



# God Made **ANIMALS**

Science/Worldview | 5-7 Grade

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**Generations**  
PASSING ON THE FAITH

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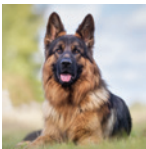
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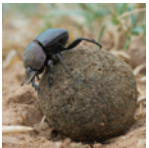
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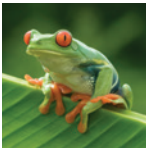
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# INTRODUCTION

**T**his course will represent a paradigm shift in the way that the student understands science. A biblical worldview perspective of science always puts God at the center. The purpose of science is to enjoy God in the context of His creation and praise Him for His marvelous works.

Thus, this course will provide devotional reading in many Scriptures throughout as we introduce the animal creation to the students. There will be many opportunities provided for prayer and singing of praise. These elements are core to a Christian view of science. As the teacher/parent disciples the child in the study of science, we hope the student develops a Godward view of science and all of life.

If education will be truly effective, the student must be well aware of the purpose of the study throughout. Hardly a page of the text should go by without the student realizing the high significance and purpose of the study. For the Christian, the purpose of science is absolutely clear. It is for praise

and dominion. We glory in God's nature and His works, and we seek to fulfill our role in ruling over the natural world (as the Lord commanded man to do at the beginning).

If there is a clear integration of praise and life application on every page, the material will be much better retained. The perpetual spewing of disconnected and purposeless facts in education does little for retention. When science is given meaning and purpose on every page, the student will be much more likely to retain the material and apply it in a meaningful way in his life.

There must be an integration of the material the student is learning into real life. Great efforts have been taken to provide suggestions on how this might be done. Laboratory work and experiments are interesting and helpful, but they are not enough. The student must find ways to take the scientific knowledge he has picked up and apply it to his own life, to his own home and garden, and to his own community.



For the 6th grade student, Generations introduces a biblical worldview into the field of science in the most winsome way possible. Captured in this introduction to animal biology are the most amazing facts and the most interesting facets of God's creation. The course is filled with Scripture and with a sense of wonder and praise, which is only fitting for a Christian child's

education. Prayers of praise and hymns will play an important part in the course. Critical elements of the biblical worldview in the scientific field are laid out to counter the false view of science that has become increasingly destructive in the present day.

Included in this course are the world of vertebrates, invertebrates, warm-blooded animals, cold-blooded animals, and

insects including the bombardier beetle, the butterfly, the spider, the mosquito, the dung beetle, the house fly, the silkworm, grasshoppers, the honeybee, the leech, the octopus, the jellyfish, the penguin, the chicken, the crow, and the pigeon, as well as the wonderful world of fish and mammals.

Also covered in this course is basic genetics, basic taxonomy, the basics of bird

flight, animal domestication, and real-life science application opportunities for the student. The student is introduced to man's responsibility to take dominion over insects, birds, fish, and domesticated animals as one of the most critical elements of science (from a biblical perspective).





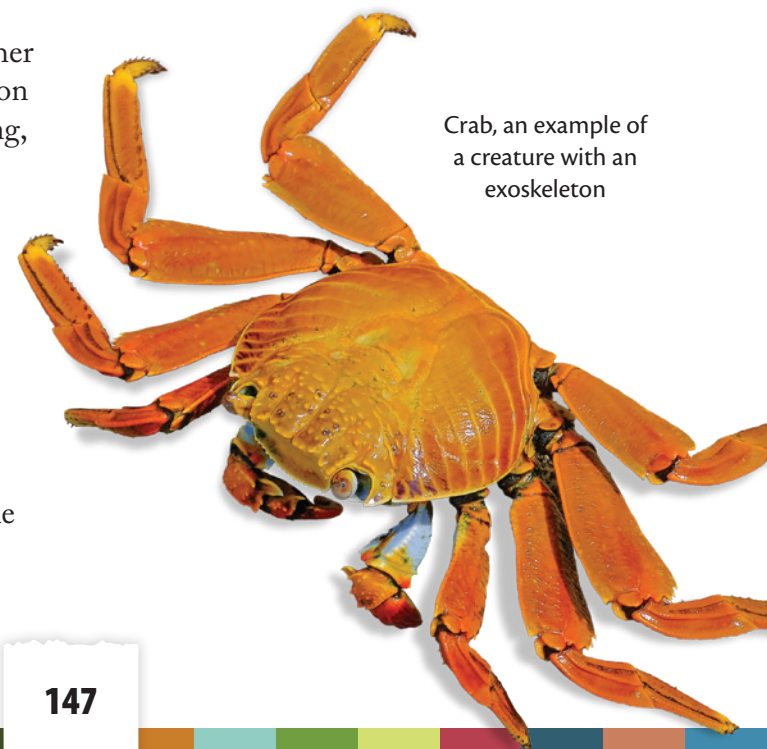


## Chapter 9

# GOD MADE FISH

Then God said, "Let the waters abound with an abundance of living creatures, and let birds fly above the earth across the face of the firmament of the heavens." So God created great sea creatures and every living thing that moves, with which the waters abounded, according to their kind, and every winged bird according to its kind. And God saw that it was good. (Genesis 1:20-21)

**E**very living being needs to stay together without falling apart or collapsing on itself. When He created everything, God designed the animals with various ways of keeping their bodies held together in one piece. He made animals with backbones (vertebrates) and animals without backbones (invertebrates). He made some animals with a jelly-like substance and some animals with an **exoskeleton**, such as insects and beetles. This is an external structural system that holds the little creature together.



Crab, an example of a creature with an exoskeleton



Vertebrates like fish are held together by a skeleton made of **bone** and **cartilage**. Your nose and outer ears are built up on cartilage. If you twist your nose and ears, you can tell that cartilage is more flexible than bones.

Bones serve another important purpose for all vertebrates. Our Creator God knew that the critical organs of the body would have to be protected, so He used the rib bones to protect the lungs and heart. He also made the **vertebral column** to protect the **spinal cord**, and the **skull** to protect the **brain**. Sometimes we hear of a person who has suffered a terrible accident, and their vertebral column and skull is cracked or broken. The injured person then may have to be confined to a wheelchair or to a bed for the rest of his life.

Praise God for the carefully designed skeletal system He provided for us out of His kindness and concern for our lives and the lives of his animals.

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The LORD is good to all: and his tender mercies are over all his works.  
(Psalm 145:9)

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### God Made 3.5 Trillion Fish

The Lord our God made fish and birds on the fifth day of creation. If you have ever gone swimming in the ocean, you know that the underwater world is a whole other world. It is teeming with life—an estimated 3.5 trillion fish. That's about 500 fish for every person on earth. This underwater creation is a charming, beautiful, mysterious world. Much of this part of God's creation has yet to be explored by humans. Surely, our Creator wanted a different ecosystem made for the delight of men and for His own glory.

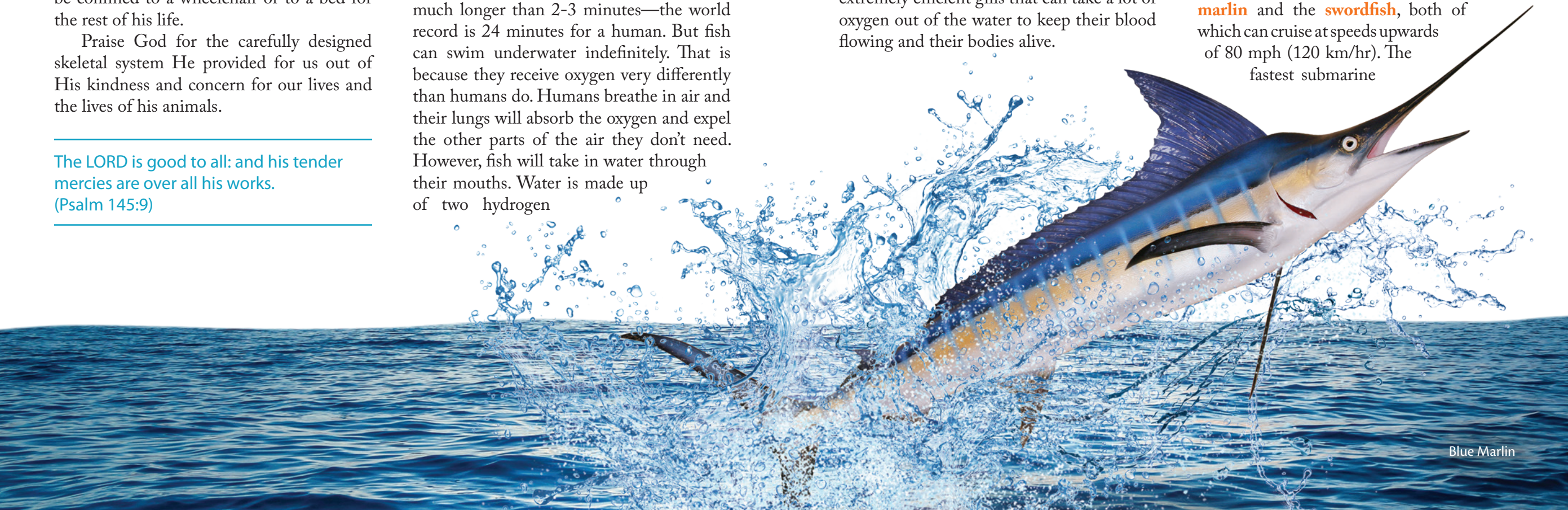
The most outstanding thing about fish is that they are able to breathe underwater. Most of us cannot hold our breath for much longer than 2-3 minutes—the world record is 24 minutes for a human. But fish can swim underwater indefinitely. That is because they receive oxygen very differently than humans do. Humans breathe in air and their lungs will absorb the oxygen and expel the other parts of the air they don't need. However, fish will take in water through their mouths. Water is made up of two hydrogen

atoms and one oxygen atom (and other substances like salt). God has designed feathery instruments in the fish gills to filter the oxygen out of the water. Meanwhile, the fish's heart is pumping blood into the gills, where it picks up the oxygen and distributes it through its body. There is far less oxygen in water than in air. Actually, the little bit of oxygen fish get out of the water would be equivalent to only one tenth of the oxygen available in the air on the top of Mount Everest. Those mountain climbers who make it up Mount Everest usually must rely on tanks of oxygen brought with them. To compensate for this deficiency of oxygen in water, the Lord has provided fish with extremely efficient gills that can take a lot of oxygen out of the water to keep their blood flowing and their bodies alive.

### God Made Fish to Swim

Fish are excellent swimmers, because the most wise Creator has designed their skeletons with maximum flexibility. Humans cannot manipulate their whole skeletal system with such ease and grace. However, fish will flex their bodies such that they can propel themselves almost effortlessly through the water. The Lord of creation made fish with five kinds of fins—the pectoral, the pelvic, the dorsal, the anal and the caudal fins. Typically, fish will gain the most speed by swishing the caudal (tail) fin back and forth. The pelvic and pectoral fins were designed to steady the fish in the water, to prevent them from rolling over.

The fastest fish in the world are the **marlin** and the **swordfish**, both of which can cruise at speeds upwards of 80 mph (120 km/hr). The fastest submarine



Blue Marlin





Walking Catfish



Mudskipper



Flying Fish

ever developed by man can only move at 51 mph (83 km/hr). God’s technology is hard to match by the greatest minds of men.

God made some fish super special, surely to confuse scientists who believe all this nature came about by chance. The **batfish** walks on the sea floor. The **walking catfish** can survive outside of the water for several days by a special respiratory system. This fish can “walk” on its fins from one water source to another, and thereby survive even when its swamps, ponds, and rice paddies dry up. This catfish was first found in Southeast Asia, but it has made its way into other countries. The **mudskipper** hops along across land on its fins. This fish can breathe through its skin and throat, as long as the skin stays moist. It is found along the coast of eastern Africa and India.

The **Hawaii goby fish** has been seen climbing up sheer rock faces to get to the top of waterfalls. He uses his mouth and little sucker appendages on his belly to work his way up the cliff.

Our blessed Creator has also made some fish to fly. He equipped the **flying fish** with fins designed like bird’s wings, with the same aerodynamic characteristics. The record flight for this amazing fish was 45 seconds, and they have flown as far as 1,300 feet (400m), reaching altitudes of 20 feet (6m) in the air!<sup>25</sup>



Clownfish

### Defense Mechanisms

For the creation was subjected to futility, not willingly, but because of Him who subjected it in hope; because the creation itself also will be delivered from the bondage of corruption into the glorious liberty of the children of God. For we know that the whole creation groans and labors with birth pangs together until now. Not only that, but we also who have the firstfruits of the Spirit, even we ourselves groan within ourselves, eagerly waiting for the adoption, the redemption of our body. (Romans 8:20-23)

Animal death came because of man’s fall into sin in the Garden of Eden. Now, all of

the material creation, including the animal kingdom, is groaning and travailing in this situation. There is something wrong with a world full of death, where blood is to be found in tooth and claw. In a world where animals hunt and kill each other for food, God still demonstrates His kindness by providing His smaller creatures with a “fighting chance.”

Flight for the flying fish is one of the hundreds of defense mechanisms God built into fish. This is the way these little fish could escape the largest predators in the ocean. **Coral-reef fish** are colored just like the coral they hang out with, and the **spotted ray** looks like sand and pebbles. God programmed the DNA of these fish with the coloring schemes that could blend in with their surroundings so that predators have a hard time spotting them.





Porcupine Fish

Sometimes various sea creatures will protect each other from harm. For example, the **clownfish** is protected by the sea

anemone's stinging tentacles. In return, the clownfish leaves a few scraps of food for the anemone. God has designed the clownfish such that he isn't bothered by the poisonous sting of the anemone.

The **boxer crab** and the **hermit crab** also depend on the sea anemone for their defense. The boxer crab will grab two anemones in his hands and wave them around to defend himself from attackers.

The **porcupine fish** lives up to its name. The Lord has equipped this fish with spines that will stick out as it blows itself up like a balloon. This fish's orange coloring also makes it look quite ominous to any would-be assailants.



Sea Cucumbers

Stingrays



The **surgeonfish** has a lancet-type blade that can slice up its predators. The blade is at first invisible until the fish whips it out like a switchblade knife. The **stingray** can grow to an astounding ten feet in width, and weigh 660 lbs (300 kg). This powerful creature defends itself with a stinger that can kill humans as well as other predators. The most poisonous fish of all is the **stonefish**. It lives mostly on the bottom of the ocean, usually hard to distinguish from coral and rock. Even its eyes are designed to look like algae growing on a rock. One sting from this fish can kill you. The **lion fish** are also equipped with spiny rays through which they can shoot venom into predators.

## How God Has His Animals Help Each Other

The **imperial shrimp** is so lazy and slow that he would rather catch a ride with the incredibly slow **sea cucumber** or a **sea slug** than to move on his own. In exchange for the ride, he will clean up parasites and algae growing on the cucumber or slug.

The Lord of Creation also teamed up the pistol shrimp with the **goby fish**. The **blind pistol shrimp** digs a burrow in the sea floor to locate food. While it digs, the goby plays bodyguard for the shrimp, threatening any would-be predators. In fact, the shrimp will keep one of his feelers on its friend. If a





Blue-streak Wrasse

to clean out the plaque and parasites in the fish's mouth and teeth, without fear that the larger fish would consume him. Even the aggressive **barracudas** submit to the cleaning wrasses. In turn, the wrasses get to eat the parasites they clean out. Only God could have ordered such a beautiful relationship in this awesome creation!

When animals help each other like this, it is called **symbiosis**. These complex arrangements could never have come about by chance evolutionary processes. Both of these animals must have been created on the same day with this mutual relationship in mind. Ungodly evolutionists still want

to believe that these creatures developed independently, millions of years apart. Of course, that is impossible if they were created for one another.

Only God could create these fish, and assign certain tasks to them as He did for the fish that swallowed Jonah.

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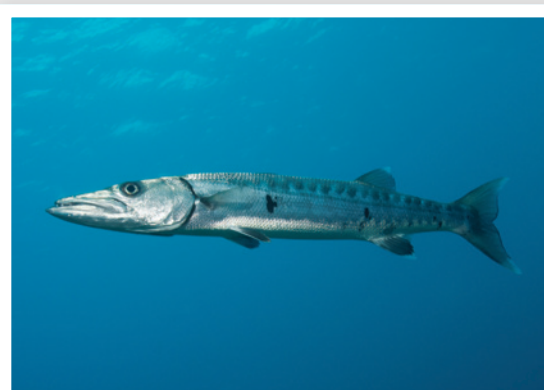
Now the LORD had prepared a great fish to swallow Jonah. And Jonah was in the belly of the fish three days and three nights. (Jonah 1:17)

---

predator approaches, the goby fish flicks its tail and both creatures rush down the hole together. The goby fish enjoys the advantage of hiding out in the hole dug by the shrimp, where it can lay its eggs out of sight. The ocean currents are such that the shrimp has to stay on the job digging out the hole again and again.

In certain locations on the coral reefs, **blue-streak wrasses** have set up cleaning stations for a wide variety of fish who want their bodies, gills, and teeth cleaned. Of course, everybody who comes through the cleaning station knows the unspoken rule. You don't eat the wrasses! The very carnivorous **Oriental sweetlips** fish swims

up to the cleaning station and opens his mouth wide for the wrasse to do his cleaning work. The wrasse swims into the big mouth



Barracuda



Mandarin Fish



Moorish Idol



## The Beautiful Underworld

He has made everything beautiful in its time. Also, He has put eternity in their hearts, except that no one can find out the work that God does from beginning to end. (Ecclesiastes 3:11)

If you ever go snorkeling in the ocean waters, you will discover an amazing world of beauty and color. Because God is Himself clothed with strength and beauty, He brings both of these together in His creation. The ocean contains the mighty whales and sharks, but there we also find incomparable beauty.

The **mandarin fish** is the most beautiful fish in the world. Look, but don't touch—this fish is also highly poisonous, and smelly. The

bright colors, the poison, and the smell make up a defense system from predators. This gorgeous fish is found in the Pacific ocean, from the coast of Japan down towards the coast of Australia. Then there are the ornate **Banggai cardinalfish**, the **symphysodon discus**, the **blueface angelfish**, and the



Archerfish

spectacular **moorish idol**. Many of these fish end up in aquariums where humans will sit and stare with amazement for hours at the beauty reflected in these creatures of our God.

## The Lord, Our Creator “Feeds All Flesh”

All animals are equipped to do one thing especially, and that is to eat. God has built into them the instinct to look for food. Eating is a full-time job for most animals. They are always on the lookout for food, whether it be vegetation or other smaller animals in the food chain. The **archerfish** uses its mouth like a squirt gun. He swims about, searching above him for insects in the air or hanging out on branches. Then, he lets loose a jet of water, and the fly or moth falls directly into his mouth. The **African tiger fish** is extremely coordinated, and it can be seen leaping out of the water to grab a bird with a mouth fully armed with sharp teeth.

The very long, saw-like snout of the **sawfish** is used to locate prey hiding under the sea floor. This high-tech instrument, designed and built by our Creator God, can detect slight movements, even the heartbeat of an animal. The fish picks up the electric fields emitted by its prey hiding as far away as 16 inches (40 cm). This sensory system provides a three-dimensional image for the sawfish.

There is never a bite too big to chew for the **black swallower**. God made this toothy, big-mouthed fish able to scarf down



Sawfish

a meal ten times his own size. Sometimes called the “Boa Constrictor of the Sea,” this 10-inch (25 cm) fish lives 10,000 feet under the ocean. How can he eat so much? Researchers think that the tissues of his stomach stretch so thin that you can pretty much see everything going on inside of it! If he overeats, his prey decomposes inside of his stomach and produces gases which float the black swallower to the surface of the sea.

Oh, give thanks to the LORD, for He is good!  
For His mercy endures forever. . .  
Who gives food to all flesh,  
For His mercy endures forever.  
(Psalm 136:1,25)



Pray

Give thanks to the Lord for His 3.5 trillion fish in the seas and oceans. Praise Him for the beauty, the mystery, and the careful order created in this massive ecosystem. Praise Him for your favorite fish. Praise Him for His goodness and wisdom that created defense systems and mobility systems (flight, crawling, and swimming). Praise Him for the amazing coordination He built into the goby fish and the blind shrimp. Praise Him for the blue streak wrasses who clean up so many fish.

Sing

*All Praise to God Who Reigns Above*

All praise to God, who reigns above,  
The God of all creation,  
The God of wonders, pow’r, and love,  
The God of our salvation!  
With healing balm my soul he fills,  
The God who every sorrow stills,  
To God all praise and glory!

What God’s almighty pow’r hath made  
His gracious mercy keepeth;  
By morning dawn or evening shade  
His watchful eye ne’er sleepeth;  
Within the kingdom of his might,  
Lo, all is just and all is right,  
To God all praise and glory!

I cried to him in time of need:  
Lord God, O, hear my calling!  
For death he gave me life indeed  
And kept my feet from falling.  
For this my thanks shall endless be;  
O thank him, thank our God, with me,  
To God all praise and glory!

The Lord forsaketh not his flock,  
His chosen generation;  
He is their refuge and their rock,  
Their peace and their salvation.  
As with a mother’s tender hand  
He leads his own, his chosen band,  
To God all praise and glory!

Ye who confess Christ’s holy name,  
To God give praise and glory!  
Ye who the Father’s power proclaim,  
To God give praise and glory!  
All idols underfoot be trod,  
The Lord is God! the Lord is God!  
To God all praise and glory!

Then come before his presence now  
And banish fear and sadness;  
To your Redeemer pay your vow  
And sing with joy and gladness:  
Though great distress my soul befell,  
The Lord, my God, did all things well,  
To God all praise and glory!

(If you do not know the hymn, you may listen to a version of the hymn on the Internet with supervision, and sing along with it.)

Watch

To watch the recommended videos for this chapter, go to [Generations.org/GodMadeAnimals](https://Generations.org/GodMadeAnimals) and find the videos for Chapter 9. Our editors have been careful to avoid films with references to evolution; however, we would still encourage parents or teachers to provide oversight for all Internet usage. These videos may not give God the glory for His amazing creative work, so the student and parent/teacher should respond to these insights with prayer and praise.