Fun to find out about

DOLPHINS
Dear Friends,

Classical Conversations is pleased to offer this at-home curriculum in support of *Dolphin Tale 2*. Whether it’s teaching our kids and youth about friendship, stewardship, and hope, or igniting their interest in oceanography and dolphins, *Dolphin Tale 2* is filled with so many valuable and inspiring lessons.

I remember when the first *Dolphin Tale* movie was released in 2011. Classical Conversations leaders and their families rallied and organized a Homeschool Day that involved buying tickets and attending the movie’s opening day matinees. Our community was so excited to support actors and fellow homeschoolers Nathan Gamble and Cozi Zuehlsdorff, who starred as “Nathan” and “Hazel.” We were also thrilled that a family movie finally gave us a leading homeschool character who was intelligent, funny, beautiful, and so charming.

We are thrilled to partner with Warner Bros. and Alcon Entertainment in reaching out to our fellow homeschoolers for this sequel. It is our hope that producers create more family entertainment that inspires curiosity while promoting values such as hope, courage, and the importance of family.

Peace be with you,

Robert Bortins
CEO, Classical Conversations, Inc.
Introduction

The love of learning comes from exploring a topic and discovering lots of new things related to it. Teaching your children to ask lots of good questions will help them experience the excitement of learning. Teach them to use a topic wheel to help generate questions and ignite their curiosity. This can be used with any age group because once you start asking questions and enjoying learning, you want to keep on learning, no matter how old you are!

This booklet was designed to go along with the movie *Dolphin Tale 2*. After watching the movie, use this booklet to inspire more learning and show your children how much fun it is to learn.

This is our topic wheel. We put the topic we want to learn more about in the center, then go to each outer circle and ask questions to see what we can learn about with dolphins in each subject. After we use the topic wheel to generate lots of questions, we get to enjoy discovering all the answers!
When scientists want to describe an animal, they do what is called “classification.”

You probably classify things, too, without realizing it! Think of a friend you have. Now, describe that friend. You would probably start broadly. You might specify whether your friend is a human or an animal. You might add whether your friend is a boy or a girl. Then, you might get more specific. You might describe your friend’s hair color, height, or shoe size. You might even tell us his last name so we know who his family is.

This is exactly what scientists do! They start with the most general characteristic of an organism. From there, scientists get more specific, and more specific, and more specific, until they have identified and named an individual organism. Classification systems go all the way back to the Greek philosopher Aristotle. Our modern system dates back to a man named Carl Linnaeus, who lived in Sweden in the 1700s.
**Kingdom**

The traditional classification system begins at a level called the **kingdom**. (Some scientists today think we should begin even earlier, with the question of whether or not an organism is alive.) Scientists have identified either five or six kingdoms of living things. After studying dolphins and watching them behave, scientists determined that dolphins, like you and me, get energy from eating things. This means they are a member of the kingdom **Animalia**. All members of **Animalia** get energy by eating. Dolphins eat a wide variety of fish, squid, or even seals. The diet depends on the type of dolphin and how much energy it needs.

**Class**

Now we know that dolphins have a spinal cord and eat to gain energy. Next, scientists ask whether the animal is warm-blooded, has hair at some point during its life, and produces milk for its babies. This determines the next category, the **class** of an organism. Dolphins fit all of these descriptions! (You might not know this, but dolphins are born with whiskery hairs around their beaks.) This means they are in the class **Mammalia**. You might know these as “mammals.” You and I are mammals, too.

**Phylum**

After identifying the kingdom, scientists asked whether dolphins have a spinal cord. This determines the dolphin’s **phylum**. The spinal cord refers to a group of nerves that run up the back to the brain. These nerves work like a mailman. They deliver messages from the body to the brain, and from the brain back to the body. They tell you to pick things up, walk, or feel pain in your body. As you can tell, they are very important! Some animals, like jellyfish and worms, do not have them. If a living thing in the kingdom **Animalia** does have a spinal cord, the scientist places it in the phylum called **Chordata**. This phylum includes animals like frogs, birds, dogs, and dolphins!

**Order**

Scientists call the next rank the **order**. To figure out dolphins’ order, we have to think about how they swim and how they breathe. Dolphins possess lungs and breathe air, and they propel themselves by moving their tails up and down rather than side to side. This is different from how fish swim. This means dolphins fit into the order **Cetacea**. The only other Cetaceans are whales and porpoises.
Family
Next, scientists place dolphins into a family. A dolphin’s family is called *Delphinidae*. (Some whales, like the killer whale, are also members of this family.) Delphinids have beaked mouths and twenty or more pairs of teeth. The members of this family are smart and swim in groups. They even hunt for food together. Sometimes dolphins will surround a group of fish so the fish cannot get away, and then take turns diving in to eat.

Genus
Now, scientists narrow their list down to certain types of dolphins. This next group is called the genus. The genus *Tursiops* refers to dolphins like Winter, which are recognizable by their short beaks and large brains. This genus includes only dolphins.

Species
There are many different types, or species, of dolphins. Each has slight differences in size and color. Some dolphins have stripes, or square-shaped heads, or spots. When scientists name something, they use a combination of its genus and its species. (Did you know that the scientific name for humans is *Homo sapiens*)? Winter is a *Tursiops truncatus*, also known as a common bottlenose dolphin. Now you know exactly how to classify a dolphin, just like a scientist.
Game: Animal, Vegetable, Mineral

Practice your new classification skills by playing “Animal, Vegetable, Mineral,” a variation of the game “Twenty Questions,” with at least one other friend. One of you will be the answerer and the rest will be the questioner(s).

1. The answerer chooses a subject but does not tell the others what it is. The subject might be a dolphin, George Washington, a carrot, or a diamond. The game begins when the answerer says, “I’m thinking of an ____________ (animal/vegetable/mineral).”

2. The questioners take turns asking yes-or-no questions as they try to guess the identity of the subject. They might ask, “Are you thinking of a human?” or “Are you thinking of a fictional character?” If they can guess the identity of the subject within twenty questions, they win! If they cannot figure it out, the answerer wins that round and play begins with a new answerer.
Diagram of Bottlenose Dolphin

- Melon
- Dorsal Fin
- Flukes
- Beak
- Blowhole
- Back
- Eye
- Belly
- Flipper
Draw the Diagram
How do dolphins behave?

Scientists do not know exactly how smart dolphins are, but they agree that dolphins are some of the smartest animals in the world. Scientists have discovered that dolphins can solve problems and use tools. They even have bigger brains than humans! The dolphin’s brain has four parts, while the human brain has three. No one knows for sure why dolphins have an extra section in their brain. Why do you think this is? Think about the way dolphins interact with humans in the Dolphin Tale movies. What do you imagine Winter and Hope are thinking about?

Dolphins are also very social. They travel in “pods,” groups of two to thirty animals, and they become sad if they are left alone for too long, just like Winter did in the movie. Even though they travel in large groups, each mother dolphin still takes care of her own child. The mother has only one child at a time, and she raises that child for years until it is ready to be on its own.
Coloring Page
Why was it important for Winter to swim using her prosthetic tail?

In both *Dolphin Tale 1* and *Dolphin Tale 2*, Winter becomes very sick. Do you remember why? She was sick because without her tail she couldn’t swim properly. She swam by moving her whole body from side to side instead of up and down. Many fish can swim this way—so why would it be bad for Winter to swim this way?

Answer: Winter isn’t a fish! Remember that she is a mammal and therefore has a spinal cord. When we talked about chordates in the classification section, we learned that the spine holds many nerves and allows the brain to talk to the body. Without the spinal cord, no chordate can survive. The spine is supposed to stay straight or it can cause pain and other problems.

Dolphins can swim remarkably quickly. They use their tails to propel themselves forward. They do not have strong enough muscles to swim without the tail. When Winter lost her tail she tried to swim using her muscles instead. This created a huge problem! You see, God created the dolphin perfectly so that all the muscles line up to keep the spine straight when the dolphin swims with her tail. But when the dolphin swims from side to side instead of up and down, the muscles work differently. This pulls the spine in weird ways, and when the spine gets pulled it bends and moves. This makes the spine curve. Eventually, this will damage the spine so much that it can no longer send messages to the brain.

Luckily, Dr. McCarthy was able to invent a prosthetic tail so that Winter could swim normally. This was the first time anyone had made a prosthetic tail for a dolphin! No one had tried to do this before because a dolphin’s tail is so unique it is hard to replicate. It has to be both strong and flexible. Since no one knew how to create a prosthetic like that, Dr. McCarthy had to invent the proper material and make it just right for Winter!
How does Clearwater Marine Aquarium rescue and rehabilitate injured dolphins?

Most of the dolphins in CMA’s care were discovered sick or injured by visitors, fishermen, or park rangers. CMA has a phone number that people can call any time day or night, and a worker will come immediately to pick up the animal and provide medical attention. Once the team has the dolphin in their care, they assess its health care needs and do their best to meet them. They continue to monitor the health of the dolphin both day and night until it is well.

The work of Clearwater Marine Aquarium is supported by sponsors who “adopt” a dolphin by paying for some of its care with donations ranging from $30.00 to $150.00. CMA sends each supporter a photo of the dolphin they are sponsoring and monthly updates on its health.
Dolphins spend most of their lives in dark or dimly lit oceans. Under water, seeing is not the most valuable sense. When animals or people cannot see clearly, they develop the ability to hear in special ways so they can sense what is around them. A dolphin’s special way of hearing is called echolocation. It sounds long and fancy, but it is just the words “echo” and “location” put together. In echolocation, dolphins use sounds to see! This may seem crazy, but it works so well that some scientists have learned how to use it, too.

To learn how echolocation works, you will need to understand a little bit about the properties of sound. Have you ever been in a cave or a tunnel? Close your eyes and remember what it was like being in that kind of complete darkness. What did you see and hear? Did you notice that every sound seemed louder than usual? Caves are surprisingly loud places.

The reason is that every time you make a sound, you are creating physical waves, just like ripples in the water that alternately compress and stretch the molecules around them. Place your finger against the front of your throat and hum. Do you feel a vibration? Now sing a song with your finger in the same place. Can you feel a different vibration? If you cannot feel the difference, try again, and pay close attention. Every sound produces a different vibration because every sound produces different physical waves. Look at this diagram of a sound wave:
Since sound waves are physical, they can bounce off other objects just like a rubber ball would. Think of the cave or tunnel you imagined earlier. Now imagine what would happen if you threw a bouncy ball as hard as you could at the wall. It would bounce everywhere! That is exactly what sound waves do in a cave. They bounce off walls and people and animals and then bounce back. That’s why caves and tunnels seem so loud.

Dolphins use this property of sound to locate their prey. They make high-pitched clicking sounds and wait for the clicks to echo back to them. Since they are in the ocean, there are no walls for the clicks to bounce off. Think back to the bouncy ball. If you throw it into your backyard and there is nothing for it to hit, it will not bounce back. As a result, if any clicks bounce back, the dolphin knows there must be an object around. The dolphin can even aim his clicks (the way you aim the ball when you throw it) in order to find exactly where his food is located. You can find samples of dolphins’ clicking sounds in the *Dolphin Tale* movies or online.
Activity: Practice Echolocation

Go into your garage or a small room in the house and close your eyes. Now make different sounds, some loud and some quiet. Listen carefully. Do you hear an echo? If you do hear an echo, explain why you are hearing it. Now, go outside and close your eyes. Make the same sounds that you made inside. Do they sound different? Why? If possible, ask someone to help you record a sound played outdoors and the same sound played indoors. Listen to both recordings, and see if you can identify which one was recorded outside and which one was inside. Now you are using your other senses, just like a dolphin would!

Animals like dolphins, whales, and bats use echolocation naturally. By studying these marvelous creatures, scientists have discovered ways to do the same. In 1900, the U.S. Navy purchased the first functional submarine, a ship that could travel safely underwater and attack enemy ships without being seen. By World War II, engineers had developed something called SONAR that would allow submarines to navigate and find their targets beneath the waves. SONAR is an acronym that stands for “sound navigation and ranging.” SONAR is based on the echolocation scientists saw bats using.
The Oceans of the World

The Arctic:
The Arctic Ocean is the smallest of the five and occupies the polar region above North America and Eurasia. This ocean is very cold and it is covered in ice all year, so many marine species cannot live here.

The Indian:
The Indian Ocean is the third largest in the world. It lies between Africa, Asia, and Australia and touches the Southern Ocean near Antarctica. Africa and Asia have used this ocean as a trade route for centuries.

The Southern:
Not surprisingly, the Southern Ocean lies in the south, bordering Antarctica. It was only recently classified as a distinct ocean. It is very cold and deep. Even though it is one of the smallest oceans, it is very important because it is responsible for the world’s largest ocean current. This current transports 100 times more water than all the rivers in the world combined.

The Pacific:
The Pacific Ocean lies to the west of the Americas and east of Asia and Australia. It is the world’s largest ocean, and it contains the deepest point in the world: the Mariana Trench, which is almost 36,000 feet deep. This ocean’s name means “peaceful” (derived from the Portuguese word pacífico). Like the Atlantic, the Pacific is home to a wide variety of sea creatures, including some of Winter’s smaller cousins, the Indo-Pacific bottlenose dolphins. (They also live in the Indian Ocean.)

The Atlantic:
The Atlantic Ocean lies to the east of the Americas and west of Europe and Africa. It is the second largest of the five oceans and is home to many different species, including common bottlenose dolphins like Winter!
Have you ever visited any of these oceans? If you have visited more than one, what differences did you notice between them?
Sea creatures can’t just live anywhere in the ocean. Each species fits into a different part of the ocean. For instance, near the shore, the waves crash into the land and could kill a creature that was not strong enough, so creatures with hard shells thrive there. Also, deep into the ocean, the sunlight cannot shine through the water, so creatures that live there glow in the dark or do not need to see.

Ocean Zones

The first zone is commonly known as the sunlight zone, but it is also called the epipelagic zone. This is the first and shallowest layer, going down about 200 meters (approximately 650 feet). When you go to the beach to swim, you swim in this zone. Because so many creatures need sunlight to live, this zone is full of life. If you dive down in the sunlight zone, you will start to feel pressure from above. Scientists call this “hydrostatic pressure.” Water is very heavy. Try picking up a big bucket of water. Now imagine far more water than that on top of you! That is a lot of pressure! Sea creatures are uniquely designed to withstand this pressure.

A bit deeper is the second zone. It is called the twilight zone or the mesopelagic zone. Here the sunlight starts to fade away just like it does at twilight. This zone goes to about 1,000 meters below the water. You would not be able to swim this deep in the ocean! Since there is so little sunlight, most of the species here require low energy to survive. Remember, dolphins eat to acquire energy. They would not want to eat anything here because none of the food would provide the energy they needed. Also, the hydrostatic pressure here is very intense. People need special suits, called JIM suits, which look like the ones worn by astronauts in space, in order to swim here. (JIM suits are named after a famous diver, Jim Jarrett.)

The third zone is called the midnight zone. It is sometimes separated into the bathypelagic zone and the abyssopelagic zone. You guessed it—there is no sunlight here at all! The midnight zone goes from about 1,000 meters all the way to the sea floor (more than 4,000 meters deep). Because the hydrostatic pressure is so intense, scientists have only recently been able to explore this zone. There are many things we still do not know about this part of the ocean, and many creatures we can only imagine.

The very last zone, called the trench zone or hadopelagic zone, lies below the ocean floor in deep trenches like the Pacific Ocean’s Mariana Trench. It extends more than 6,000 meters. The creatures that live in this zone must have special characteristics that allow them to survive the extreme pressure and cold. For example, using something called “bioluminescence,” creatures like the vampire squid and some jellyfish can light up at will to attract their prey.
Which zone do you think dolphins live in?

Did you figure it out?

It is the epipelagic zone!

Dolphins thrive off the fish and squid that live near the surface of the ocean. Also, do you remember how dolphins breathe? They have to swim to the surface regularly to breathe air through their blowholes, so they need to live close to the surface. Dolphins would never want to swim into the deeper layers of the ocean.
Activity:

What kind of creature do you imagine would live at the bottom of the ocean? Think about what characteristics it would need to survive.

Try drawing the ocean zones on this page.
Do dolphins migrate?

Dolphins do not migrate all together at one time of the year, the way geese or whales do. However, when they need to migrate, they do. Can you think of a reason why dolphins would have to leave their homes?

Sometimes, dolphins migrate because their food moves and they have to follow it in order to eat. Other times, in the case of bottlenose dolphins, the animals move south in the winter in order to stay warm.
Dolphin Habitats

Bottlenose Dolphins
These dolphins live everywhere except the very cold areas in the North and South poles. They even live in the Mediterranean Sea and the Black Sea. Common bottlenose dolphins like Winter typically live in the Atlantic Ocean, while the Indo-Pacific bottlenose dolphins, as their name suggests, live in the Indian and Pacific oceans.

Amazon River Dolphins
This dolphin lives only in the fresh water found in rivers. Since the Amazon River is so long, the Amazon River dolphin can be found in six different countries in South America! Trace the Amazon River on a map. Why do you think this river is home to so many different species of animals?

Chinese White Dolphins
This dolphin stays near Southeast Asia and Indonesia. Look on the map to find out which oceans it inhabits. Here is a hint: there are two different ones. This dolphin looks different from the dolphins you are used to seeing. It has white or pink skin, a long nose, and sometimes has spots as well.

Killer Whales
Did you know that killer whales are actually a type of dolphin? This dolphin can be found in all of the oceans, even the Arctic and the Southern! It is the only mammal (other than humans) that lives all over the world.

Dusky Dolphins
This type of dolphin lives only in the Southern Hemisphere because they like warm water. This means they stay on the bottom half of the globe, but not as far south as the Antarctic. Look at a map, and see if you can name some of the continents they might live near.
Aquarium Life

The word "aquarium" comes from the Latin root for "water" and refers to a home for anything that lives in water. Not all aquariums are the same. The most popular aquariums to visit in the United States house hundreds of different kinds of sea creatures. These aquariums either bring wild creatures into the aquarium or breed them in captivity. They may also rescue injured or endangered species to keep them safe. They do not typically return their animals to the wild. The other kind of aquarium cares for sick or injured animals until they are ready to return to the wild. Once the animals are healthy, they set them free, an act that is optimal for the ecosystem and for the animals. The Clearwater Marine Aquarium from *Dolphin Tale 2* is this type. They rescue, rehabilitate, and release animals back into the wild.

Aquariums play host to sea turtles, dolphins, sea otters, octopuses, sharks, eels, penguins, polar bears, and more! Because there are so many different animals, the trainers have to be very careful to create the right environment for each animal and make sure the animals do not bother one other.

with both land and water access. Aquariums try to re-create as closely as possible the original habitat of each animal. Dolphins require a tank big enough to swim around in. The aquarium needs to keep noises and vibrations to a minimum because dolphins have very sensitive hearing. They can become stressed over sounds that humans might think are normal. Every animal's environment must also be clean. Dolphins excrete much more than humans, so it would become very smelly and dirty if not properly cleaned!
Winter and Hope’s life at Clearwater Marine Aquarium

Winter and Hope live close to each other in the Clearwater Marine Aquarium. They are good friends and enjoy each other’s company. For the majority of the day they play with balls, float on a mat, or play with each other. They also enjoy showing off for the many visitors who come to see them. The trainers play with the dolphins to ensure that the dolphins accept them as friends. It is important for the trainers and dolphins to trust one other. Since Winter needs extra help with her tail, it is even more important for her to trust her trainers. For one hour every day, she swims around with her artificial tail in order to strengthen her spine. She cannot wear it all day because dolphins shed their skin every two hours.

**Activity:**
With a parent’s help, use the Internet to find an aquarium near you and research the kinds of animals that live there and the environments they need to thrive.
How do dolphins communicate with each other?

Dolphins have their own language comprised of whistles, clicks, squeaks, yelps, chirps, and body language. Scientists are studying this complex language in an attempt to decipher it. They think dolphins might talk to each other about hunting, predators, or even their emotions!

Scientists do know that each dolphin has a unique whistling sound—like your fingerprint. The other dolphins in the group know each other’s sounds, so if one is ever in trouble or lost, he can whistle, and the group will be able to find him.

Dolphins also use their bodies to make sounds. They slap the water with either their tails or their flippers, which makes a very loud sound that travels a great distance under water. They also open and close their jaws very quickly, creating a clicking sound. This clicking is a sign of aggression intended to intimidate an enemy or announce a threat.

The most common way dolphins communicate with each other is through touch. Their skin is even more sensitive than human skin! This means that if you or I were injured in exactly the same way as a dolphin, the injury would hurt the dolphin more. It also means that hugging or holding hands means a lot to them. Yes, dolphins “hold hands” with each other! (Scientists call it holding hands when they swim around with their fins touching.) They also touch each other softly on the face or body to show that they are friends.

Sounds and touch are not the only ways dolphins communicate. They also use body language. If they are fighting another dolphin, they make the shape of an “s” with their bodies. They may also do this when they are play-fighting. When they play, they may bump into each other, click, or slap their tails just as they would if they were showing real aggression, but they are doing it in sport.

Dolphins communicate with people in similar ways. They use many different signals to communicate with humans, such as bobbing their heads, waving their flippers, moving their jaws rapidly, or nudging with their noses. Scientists are currently developing more and more accurate ways to understand and communicate with dolphins. They have even developed a way for dolphins to ask for their favorite toys using echolocation.
**Echolocation Game**

Catch your friends the same way dolphins catch their prey. First, let’s review the concept of echolocation. Dolphins catch their prey by making a clicking sound. That sound bounces off any prey in the area and comes back to the dolphin as an echo. Now the dolphin knows where his or her prey is located. You and your friends can do this too!

**Step 1:** Gather a group of one or more friends.

**Step 2:** Choose one person to be the “dolphin,” and have the “dolphin” close or blindfold his or her eyes. (Be sure to play this game in a safe place.) The other players will be the prey.

**Step 3:** The “dolphin” makes a clicking sound.

**Step 4:** The other players must repeat the same clicking sound like an echo. Each player should try to imitate the sound exactly.

**Step 5:** The “dolphin” chases his or her prey based on the location of the echoes and tries to tag someone. If you are tagged, you become the next dolphin.

Listen closely and good luck!
Activity: Play “Dolphin Tag”

To play this game, you will need at least four people. Everyone sits in a circle, and one person stands in the middle holding a pillow. To begin the game, each person chooses a sound. This sound will be your unique name, just like a dolphin’s. One at time, make your sound. Be sure to listen carefully to each person’s sound. Once everyone knows each other’s sounds, the game begins.

Choose one person to begin. This person will make his sound first; then he will make another person’s sound. The person whose sound he makes will become “it.” Now there is a race!

The second person has to answer by making her own sound, and then call on someone else by making the other person’s sound, before the person in the middle hits her with the pillow. If she succeeds, the person she has called on becomes “it” and the game continues. If she is hit with the pillow, she replaces the person in the middle and receives the pillow. The person who was in the middle becomes part of the circle and the game starts over.

To summarize: you become “it” when another person makes your sound. Your goal is to answer by making your sound, and then call on someone else by making his or her sound, before the person in the middle hits you with the pillow.

Good luck!
Dolphins form very close bonds with their friends and families. When they are in the wild, they often stay in groups of 2–40 called “pods.” They never choose to be on their own. When they are with their pods they play, hunt, and swim together. When they are alone they become very sad. We cannot know for sure what they are feeling, but scientists guess they feel lonely. When they become sad like this they may stop eating, playing, or performing normal tasks. To prevent this, the government has strict rules against keeping a dolphin all on its own. There must be at least two dolphins to keep each other company. If they are friends, they will play together, nudge each other playfully, or even sometimes “hold hands,” which is really holding fins.

How do you think Winter felt when Panama died?

(Answer: She probably felt abandoned and lonely. Playing with Sawyer meant she was accepting him as her friend again, and beginning to feel less depressed. It was a sign of hope.)

Why was it important that Winter played with Sawyer in Dolphin Tale 2?
What’s the word for dolphin in different languages?

Different languages use different words for “dolphin.”

Greek: delphis  
Latin: delphinus  
Spanish: delfin  
French: dauphin  
Old English: delfin  
Italian: delfino  
German: delfin  
Hungarian: delfin  
Japanese: iruka  
Chinese: hai tun

Did you notice that they are very similar?

People who study languages are called “linguists.” Linguists have noticed that some words sound similar to each other even though they come from different languages. How could two countries that exist far apart from each other use the same words? A special science tries to answer this question. It is called etymology.

Etymologists study words to figure out why different people have similar words. Linguists are really language detectives!

Do you want to be a language detective for a minute?

Let’s try to figure out why some of these words are similar and some are different. First, look at the ones that are not similar. Do you see them? Iruka and hai tun are very different from everything else. So, for now, let’s set them aside. Now look at the Old English, Spanish, German, and Hungarian words. These are all shortened versions of which language’s word? Can you spot it? Yes, it’s Latin! Delphinus is the Latin word for dolphin that would have been used over 2,000 years ago in Rome, Italy.

Do you know which language is even older than Latin?

It’s Greek! A famous poet named Homer used the word delphis in his epic poems The Iliad and The Odyssey long before anyone spoke Latin. When the Romans came along, they heard the word delphis in Greek and decided to use it. Over time, they changed it to delphinus to match the structure of their language.

The Romans went on to conquer most of the known world before they, too, were defeated. As a result, Latin spread all over Europe. Over time, it changed into other languages, such as Italian, Spanish, and French.
Now, get out a map.

On the map below, take the different words for “dolphin” from the previous page and match them up with the countries they belong to. Look carefully at your map. Why do you think Japan and China have different words for dolphin than the ones that came from Greek?

Did you figure it out? Now you are a language detective too!
Math with Dolphins

If you are interested in working with dolphins like Winter or other marine life, you still need to understand basic math concepts. Being able to look at a paragraph of words and see the math equations behind it is one of the most important skills you can develop. In this section, we’ll see some of the ways that math relates to dolphins and their care. Let’s start simply:

1. Have you ever become really tired in the afternoon? What do you normally do to stop feeling tired? You probably eat or take a nap. Why does eating give you more energy? Well, all food has energy in it. When you eat, your body takes the energy from the food and uses it to stay awake and alert. Scientists can even measure the amount of energy in the food before you eat it. They call the energy “calories.” If you eat something with 100 calories in it for lunch, you would gain 100 units of energy. If you ate something with 200 calories in it for dinner, how much more energy would you gain than you did at lunch?

Skills: word problems, subtraction
2. In the biology section, we learned that dolphins eat for energy too. Since dolphins have to hunt for their food, would it be better for them to eat food that is high in calories or low in calories? Why?

Skills: word problems, comparison, logic

3. Imagine you are taking care of a dolphin named _______________________. This dolphin needs to eat 500 calories for lunch. You need to find the cheapest way to feed him or her. Look at the chart below and determine which kind of fish you should buy. How much will it cost to provide lunch for your dolphin?

<table>
<thead>
<tr>
<th></th>
<th>Calories</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>squid</td>
<td>40</td>
<td>$1 each</td>
</tr>
<tr>
<td>cod</td>
<td>20</td>
<td>$2 each</td>
</tr>
<tr>
<td>mackerel</td>
<td>80</td>
<td>$1.25 each</td>
</tr>
</tbody>
</table>

Skills: word problems, comparison, division, multiplication
4. Imagine you are going diving in the ocean to observe the dolphins. You will need an oxygen tank so that you can stay underwater for a long time. On the surface of the water, you can swim for 30 minutes with 10 units of air. But when you go deeper you use more air for each breath.

You swim deeper and deeper until you reach 33 feet below the surface. Now you use twice the air for every breath you take. How many units of air will you need to put in your tank to swim for 30 minutes while 33 feet below the surface? What if you wanted to stay at 33 feet for an hour?

Skills: word problems, multiplication, finding an unknown, solving equations
Now let’s use your practiced math skills to help the real dolphin Winter!

5. Winter eats many times a day. Here is a sample of her daily meal schedule, according to the Clearwater Marine Aquarium:

- 8:00 am - 2 lbs of fish
- 9:00 am - 2 lbs of fish
- 10:45 am - 0.5 lbs of fish
- 11:00 am - 1 lb of fish
- 1:15 pm - 0.5 lbs of fish
- 1:30 pm - 1 lb of fish
- 3:15 pm - 0.5 lbs of fish
- 3:30 pm - 1 lb of fish
- 4:30 pm - 2 lbs of fish
- 5:30 pm - 1.5 lbs of fish
- 6:00 pm - 1.5 lbs of fish

(In measurements, “lb” is the abbreviation for a pound.)

Now, using this information, see how many of these math questions you can answer.

- How many times a day does Winter eat?
- How many pounds of food does Winter eat in a full day?
- Does she eat more food in the morning or in the afternoon?
- If you were buying fish for a week of Winter’s meals, how many pounds of fish would you need to buy?
- Do you know how many ounces make up a pound? How many ounces of food does Winter eat every day?
- For a final challenge, how much food does Winter eat in an average feeding?

Skills: decimals, addition, comparison, multiplication, unit conversions, averages
**Dolphins in Literature**

*Island of the Blue Dolphins* is a Newbery award-winning novel by Scott O’Dell. In this story, a young Native American girl is abandoned on an island off the coast of South Carolina. She builds a house, makes weapons, and fends off wild animals to survive. After waiting alone for someone to rescue her, she attempts to sail away in a canoe. She does not get very far and has to return to shore. As she returns to shore, dolphins swim alongside her. The dolphins encourage her and make her feel less alone, changing the course of her stay on the island. Read the book to find out if she escapes from the island.

*The Music of Dolphins* is a novel by Karen Hesse. It tells the story of a young girl named Mila who is raised by dolphins after being stranded in the Caribbean as a child. Many years later, humans find her. When they first find her, she cannot speak or act like a human. She only knows how to behave like a dolphin. The book recounts Mila’s struggle to adjust to human society. Read the book to find out if she returns to the ocean or decides to stay with other humans.

- **Island of the Blue Dolphins**
  - Winner of the 1961 Newbery Medal
  - Published by Houghton Mifflin, 1960
  - 192 pages
  - Ages 9–12 (grades 3–7)

- **The Music of Dolphins**
  - ALA Best Book for Young Adults
  - Published by Scholastic Press, 1969
  - 192 pages
  - Ages 12+ (grades 7+)

Dolphins have inspired creative people to tell their stories in books as well as movies. The two books listed below are excellent examples of children’s literature that features dolphins. Read them on your own or aloud as a family.
After reading one or both of these novels, answer the following questions for yourself or in a discussion with others:

1. Who was it about? (Identify the characters)

2. When and where does it take place? (Identify the setting)

3. What problems did they face? (Identify the conflict)

4. How was the problem resolved? (Identify the resolution)

5. What can you learn from this book? (Identify the lesson or moral)
Exercise: Plot Diagrams

Do you know how to create a plot diagram? It may sound scary at first, but it is actually very simple. There are only five steps.

1. First, draw a triangle that looks like this:

2. Once you have drawn your triangle, think about the story you have just read. Can you identify the climax, the point in the story when all of the conflict peaks? Write the climax at the top of the triangle, where lines A and C meet.

3. Now think back to the very beginning of the story. Write the first thing that happens on the left point of the triangle, where A and B meet. Use key words like “battle,” “boat crash,” or “new friend.” Now think of other major events that occur between the story's beginning and its climax. Write key words for these events along line A until you reach the climax.

4. Now think back to the end of the story. Write the last thing that happens on the right point of the triangle, where C and B meet. Now think about the events that occur between the story's climax and its conclusion. Write key words for these events along line C. This is the “wrapping up” part of the story where everything comes together and the conflict is resolved. You’re almost done!

5. Finally, along line B, write the settings of the story. Try to line them up with the plot points on lines A and C, making the locations line up with the events. When you finish, you now have a completed plot diagram! You can use this diagram to help you write a book report, discuss the book, or remember the story so you can talk about it later.
Did you know that poets have also been inspired to write about dolphins? The following poem was written by a famous Irish poet named William Butler Yeats.

Yeats often talked about ancient mythology and history in his poetry. In this poem, Yeats imagines arriving in the ancient city of Byzantium. There, he sees dolphins carry the dead to their places in the afterlife.

Excerpt from “Byzantium” by William Butler Yeats

Dying into a dance,
An agony of trance,
An agony of flame that cannot singe a sleeve.
Astraddle on the dolphin’s mire and blood,
Spirit after Spirit! The smithies break the flood.
The golden smithies of the Emperor!
Marbles of the dancing floor
Break bitter furies of complexity,
Those images that yet
Fresh images beget,
That dolphin-torn, that gong-tormented sea.
Learning about Rhyme in Poetry

1. Assign the letter “A” to the first line of the poem, like this:

A  Dying into a dance,

2. If the next line rhymes with it, give that line the letter “A” as well. If it does not rhyme with the previous line, assign it the letter “B.” Does “trance” rhyme with “dance”? It does! So, we assign it a letter “A” as well.

A  An agony of trance,

3. Continue assigning letters to each line of the poem, using a new letter each time the last word has a new sound. All lines that share the same rhyme sound should have the same letter. “Sleeve” does not rhyme with “dance” and “trance,” so it gets the letter “B.” The next few are done for you.

B  An agony of flame that cannot singe a sleeve.
C  Astraddle on the dolphin’s mire and blood,
C  Spirit after Spirit! The smithies break the flood.

See if you can do the same for the rest of the poem.

Read Yeats’s poem aloud, and then underline all of the rhyming words at the end of the lines. Notice how Yeats does not make every line rhyme? Here’s how you can find the rhyme scheme of a poem.
Write your own poem with a dolphin in it. Remember what you have learned about dolphins and how they behave. You could use short, rhyming lines to tell a story in which a dolphin saves a person or plays in the surf. You could simply use lots of adjectives to describe what a dolphin looks like and compare dolphins to other things, like the silvery sheen of the moon or a squeaky rubber ball. Like Yeats, you do not have to make every line rhyme. You could use the same rhyme scheme that Yeats does, or make up your own structure. Have fun!
Have you ever been on a boat so far away from shore that you could not see any land at all? If you have not had this experience, try to imagine it. No matter where you look, all you see is the ocean. You know that below you lie miles and miles of water so deep you can only dream what lives there.

Now imagine that you are in an old wooden boat and do not have any technology to help you navigate. Does that sound scary? The ancient civilizations thought so, too. For a very long time, people were so afraid of the ocean that they thought it was a god. In fact, the word “ocean” comes from the name of the Greek ocean-god, Okeanos.

Almost all cultures that lived near water had myths about dolphins. They saw that dolphins were smart, kind, and funny, and they could not understand how an animal could have those traits. To explain it, they made up stories about dolphins being more than just animals. They thought the only way dolphins could be so amazing was by magic or the act of a god.

The ancient Greeks believed in a god called Delphin. He was a dolphin who worked for Poseidon, the god of the ocean. According to myth, Delphin convinced a woman to love Poseidon after she had rejected him. In order to thank Delphin for his help, Poseidon created the constellation Delphinus.
Delphinus is located in the Northern Hemisphere. The constellation is made of five stars that look like a diamond with a tail pointing down. It is usually visible not long after sunset (about 8 p.m.).

Start by facing south. Look up high to find the three bright stars that make up the Summer Triangle. The bottom star in the triangle is called Altair, and it is part of the constellation Aquila (the eagle). Now hold up your arm and measure one fist to the left of Altair. You should be looking at the tail of Delphinus.

The Greeks also had a myth about the god Dionysus that involved dolphins. One day, Dionysus disguised himself as a mortal man and was kidnapped by pirates. While out at sea, Dionysus transformed himself into a lion and attacked his captors. They jumped out of the ship to escape him, and they turned into dolphins as they fell. Dionysus then charged them with the responsibility of saving any drowning person they encountered.
The Origins of Marine Biology

One of the first men to study marine life carefully was a man named Aristotle, who was born in 384 BC. You might know him as a Greek philosopher, but before Aristotle lectured and wrote about philosophy, he was a biologist. He was the first-ever marine biologist, a scientist who studies the life in the ocean. Aristotle noticed that dolphins and some other sea creatures gave birth to their babies instead of laying eggs. The Greek word for womb (where the mother carries her baby inside her) is delphys. Since dolphins were thought of as fish with a womb, they were called delphis, which eventually translated to “dolphin.”

The medieval world also valued dolphins, and even though they did not think dolphins were gods or magical, they did believe dolphins had a special ability to rescue travelers and guide them. The Roman historian Pliny the Elder, who lived in the first century AD, was responsible for many of the myths about dolphins that persisted.

Medieval artists used dolphin images to symbolize speed, guidance, or love. Sometimes the dolphins they drew appeared kind; other times, fierce.

It wasn’t until the Age of Exploration that men were able to study the oceans and marine life in detail. In 1728, a boy named James Cook was born in England. When he was growing up, exploring was a popular career. European nations competed to send their sailors all the way around the world, a feat called circumnavigation. Here’s a fun fact: the first ship to circumnavigate the world twice was named HMS Dolphin!

So, Cook studied navigation and math as a teenager, and then he, too, became a sailor. In 1768, his skills earned him a position on HMS Endeavor for a voyage to the South Seas with a special purpose. From Tahiti, Cook hoped to watch the planet Venus move across the face of the sun.

This only happened once every hundred years! Along the way, Cook and another man on board named Joseph Banks recorded the many new plants and sea creatures they saw, including penguins, seals, coral, seaweed, and dolphins! Here is his journal entry from January 3, 1769:

Tuesday, 3rd.
Fresh gales and clear weather; under Single Reef Topsails. P.M. Saw some Whales and Porpoises and small red Crawfish, some of which we Caught. At Noon saw several Birds of a light Grey Colour, like Pidgeons, but smaller; these are of the Mother Carey’s kind.

After completing their mission in Tahiti, Cook and his crew went on to sail all the way around the world, taking notes as they went. Their journals became an important source of information for the relatively new field of marine biology.
Activity:

Captain Cook included in his journal a sketch of dolphins that he saw off the coast of Rio de Janeiro, Brazil.

Can you copy his drawing?

Place a thin sheet of white paper over it and use a pencil to trace the lines.

Or, if you’re feeling adventurous, try to copy it freehand.
In the nineteenth century, interest in marine biology grew. You may be familiar with the name Charles Darwin, but did you know that he started his career as a naturalist? In 1831, he joined a voyage on HMS Beagle to explore the Galapagos Islands. There, Darwin identified a wide variety of unfamiliar animals and studied them in detail. He discovered many things about the coral reefs and barnacles. His research is still valued today. Here is a sample from his writings:

In the sea around Tierra del Fuego [Argentina], and at no great distance from the land, I have seen narrow lines of water of a bright red colour, from the number of crustacea, which somewhat resemble in form large prawns. The sealers call them whale-food.

Whether whales feed on them I do not know; but terns, cormorants, and immense herds of great unwieldy seals derive, on some parts of the coast, their chief sustenance from these swimming crabs.

Take a minute to compare Darwin’s style of writing to Cook’s. What do they have in common? How are they different? What can you learn from both of them about observing the natural world?

After Darwin’s return, Great Britain sent out another ship called HMS Challenger. This expedition, led by a British man named John Murray and a Scottish man named Sir Charles Wyville Thomson, was the first designed specifically to gather information about the ocean. The Challenger set sail in 1873. The scientists traveling with Thomson discovered many new things, including the existence of life in the deep zones of the ocean. Before this, scientists had believed that the bottom of the ocean was uninhabitable. By the end of three years, they had collected fifty books’ worth of information. In these books were 4,717 new species!

Then, in 1901, the British government sponsored a voyage to explore Antarctica for the first time. HMS Discovery, commanded by Robert Falcon Scott and accompanied by artist Edward A. Wilson, followed a similar route to the one Cook, Darwin, and others had taken. Wilson wrote, “The peace of God that passes all understanding reigns here, in these days. One only wishes one could bring a glimpse of it away with one, with all its unimaginable beauty.”

http://www.scottslastexpedition.org/expedition/steaming-south/
Activity: Start a Nature Journal

All of these early marine biologists kept journals, and they drew and labeled everything they saw. They even wrote down the location of the discovery and any other information they found interesting. These journals then became the basis for their official books.

You can do this too. All you need is blank paper and a pencil to record your observations. You can draw a person, an animal, a plant, a room, the sky, or a body of water. Visit the same place at different times of the day and see how the light changes. Try sketching interesting things, creating maps, collecting objects, building models, or writing poems. The important thing is to observe closely and write down what you see. You never know what you will discover.
Activity: Create Your Own Timeline

Place the information from the history lesson into this timeline.

384 BC
AD 1728
1768
1831
1873
1901
2005
As you have already learned, dolphins have been loved by many different cultures and civilizations. Since so many people have loved dolphins, there are many works of art about these creatures. Some of the oldest art in the world contains dolphin images!

An ancient civilization called the Minoans lived on an island called Crete (near Greece) from about 2000 to 1500 BC. The Minoans were unique for many reasons. First, they loved nature and painted scenes of animals and plants—without people. (Many ancient cultures tended to make art that showed only people.) Second, their frescoes still exist today! Frescoes are very difficult to paint. Back then, people covered their walls with plaster to make them smooth and sturdy. Many walls today are still covered with plaster.

To make a fresco, which comes from the Italian word for “fresh,” artists painted over wet plaster. When the plaster dried, the paint dried into it. As a result, the paint did not chip off the surface as it aged.

Have you ever seen the paint chipping off a wall? Paintings do that, too, if the artist is not careful. That is why the Minoans painted frescoes. If they had not used this difficult technique, their paintings would not have survived this long.

What do you think the Minoans painted in their nature scenes? Well, they lived on an island, so they painted lots and lots of sea creatures! They especially liked to paint dolphins. Art historians believe the Minoans painted these beautiful dolphin frescoes somewhere between 1600 and 1500 BC.
Long after the Minoans died, other cultures continued to include dolphins in their art. Another example is the art of Rome, Italy. In order to understand why the Romans painted dolphins, you have to know about water in Rome. The ancient Romans brought water into Rome using aqueducts. These were like long bridges or gutters that carried water into the city for drinking and bathing. Aqueducts were extremely important to the Romans. Then people called the Goths and Vandals attacked Rome and destroyed the aqueducts. For many, many years, these systems did not work at all! Then, during the Renaissance, the Italians rebuilt their aqueducts. In order to honor this event, the best artists of the time made new fountains. And what appeared on those fountains? You guessed it—dolphins!

The famous artist Gian Lorenzo Bernini sculpted the fountain pictured above. It shows a scene from the ancient poet Ovid’s poem *Metamorphosis* in which King Triton commands the entire ocean to do his will. Even the dolphins obey him. By making this sculpture, Bernini is saying that the people of Rome now have command over the water again. The dolphins may also symbolize good fortune for the future of Rome—just as they did in *The Island of the Blue Dolphins* and in ancient mythology.
Try drawing your own version of the dolphin fresco here.
The dolphins’ habitat has an especially important role in the history of art. Artists paint the sea in many different ways, and each painting tells a different story. Each story can have characters and a problem to solve, or it can simply portray a mood such as peace or chaos. In this section, we’ll focus on two different ways of painting the ocean.

The first example is a painting called “Breezing Up (A Fair Wind)” by a famous American artist from the nineteenth century named Winslow Homer. He includes people in this painting, as if freezing a moment in a story. He makes the viewer wonder where the boys came from, what they are doing, and where they will go. He also makes us wonder about the storm clouds. Have they just passed and the sun is just now shining after a long storm, or are they creeping up behind the boys, about to pour down rain? By placing the boys so close to the front of the image, Homer draws our attention to the interaction between the boys and the ocean.

On a separate piece of paper, try to tell a story with an ocean painting or drawing! Start by drawing the characters in your story: people or animals on a boat. If you want them to appear close to you, draw them farther down on the page and bigger. If you want them to appear farther away, place them higher up and make them smaller.

Think about the mood you want to create. Is it dangerous to be out on the ocean? Is it a calm day? If it is dangerous, draw the ship slanted. If it is calm, draw it level. Now draw in the waves around the boat. If it is calm, put only a few little waves, but if it is stormy, add big waves. Last, put in colors that fit the weather you have chosen. Make the colors bright and sunny if the weather is calm and dark with more greens if it is stormy.

Have fun!
The second example of an ocean painting is “The Great Wave Off Kanagawa,” by a Japanese artist from the nineteenth century named Katsushika Hokusai. He created an image of the ocean as well, but he did it very differently. The Japanese valued grace, elegance, and balance in everything they did, especially their art. By using long flowing lines for the water and short little lines for the foam at the tips of the waves, Hokusai makes the waves feel real.

Although both paintings depict the ocean, “The Great Wave” looks different from “Breezing Up” because Hokusai and Homer thought different things were important. Like “Breezing Up,” this painting tells a story, but you have to look carefully to see it. Do you see the ships sailing the seas? They are partly covered by the waves. Do you see the tiny mountain in the background? That is probably Mount Fuji, the tallest mountain in Japan, and an active volcano. Because Hokusai hides the ships and the mountain behind the waves, he draws our attention to the power of the waves rather than the power of the volcano or the fishermen.

So how did Hokusai create this work of art? Believe it or not, this is not a painting. A famous form of Japanese art is called wood printing. The Japanese artists first set a picture on a wood plank. Then, they carved out the outlines. Next, they covered the plank in ink. Finally, they pressed the ink-covered wood onto paper, like a stamp, to produce the finished product, a mirror image of the original picture.
How to Draw

Step-by-step explanation of how to draw a dolphin.

1. Start by drawing the dolphin’s body.
2. Add beak, blow-hole, eye details.
3. Add outer fins.
4. Add last fin.
5. Use shading techniques to add dimension and further detail.
Try drawing a dolphin here.
Wood Printing: Do you want to try?

First, ask an adult for help. This is a bit more complicated than a normal drawing or painting. You will need a soft plank of wood, carving tools, and some kind of ink. You can find these for about $5 to $10 at a craft store.

**Step 1:** On your paper, draw a picture of waves, a dolphin, or both! Use a No. 2 pencil or a softer pencil. You can either copy Hokusai or make up your own image. The artist has many more wave paintings that you can copy if you do not like this one.

**Step 2:** Place your drawing face down onto the piece of wood, and rub it firmly with the back of a spoon. Make sure to rub all over so the whole image presses onto the wood. The drawing should appear lightly on the wood when you remove the paper.

**Step 3:** With an adult’s help and guidance, carve the outlines of the drawing into the wood.

**Step 4:** Cover the wood in any color ink you want. I suggest blue since you are creating a woodprint of the ocean.

**Step 5:** While the ink is still wet, press a piece of paper on top of the wood. Then, carefully, remove the paper and let it dry flat.

*Now you have a woodprint just like Hokusai’s “The Great Wave!”*
Color a family of dolphins.
Draw your own version of a seascape here.
What does the Bible tell us about dolphins?

Genesis 1:20-23 says, “And God said, Let the waters bring forth abundantly the moving creature that hath life, and fowl that may fly above the earth in the open firmament of heaven. And God created great whales, and every living creature that moveth, which the waters brought forth abundantly, after their kind, and every winged fowl after his kind: and God saw that it was good. And God blessed them, saying, Be fruitful, and multiply, and fill the waters in the seas, and let fowl multiply in the earth. And the evening and the morning were the fifth day.”

Read the passage from Genesis with your family and answer these questions:

- What does this passage teach us about dolphins?
- What does this passage teach us about God?
- How do dolphins glorify God?
- How can people glorify God in a way that involves dolphins?
- How can we (as a family) glorify God using what we have just learned?
Are there any famous examples of Christians who cared for animals?

In the late twelfth and early thirteenth century in Italy, there was a young man named Francis. Francis loved to party, drink, and spend lots of money. One day, he was kidnapped while fighting in a war. It took his father a whole year to ransom him back. During that year, Francis became very sick, sad, and lonely.

When he returned home, he was very different than he had been when he had left, but he did not yet give up his luxurious ways. Then, as he was about to join another army, he had a vision that God spoke to him. God told Francis to rebuild the church and devote his life to the poor. So, Francis left his father and his money and became a monk, preaching and building up the church.

Francis was so passionate about Christ that he even preached to the animals! He loved everything God created, whether big or small. Here is a story that one biographer wrote about him in the 1300s:

A certain young man having caught one day a great number of doves, as he was to sell them he met St Francis, who always felt a great compassion for such gentle animals; and, looking at the doves with eyes of pity, he said to the young man: “O good man, I entreat thee to give me those harmless birds, emblems in Scripture of humble, pure, and faithful souls, so that they may not fall into cruel hands, which would put them to death.”

And the young man, inspired by God, immediately gave them to St Francis, who, placing them in his bosom, addressed them thus sweetly: “O my little sisters the doves, so simple, so innocent, and so chaste, why did you allow yourselves to be caught? I will save you from death, and make your nests, that you may increase and multiply, according to the command of God.” Then St Francis made nests for them all, and they began to lay their eggs and hatch them in presence of the brethren, and were as familiar and as tame with St Francis and the friars as if they had been hens brought up amongst them, nor did they ever go away until St Francis had given them his blessing.

—Ugolino Brunforte, “The Little Flowers of St. Francis of Assisi”

Francis was later named a saint by the Catholic Church. You might know him as Saint Francis of Assisi. After his death, many more stories emerged about Francis’s love of animals. Pope John Paul II even named him the Patron of Ecology in 1979!

On the next page is a prayer that Francis prayed for animals. You can pray this with your family or discuss it together.
**Prayer of Saint Francis for Animals**

God Our Heavenly Father,
You created the world
to serve humanity’s needs
and to lead them to You.
By our own fault
we have lost the beautiful relationship
which we once had with all your creation.
Help us to see
that by restoring our relationship with You
we will also restore it
with all Your creation.
Give us the grace
to see all animals as gifts from You
and to treat them with respect
for they are Your creation.
Winter
winter
Practice cursive writing:
So God created the great creatures of the sea and every living thing with which the water teems... Genesis 1:21
In both *Dolphin Tale* movies, we saw lots of people working at the aquarium with the animals. Each volunteer and staff member had his or her own job to do. Do you want to work with animals like Sawyer and Hazel did? If so, there are lots of jobs you could do! Here are a few great career choices.

### Marine Biologist

There are many career options within marine biology. People who study sea life can be physicists, mathematicians, ecologists, biologists, oceanographers, or chemists. Most marine biologists pick one species that interests them and study that species in depth. If you love dolphins, you might become a marine biologist specializing in dolphins. This generally takes about six to eight years of school after high school. Some schools along the coast have special marine biology programs where you can study the ocean like Sawyer does in *Dolphin Tale 2*.

Luckily for you, there are plenty of ways to learn about the ocean even before you go to college. Go exploring next time you visit the ocean, and record your findings. Read a good book about the ocean, or even dissect a fish with your friends. The next important thing to do if you want to become a marine biologist is to meet one. Go online and search for a professor in a college near you and ask if you could meet. Often, they will say yes! Ask them what they like and dislike about their job. Then, study lots of biology in high school so you will be prepared for college.
Veterinarian

Veterinarians are animal doctors. To become a vet, you would attend a normal college and take pre-med classes such as biology, chemistry, physics, and other maths and sciences. Then you would take classes about animals, including animal nutrition, zoology, animal biology, or others. You might volunteer at an animal hospital or watch a real vet work. Then, you would go on to a special four-year school for becoming a veterinarian.

If you are considering a career in veterinary medicine, try it out first. Contact your local veterinarians and ask to visit their offices. They might allow you to shadow them (follow them for a day) or observe the animals. You might also be able to volunteer at a local animal shelter. Ask and find out!

If you decide you love the job, then you should start learning everything you can about animals. The first two years of medical school focus on memorizing facts about anatomy. You can do some of that now! Search your local library for a good book on animals and animal anatomy: bones, muscles, and organs. You could even keep an animal journal, in which you write about and draw animals that interest you.

Veterinary Technician

A veterinary technician is like an animal nurse. If you became a veterinary technician you would help the doctor. You might apply a bandage, give a shot, or check the heartbeat of an animal. To become a vet tech, you have to go to a special school for two years after high school.

Veterinary Pathologist

A veterinary pathologist studies animal diseases. They try to find the cures and causes for mysterious diseases. If you love chemistry and looking at samples under a microscope, this may the job for you! If you become a vet pathologist you will spend most of your time in the chemistry lab instead of out in the field with the animals. To become a vet pathologist usually takes two years longer than it does to become a normal veterinarian.
**Animal Trainer**

Animal trainers do exactly what you might guess: they train animals. They do this in lots of different settings. It could be on a movie set, in a zoo, for private homes, or in an animal shelter. In *Dolphin Tale 2* there were lots of animal trainers around the aquarium to help with the animals. There were probably even trainers on set to help with the dolphins during the making of *Dolphin Tale 2*.

Trainers might even train animals for service. Service dogs serve people in various ways. They often guide blind or deaf people. Service animals can also be dogs, horses, or even dolphins that are used for therapy to make sick people feel better.

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**Animal Caregiver**

Animal caregivers take care of animals on a daily basis, unlike veterinarians, who take care of animals only when they need attention. Caregivers do many things to care for animals, including feeding, cleaning, training, or exercising them. As an animal caregiver, you could work at an animal shelter, a zoo, or a farm. You would also have to be very compassionate, kind, and patient. Most of the time, a college degree is not necessary to become a caregiver.

If you are interested in this career, start taking care of animals now. If you do not have a pet, or even if you do, you can volunteer at an animal shelter, a kennel, or a stable. You could even start your own business taking care of friends’ pets when they go out of town! Get creative and do not be afraid to ask for help.
Animal Behaviorist

An animal behaviorist helps animals that are behaving abnormally, like Winter. They watch them closely and try to figure out why they are acting differently, and then try to find a way to fix it. In Winter’s case, an animal behaviorist would notice that she was sad, decide that it was because she was all alone, and fix it by giving Winter a friend. If you want this career, you will have to do about the same amount of school as a veterinarian—eight years after high school. But you will get to work with animals while still in school.

Zoologist

A zoologist studies everything about animals in their natural habitat. This includes what they eat, where they sleep, how much exercise they need, etc. While many zoologists work in a zoo, some do not. They can work in the wild, in offices, or in laboratories. Wherever they work, they spend a lot of time watching animals to see how they behave. To become a zoologist, you have to go to college for at least four years and study biology or more advanced animal studies.
Draw more dolphins!
Write down what you know about dolphins here.

Give your family a presentation on dolphins.
For Parents:

If you enjoyed this type of learning, you might like classical, Christian education. A classical, Christian education teaches students to view the world as a whole, with all the subjects created by God and glorifying God, rather than the fragmented way that modern secular education teaches subjects.

Classical Conversations is an organization that exits to support homeschooling parents. We believe that every child is uniquely and wonderfully made and that parents are the best teachers for their children. We believe the purpose of education is to teach a child how to learn and that the pinnacle of education is to know God and to make Him known. We believe the practice of education is most fruitful in a supportive community. We believe in investing in free parent training and equipping. We support parents through free parent conferences and many online resources. One great resource for homeschooling parents or parents who want to supplement school work with additional learning is the “Articles” section of our website. A new article is posted each weekday. Topics range from encouragement to understanding the classical model of education. The following article was posted by veteran homeschooling parent Courtney Sanford.
A Model for a Classical Conversation

By Courtney Sanford

The guide for today’s science seminar in Challenge I said, “Discuss Module 4.” Previous discussions with this class had been a bit boring, so I decided I needed a new model for discussions. I did not plan any questions or make an agenda about what they needed to know. I went in with one idea in my mind: the topic wheel.

The students had spent two weeks studying a chapter on water in the physical science textbook. They had completed labs, written lab reports, and answered study questions.

I drew a topic wheel on the whiteboard. A topic wheel is simply one circle in the center and seven more circles surrounding it. I wrote “water” in the center circle. The seven other circles are intended for other subjects. The idea is to provoke thought by having the group brainstorm about what different subjects have in common with the central item. (This would be the topic of comparison if you are familiar with the five common topics.)

In the top outside circle I wrote “Geography” and asked the class what geography and water have to do with each other.

“Four oceans: Indian, Arctic, Atlantic, Pacific!”

“74% of the earth is covered with water!”

“Canals, channels, tributaries, rivers, all that stuff from Challenge A.”

“So, channels were dug for what reason?” I asked.

“People can move things on water…so it helps trade.”

In another circle on the board I wrote “Economics” and inside, I wrote “Enables trade.”

“In what other ways does water affect economics?” I prompted.

“We pay for city water at my house.” (I wrote “city water” in the circle.)

“We have a water purifier.” (“Products” goes in the economics circle.)
Several other products related to water were mentioned for economics. Then I asked, “What’s another topic I could put in one of these circles?

“Science?”

“What should we put in that circle?”

“Let’s put all these facts in there like it takes two hydrogen atoms and one oxygen atom to make water.”

“Cohesion, that property where water attracts itself.”

We added circles for history, literature, and even art, when one student said, “Water is beautiful!” We filled the circles with many facts and figures. When we only had one circle left I asked what we should put there and one student suggested, “Put the Bible in that one.” So we went around the room and had each person think of one mention of water in the Bible. We added the flood, baptism, turning water to wine, parting the red sea, and so on. Then, the last student brought up creation and that water was created before land. He wondered how that could be. How can you have an ocean without land forming the bottom of the ocean? This launched a discussion that went back to the properties of water listed in the science section.

Could cohesion have allowed water to form a sphere in space? Would it create its own gravity? What would that have been like?

A very enthusiastic discussion followed, with students applying what they knew about water to this idea of a sphere of water floating in space during the time of creation.

I was thrilled that the study of physical science had led us to this point. Our minds were stretched by thinking this through and we stood amazed at the complexity of water and its wonderful creator. And I had not planned anything! I went in with one tool in mind and facilitated a discussion and these wonderfully created and creative students did a lot of thinking and arrived at this great realization that I could not have explained to them if I had spent hours writing a lecture and doing research.

I think this is what makes a classical education great: we get together and we practice thinking and talking about what we have studied, and we learn more about the Lord because of it all.

That was a great classical conversation.
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