Dive into MARINE BIOLOGY

CURRICULUM GUIDE

By: Luke & Trisha Gilkerson

Welcome to Dive into Marine Biology

The ocean covers more than 70% of our planet, yet it remains one of the least explored parts of God's creation. Beneath the surface lies an entire world of astonishing variety—from graceful sea turtles and darting schools of fish to mysterious deep-sea creatures we're only just beginning to understand. The sea is truly a testament to the creativity and majesty of the Creator.

Psalm 104 tells us, *"There is the sea, vast and spacious, teeming with creatures beyond number—living things both large and small."* When we study marine life, we are diving into one of the most fascinating and diverse ecosystems on Earth, and through it, gaining a deeper appreciation for the God who made it.

Dive into Marine Biology is a semester-long middle school science course, designed to introduce students to the wonders of life in our oceans, from the shoreline to the deepest trenches. Through engaging lessons, hands-on activities, and a wide variety of marine organisms, students will build a foundation in marine biology while also sharpening their skills in scientific observation and independent learning.

During the middle school years, students are beginning to grow in responsibility and independence. This course is designed to support that development—encouraging curiosity, critical thinking, and a genuine love of learning about God's world. We encourage you, as a parent, to check in regularly and be part of the exploration, asking good questions and sparking great conversations.

We're excited to dive in with you!

Luke & Trisha Gilkerson

Getting Started

Where to begin: add your student(s) to the course

Log in to JourneyHomeschoolAcademy.com. From the parent dashboard...

1. Click on “Student Management.”
2. You will see how many licenses (students) you have available. For each student, enter their first name, last name, and email address, and then click the “Add” button.
3. A temporary password will be sent to the email address you assign to each student. Using their email and password, each student will be able to log into their course dashboard. You, the parent, will be able to follow their progress through the parent dashboard.
4. After registering all of your students, click the button that says, “Click here once you’ve added all your students below.”

FAQ: Does my student need their own email address?

The student login must use a unique email address. However, if you’d prefer for your student not to have an email address, there are a few alternatives.

1) If you have a gmail address, you can add a qualifier to your email address. For instance, if your email address is parent@gmail.com you can place a plus sign (+) after the first part of your email address like this: parent+BiologyStudent@gmail.com (you can use whatever you'd like after the +). Our system will view this as a *unique* email address, however all emails will still go to *your* inbox. It's a pretty handy feature gmail has.

2) If you do not have a gmail account, another option you have is to open a new free email address but have all emails *forwarded* to your inbox so you and your student do not have to maintain another email account.

How to begin your students' course access

You have the flexibility to begin this course whenever you're ready. Simply follow the steps below...

1. After you've completed the steps above, navigate back to the Student Management page for the course and click the button that says, "Click Here to Start the Course."
2. After clicking this button, the first lesson should show up in the student account within an hour (don't forget to log out of the parent account and log in to the student account).

Course Schedule

The first time your child logs in to their course, they should **watch the short "Welcome" video** so they can orient themselves to the course.

Once you click the button to begin the course, the first lesson will be released. Each new lesson is released after your student has finished checking *all* the boxes in the "assignments" box of their current lesson.

If your child completes one lesson per week, they should be able to complete the course in 16 weeks. However, if they get a little behind, don't worry: they will have access to the course for 6 months (26 weeks).

Need more time? You'll be able to purchase extensions on a month-to-month basis past your one-year access date if your student didn't have quite enough time to finish up.

Study Skills Training

One of the deficiencies we've seen in students is truly understanding how to study. We don't want to see students continue to make the same study mistakes over and over, but we want them to learn strong study habits. We developed training available to all of our Level B and C students. They will learn to apply the research-backed, time-tested study and notetaking techniques that will guide them toward becoming lifelong learners.

Students can access *Lesson 0: The Secrets to Student Success* anytime before or after they begin the course by logging into their student account now. They'll have access to two videos along with accompanying notetaking pages:

- **Study Smarter, Not Harder!**
- **Notetaking Crash Course**

The Explorer's Handbook

From the parent or student dashboard under "Resources," you can **download the Explorer's Handbook**. This is your student's guide for all their Exploration Activities, along with note-taking pages for each of the lectures.

The note-taking pages include fill-in-the-blank outlines so the student can follow along with the lecture, along with spaces to take extra notes. Note-taking is a skill that will help your students remember what they're listening to. If it's not a skill they have yet learned, be sure to take some time before class begins to talk with them about the importance and find some practice opportunities.

We've worked hard to help even the newest note-takers be successful.

- These outlines can be used to follow along with the lectures, fill in the blanks, and label appropriate diagrams.
- Use the extra space on the pages so they can take more notes, too.
- Your student will also find new words they should familiarize themselves with because they may encounter a number of unfamiliar words throughout this course.

If these notetaking pages don't work for your student, it's completely alright to skip them. While they are helpful to the majority of our students, each student is different, and your student may have a note-taking strategy that works better for them.

Most weeks, your student will have a hands-on Exploration Activity to complete as well. They'll have written directions in their Explorer's Handbook that they can download and print off, and most weeks they'll also have an activity video that will provide instructions. Some weeks, students will be asked to consider what they've learned and answer questions. We have an answer key for you in the resources section of your parent dashboard.

How the Course Works

What Each Lesson Is Like

Most weeks, students should complete the following...

1. Have student lesson outlines and assignments on hand.
2. Watch the lesson video (average 25 minutes).
3. Complete the comprehension quiz.
4. Watch the activity video (when there is one) and complete the Exploration Activity.

There are two exams. These weeks, students will be provided with a study guide they can use to help them study for the exam. There will not be any activities or lectures to watch for these weeks. Students should use the extra time to review and study for their exam.

Important Note: Students must have *all* the boxes checked in the “Assignments” box on their current lesson before the next lesson will be released to them.

Quizzes & Exams

Every weekly quiz and exam is automatically graded as soon as the student finishes taking it.

The quizzes are designed to help students test their knowledge of the material. If students do not receive at least a 70% on their quiz, they will need to reset the quiz and retake it. Students should use quizzes as a self-assessment to determine where they need to go back and study more.

As a parent, you can log in to your parent dashboard and click on “Student Management” to see the grades for each quiz.

There will be two exams. These will be longer and more comprehensive tests, but the course contains study guides to help students remember all the important material. The exam grades are final—**exam grades can *only* be reset through special parent requests on the parent resources page**.

Exploration Activities

Students have access to Exploration Activities that accompany most lessons. We include activity videos when more instruction is needed or when reinforcement of more complex concepts from the lesson is necessary. When there are activity videos, they will provide instruction, give demonstrations on how to complete activities, and give your students ongoing learning opportunities in the field of Marine Biology.

We encourage you to have your student complete as many activities as is feasible. The Exploration Activities are a fantastic way for students to get a hands-on learning experience they’ll likely remember far longer than anything they read in a textbook.

Most supplies for this course are household objects or easy to find at your local store. However, look ahead at upcoming labs in case there are any supplies you might need to order ahead of time. You can see a **list of activity supplies** you’ll need for this year, along with links to any specialty lab supplies you might need to help you better prepare.

Scope & Sequence

Week 1: Life Beneath the Waves

- Introduction to marine biology
- Importance of the oceans
- Ocean ecosystems and zones

Week 2: The Forces that Shape the Sea

- Surface and deep ocean currents
- Tides and waves
- Salinity of the ocean

Week 3: Ordering Ocean Life

- Taxonomy and classification
- Introduction to the Kingdoms
- Food webs: producers, consumers, and decomposers

Week 4: The Foundation of the Ocean Food Chain

- Introduction to photosynthesis
- Key marine producers: plants, protists, and bacteria

Week 5: Simple but Amazing: Sponges & Worms

- Phylum Porifera: the sea sponges
- Phylum Annelida: the segmented worms
- Life cycle, reproduction, and anatomy of sea sponges and worms

Week 6: Underwater Stingers: Discovering Cnidarians

- Classification of Cnidarians
- Specialized anatomy and body forms
- Life cycle and reproduction

Week 7: Glowing Drifters & Star-Shaped Wanderers

Phylum Ctenophora: the comb jellies
Phylum Echinodermata: starfish, sea urchins, sand dollars, and more
Body structures, reproduction, bioluminescence, cilia, water vascular system, and other unique characteristics

Week 8: From Tentacles to Claws: Mollusks & Crustaceans

Mollusks: octopuses, squids, clams, snails, and more
Crustaceans: crabs, lobsters, shrimp, and more
Soft bodies and shells vs. exoskeletons and jointed legs
Unique adaptations

Week 9: Exam

Week 10: Scales in the Surf: Ocean Reptiles

Introduction to vertebrates
Sea turtles, sea snakes, and marine iguanas
Adaptations for life in the ocean

Week 11: Sleek Hunters of the Open Sea

Cartilaginous fish: sharks, rays, and skates
Anatomy and unique structures
Hunting and survival adaptations

Week 12: Swimming with Structure: The Bony Fish

Features of bony fish
Comparison with cartilaginous fish
How fish breathe and swim

Week 13: Giants of the Blue: Marine Mammals

Fully aquatic mammals
Cetaceans: whales, dolphins, and porpoises
Sirenians: manatees and dugongs

Week 14: Between Land & Sea: Mammals That Split Their Time

Semi-aquatic marine mammals
Pinnipeds: seals, sea lions, walruses
Mustelids: Sea Otters
Ursids: Polar Bears
Adaptations for both land and water

Week 15: Aliens of the Abyss

Creatures of the deep ocean
Life in extreme pressure, darkness, and cold
Hydrothermal vents, cold seeps, and deep-sea trenches
Unique adaptations & discoveries

WEEK 16: EXAM

Grading

Quiz & Exam Grading

Quarterly exams and lesson quizzes are graded automatically in the online classroom. You can keep a record of the grades below.

Quiz	1	2	3	4	5	6	7	8	End Q1
Score									

Quiz	10	11	12	13	14	15	End Q2
Score							

Exam	1st quarter	2nd quarter
Score		

Exploration Activities

Record your student's activity scores in the table below. Assign your student 1-10 points for each activity completed. A student should receive a 10 for exceptional work that shows mastery of the concepts.

Activity	1	2	3	4	5	6	7
Score							

Activity	8	10	11	12	13	14	15
Score							

Final Grade

Below is a suggested way to compute your student's final grade at the end of the school year.

Average activity grade Total points divided by the number of activities completed.	
Average quiz grade Total number of points divided by 1400 possible points.	
Average exam grade Total number of points divided by 200 possible points.	
Final grade Average of above 3 values.	