Stars, Sand Dollars and other animals illustrations p. 183 *Notebooking Activity: Legend of the Sand Dollar p. 183	Ocean Box Project: Add some echinoderms to your ocean box p. 184 Scripture Copywork Vocabulary Crossword Cut and Fold Miniature Books Project: Salty Brittle Stars p. 184
23	Lesson 12 - Cnidarians Read pp. 185-187 & Narrate *Begin working on <i>Fascinating Facts about Cnidarians</i> Read pp. 188-191 & Narrate	Read pp. 191-194 & Narrate Read pp. 194-197 & Narrate
24	Lesson 12 - Cnidarians Read pp. 198-199 & Narrate *Written Narration: What Do You Remember? p. 199 *Notebooking Activity: Cnidarians Illustrations p. 199 *Notebooking Activity: Great Barrier Reef Research p. 199	Ocean Box Project: Add cnidarians to your ocean box p. 200 Scripture Copywork Vocabulary Crossword Cut and Fold Miniature Books Experiment: Currents p. 200
25	Lesson 13 - Other Interesting Aquatic Animals Read pp. 201-203 & Narrate *Begin working on Fascinating Facts about Other Aquatic Animals Read pp. 203-206 & Narrate	Read pp. 206-208 & Narrate Try This! p. 208 Read pp. 209-212 & Narrate
26	Lesson 13 - Other Interesting Aquatic Animals Read pp. 212-216 & Narrate *Written Narration: What Do You Remember? p. 216 *Notebooking Activity: Sponges, Worms & Microscopic Animals p. 216	Ocean Box Project: Add sponges and worms to your ocean box p. 217 Scripture Copywork Vocabulary Crossword Cut and Fold Miniature Books Experiment: Desalination p. 217

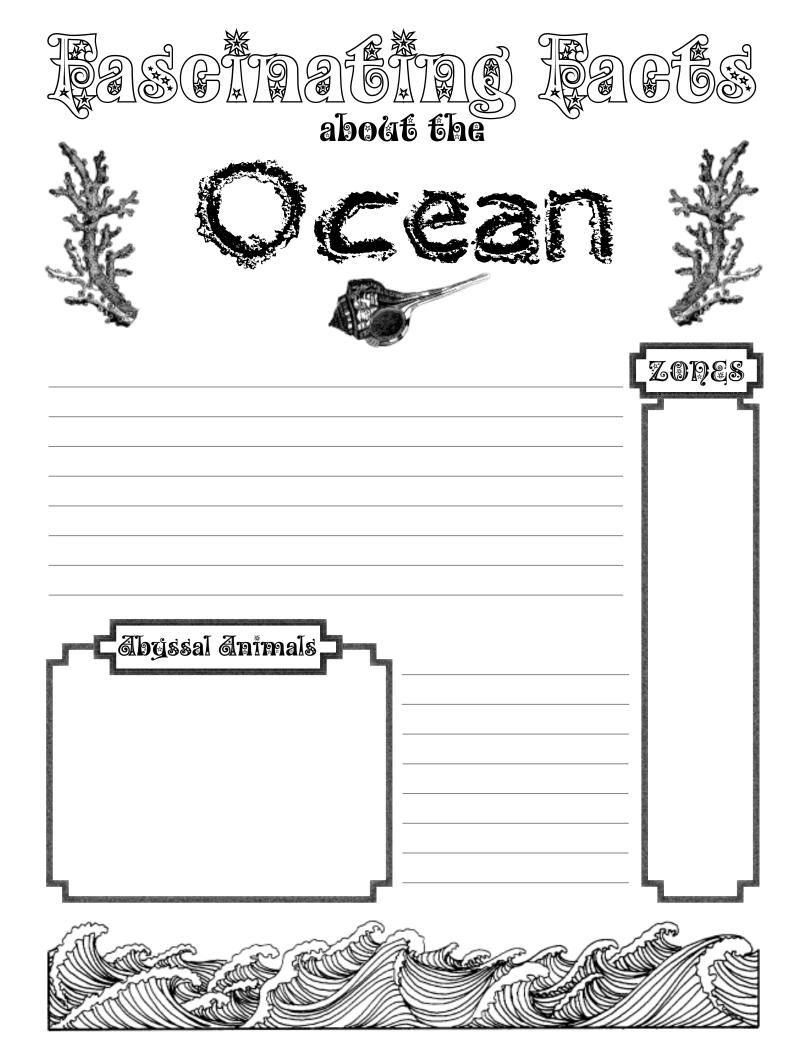
^{*} Templates provided for these activities











HAT DO YOU REMEMBER? LESSON 1 REVIEW QUESTIONS

1.	What are nektonic creatures?
2.	What are benthic creatures?
3.	What are plankton?
4.	Where can zooplankton be found at night?
5.	Why are plankton important to all sea life?
6.	What are filter feeders?
7.	Can you name the four oceans in the world?
8.	What are seas?
9.	What are estuaries?
10	Beginning from the shore out to the deep, what are the four zones of the ocean floor?
11.	From the surface of the ocean to the deep, what are the three zones in which aquation creatures live?
12.	What are the circular currents called?
13.	What are the currents caused by temperature and salt levels called?

14. What causes the tides?

What Gauses the Tides

Regions of the Ocean Floor



Praise the LORD from the earth, you great sea creatures and all ocean depths.

Psalm 148:7

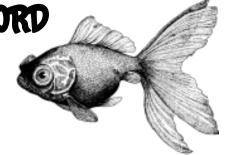


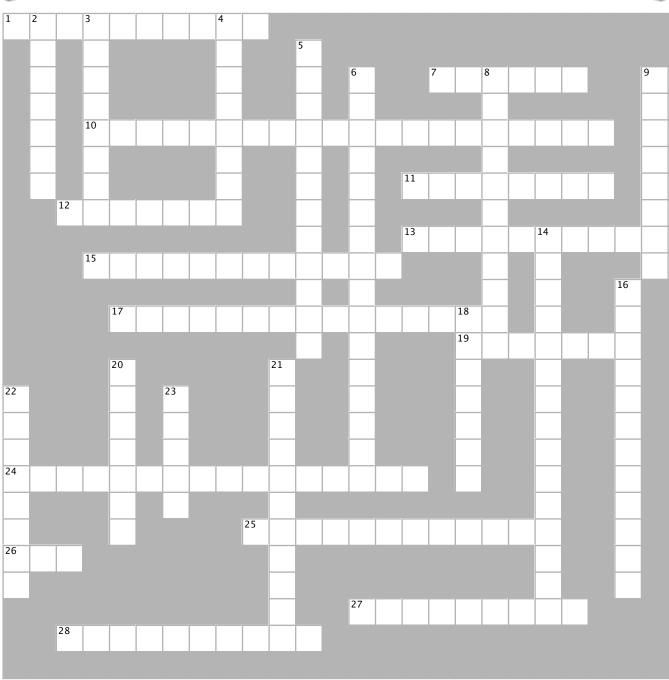
Praise the LORD from the earth, you great sea creatures and all ocean depths.

Psalm 148:7

VOCABULARY CROSSWORD

LESSON 1



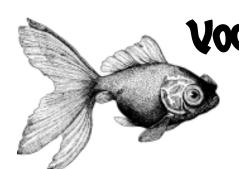


NEKTONIC BENTHIC PLANKTON MAMMALS MIDNIGHT ZONE CONTINENTAL SLOPE CONTINENTAL RISE THERMOHALINE CURRENTS

REPTILES HIGH TIDE SUNLIT ZONE AMPHIBIANS INVERTEBRATE BIOLUMINESCENCE SPRING TIDES FISHES

LOW TIDE BRACKISH TWILIGHT ZONE ZOOPLANKTON CONTINENTAL SHELF ABYSSAL PLAIN VERTEBRATE NEAP TIDES

GYRES ESTUARY SEA **SESSILE**



LESSON 1



Across

- 1. These creatures are like reptiles, but they don't have scales.
- 7. Animals that are cold-blooded and have a backbone, but don't breathe air.
- 10. Deep currents in the ocean resulting from water evaporating from the surface of the ocean. TWO **WORDS**
- 11. Organisms that drift or float in the water because they cannot swim strongly enough to move against the ocean current.
- 12. Animals that don't swim, but scurry, crawl, hop, scoot, burrow, or slither across the bottom of a body of water. They are also called the benthos.
- 13. An animal that has a backbone.
- 15. The area that begins before the bottom of the ocean floor, where it is darker than midnight. No light from the sun ever reaches down this deep into the ocean. TWO WORDS
- 17. One part near the very end of the continental slope drop off, where the slope becomes much more gentle. TWO WORDS
- 19. The place where a river meets with an ocean or sea.
- 24. The part of the continent that is underwater. It slopes gradually downward, and the water gets deeper and deeper. TWO WORDS
- 25. An animal that doesn't have a backbone.
- 26. A body of water that is smaller than an ocean. It is made up of salt water because it is connected to an ocean.
- 27. Tides that occur when the sun's gravity works against the moon's gravity, causing the high tides to become lower and the low tides to become higher. TWO WORDS
- 28. The part of the ocean that is well lit by the sun. TWO WORDS

Down

- 2. Warm-blooded creatures that breathe air and give birth to live young that drink milk from their mother's body. They also have a backbone and hair.
- 3. What we call it when the ocean's water comes way up onto the shore. TWO WORDS
- 4. What we call animals that can get from one place to another by propelling, gliding, or paddling through the water.
- 5. The area deeper down the continental slope where it is fairly dark with very little sunlight coming through. TWO WORDS
- 6. A giant cliff-like drop-off at the end of the continental shelf in the ocean. TWO WORDS
- 8. Tides that are caused by the sun working with the moon to pull on the oceans of the world, causing the high tide to become higher than usual and the low tide to become lower than usual. TWO WORDS
- 9. Cold-blooded creatures that have scales, breathe air, lay eggs and have a backbone.
- 14. What we call it when a creature has the ability to make its own light, much like a firefly.
- 16. The deep, dark ocean floor, located at the end of the continental rise. TWO WORDS
- 18. Animals that stick themselves to one place and do not move around.
- 20. What we call it when the ocean's water pulls way back, sometimes exposing a lot of the beach. TWO WORDS
- 21. A certain type of plankton that are a lot like animals because they need to eat to get food.
- 22. Water that is less salty than seawater but saltier than fresh water.
- 23. Circular patterns formed by the surface currents in the world's oceans.

Aquatic Animals & the Ocean Minibook

You can create some abyssal animals for your ocean box. Find images on the Internet, or look for them in the books or DVDs below to see what they look like.

Why Don't Oceans Freeze?

Have you ever wondered why rivers and lakes freeze in the winter, but oceans do not? Let's do an experiment to see why.

You will need:

1 gallon freezer bag 1 quart freezer bag Crushed ice 1 cup salt A thermometer

Fill the gallon freezer bag half way with crushed ice and water. Measure the temperature and record it. Add salt and seal the bag. Allow the ice to melt for 1 hour. Check the temperature again. The temperature should be less than 32 degrees Fahrenheit. Even though the temperature is below freezing, the ice continues to melt. This is because the salt lowered the freezing point of the water. The water will not freeze unless it reaches a much colder temperature than 32 degrees. This is why water in the ocean rarely freezes. The salt keeps the ocean water from freezing. Occasionally, the top layer of the water, which has less salt, will freeze, while the bottom does not. This enables ocean animals to live all year long in their watery world.

Create a Model of the Ocean Floor

Using the salt dough recipe below, you can create a model of the ocean floor.

Ingredients:

4 cups flour
1 cup salt
1 1/2 cups hot water (tap water)
2 teaspoons vegetable oil (optional)
Food coloring

Mix the ingredients together. You may want to add this to your ocean box.

Book and DVD Suggestions

The Deep: The Extraordinary Creatures of the Abyss by Claire Nouvian. This picture book contains the strange, beautiful, grotesque and wonderful creatures that inhabit the abyss. Artistically presented. Down, Down, Down: A Journey to the Bottom of the Sea by Steven Jenkins. A top to bottom look at the ocean. IMAX Deep Sea (DVD) narrated by Johnny Depp and Kate Winslet. This stunning film is an exploration of the world beneath the sea and its bizarre and exotic inhabitants.

^{*}Be aware that some titles may contain evolutionary content

My Aquatic Animals Project What I did: What I did: What I learned: What I learned:

Scientific Speculation Sheet

Water Temperature

	l		
Name		Date	
Materials Used:			
Procedure:			
Hypothesis:			
Results:			90-
Conclusion:			



(Instructions on next page)

Thais of the second sec	Stack smaller rectangle on top and line up here
Stack smaller rectangle on top and line up here	Spyhopins
Stack smaller rectangle on top and line up here	Stack smaller rectangle on top and line up here
Preaching	Toolbed Whales

Stack smaller rectangle on top and line up here	Stack smaller rectangle on top and line up here
Defece Wheles	
Stack smaller rectangle on top and line up here	Instructions: 1. Above each title, write the information requested about whales. 2. Cut out the eight rectangles along the outer edges. 3. Stack the rectangles with the largest of the bottom and the smallest on top. 4. Staple the rectangles along the top edge to create a layered book. 5. Lift the flaps to reveal things you've learned about whales. 6. Glue the bottom of your Whales Layer Book to your "Whales Minibook" past page.
Fatoric Whate	

PINNIPEDS FLAP BOOKS

Instructions:

- 1. Cut out the Pinnipeds Flap Books along the outer edges.
- 2. Fold the triangular flaps inward along the yellow fold lines so they lay on top of the white squares.
- 3. Lift the flaps and write information you learned about each pinniped pictured on the flaps of each book.
- 4. Glue the books onto the "Pinnipeds Minibooks" paste page.
- 5. Lift the flaps to remember what you learned about pinnipeds!





