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Discovery

Scripture & Science for Kids



NEITHER JELLY NOR FISH

DAVE MILLER

Have you ever walked along the beach and seen a blob of jelly-like goop lying in the sand? One of your parents probably told you not to touch it, since you could be stung! Found in every ocean in the world, jellyfish are not really fish. They are recognized for their bell or dome-shaped top. Most jellyfish have tentacles that hang down from the dome and are covered with thousands of tiny poisonous, stinging cells. These cells explode when they brush against objects, firing small harpoons that inject poison into their victim.

Jellyfish (also called “jellies”) have no head, brain, heart, eyes, ears, or bones. They range in size from about one inch to seven feet in diameter, with the tentacles of some species reaching over 100 feet long. When large numbers of jellyfish drift together as a group, they are called a “swarm,” “bloom,” or “smack.” Jellyfish have a nerve net that consists of cells that detect light, odor, and other movement.

Jellyfish are a very important part of the marine food chain of the world’s oceans. God designed jellyfish to drift slowly with the ocean currents, rather than swimming like fish. Yet, jellyfish move in such a way that they create a current, forcing



Cassiopeia Jellyfish Also Called
“Upside Down Jellyfish”

their prey within reach of their tentacles. They are carnivorous, feeding on small fish and microscopic plankton. They use their four to eight oral arms to transport food to their mouths. Larger species of jellyfish can capture and devour large crustaceans and other marine organisms. In turn, spadefish, sunfish, sea turtles, and other marine organisms like to eat jellyfish.

Even some people like to eat jellyfish. The mushroom and cannonball jellyfish are considered a delicacy by humans. Lots of pickled or semi-dried mushroom jellyfish are eaten in China and other Asian countries—a multi-million dollar part of the seafood business. Jellyfish are also helpful to humans in other ways. Scientists in the field of biotechnology use jellyfish for genetic engineering experiments. Jellyfish are even being harvested for their collagen (a necessary protein in human tissue) to help treat ailments like arthritis. The jellyfish is yet another example of God’s marvelous design in nature.



Sea Nettle
Jellyfish



Sea Nettle
Jellyfish



Cuttlefish: THE CAMOUFLAGE KING

ERIC LYONS

Its eyes are like something from a Batman movie. Its feeding tentacles shoot out of its mouth like a birthday party blower. Its blood is bluish green, and its “ink” is black. (Cuttlefish, like octopuses and squid, can eject a cloud of black ink into the water, which can distract attackers long enough for them to escape.) Making the cuttlefish even stranger is the fact that it is not even a fish, but a mollusk. (Who named this animal, anyway?) The cuttlefish has an internal shell called a cuttlebone, so scientists put them into the shell (mollusk) group.



The most amazing feature of cuttlefish has to be their ability to blend in to their surroundings. Cuttlefish have been said to have “the world’s best camouflage skills.”

First, cuttlefish can change the texture of their skin to mimic the shape of certain rocks or corals. Second, these mollusks can move their entire bodies into a variety of positions. For example, while swimming next to large seaweed, a cuttlefish can mimic the grass’s motion by positioning and waving its eight arms in a similar way that the seaweed sways in the water. This makes it very difficult for both attackers and possible prey to know the precise location of a cuttlefish.

Finally, what must give other sea life more trouble than anything is the cuttlefish’s ability to change color—and to do it so quickly. A cuttlefish can change the color of its entire body in the blink of an eye. If this mollusk wants to change to red, it sends signals from its brain to its “pigment” (or color) sacs to change to red. Cuttlefish can hide from other sea life by changing to the color of sand or seaweed. It can also appear as a strobe light, blinking “on and off” very quickly.

Cuttlefish are remarkable creatures. But how do they know they have changed to a particular color if they can’t see themselves? Also, if, as scientists believe, this animal is colorblind, how does it always choose the color that is most helpful (like changing to the color of sand when on the ocean floor)? Scientists do not have a “natural” answer for these questions. Why? Because the cuttlefish was created by a **supernatural** Creator. Yes, God made this amazing creature. God alone is the cause of the cuttlefish.



GHOST SHARKS

ON THE LOOSE!

CALEB COLLEY

The Latin word *chimaera* means monster, so the name "chimaera" perfectly fits these strange-looking, scaleless ghost sharks. There are about 25 species of chimaera. Like sharks, all chimaera have a thick body and a cartilaginous (CAR-tuh-LÄ-juh-nus) skeleton. A cartilaginous skeleton is made of cartilage (firm, flexible tissue) instead of bone.

The chimaera is similar to a shark or ray in many ways, but is different from sharks because it lacks the sharp, replaceable teeth of sharks. Instead, the chimaera has rat-like teeth. Also, the chimaera's skin is different. It has only a single pair of gill slits, and its upper jaw is attached to its skull. Even though the chimaera is not a shark, we should still avoid it. Most chimaera have a venomous spine directly in front of their dorsal fin. This sharp spine can inflict painful wounds on humans or animal predators, which include larger fish and sharks. The largest chimaera reach a length of about six and a half feet.

Chimaera are called "deep-water fish" because they usually roam near ocean floors. Australian ghost sharks, for example, live in the southwestern Pacific Ocean, along the coasts of Australia and New Zealand. They migrate to inshore bays in the Spring for mating. The Australian ghost shark is easy to recognize because of the club-like projection on its snout. This lobed, trunk-like snout, which includes pores that sense movement and weak electrical fields, makes hunting for food much easier. Ghost sharks such as these can even detect buried shellfish.

The various types of chimaera are unusual, but remember that God has provided them with the perfect body structures for life in the ocean. It is impossible that the chimaera evolved.



Chimaera are called "deep-water-fish"



KYLE BUTT

Have you ever wondered how fish get clean? That seems like a silly idea, because fish live in water all the time. But did you know that fish can get "dirty"? Tiny parasites attach themselves to fish and steal the fishes' resources. Also, leftover food particles and dead skin can build up on fish and cause them to become unhealthy. There are no fish bathtubs or showers, and no fish soap or shampoo. So how do fish get clean?

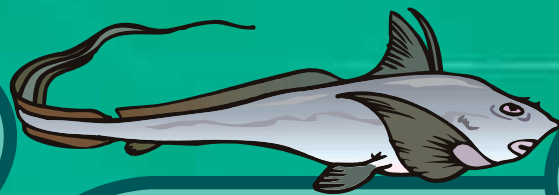
One way that many fish get clean is by visiting a fish "car wash." Specially designed fish called wrasse (pronounced like "grass" without a "g") open a cleaning station. The station is a certain spot on a coral reef where fish come to be cleaned. The cleaner wrasse have small mouths that they use to bite off parasites, dead skin, and leftover food particles from the fish who visit their stations. Cleaner wrasse are hard workers. A single wrasse can sometimes clean more than 2,000 fish in one day.

Many of the fish that the wrasse clean are predatory fish that normally eat small fish. But the predators do not eat the wrasse. Why not? It is because God designed cleaner wrasse to have a symbiotic relationship with other fish. When animals have a symbiotic relationship, that means they can help each other. The big fish need to be cleaned. The wrasse need to eat parasites, dead skin, and leftovers. When the wrasse clean another fish, each fish gets exactly what it needs. Scientists have discovered that areas with many cleaner wrasse have more kinds of healthy fish than those without many wrasse. These little cleaning fish are very important.

Studying the cleaner wrasse can help us understand that evolution cannot be true. How did the first cleaner wrasse learn to clean other fish? And how would the large, predatory fish know not to eat the cleaner wrasse? The only way to explain the behavior of the cleaner wrasse is to understand that God designed them to perform their unique job. The next time you go to a car wash, think about the cleaner wrasse, and the wonderful Creator Who designed them.



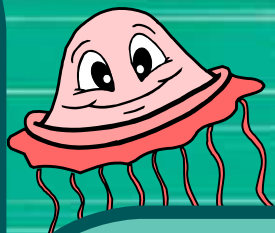
ACTIVITY PAGES



MATCHING

- _____ Mollusks that God designed with great camouflage skills
- _____ Fish with a special disc on the top of their heads that acts like a suction cup
- _____ Chemicals that ants release to guide others in their colonies to a food source
- _____ Fish that bite off parasites, dead skin, and leftover food particles from other fish
- _____ Can have tentacles that are 100 feet long
- _____ Jellyfish that drift together as a group

- | | |
|---------------|---------------|
| A. Jellyfish | D. Pheromones |
| B. Remoras | E. Wrasse |
| C. Cuttlefish | F. Swarm |



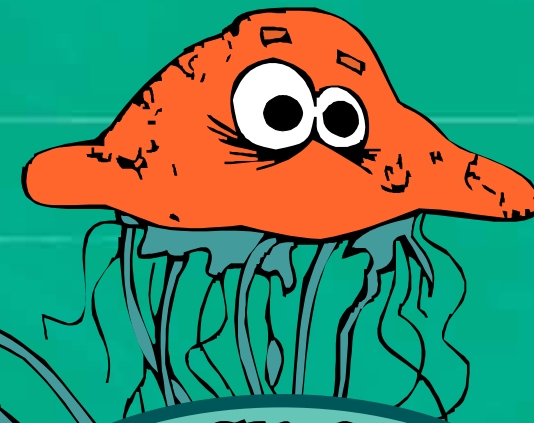
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 C A U J J L N Q C V O K B U X
 T I J S Y M B I O T I C U L U

SOLVE, FIND, AND CIRCLE

- Animals with a dome-shaped top. _____
- The Creator of all things. _____
- Means "monster." _____
- The "hobo" fish. _____
- An animal with bluish-green blood, black ink, and eight legs. _____
- The day of Creation on which God made fish. _____
- Another name for chimaera. _____
- The internal shell of a cuttlefish. _____
- Cleaner fish. _____
- A relationship that benefits each other. _____

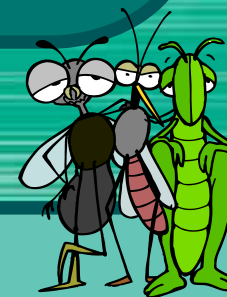
TRUE OR FALSE

- _____ A cuttlefish is a mollusk.
- _____ Jellyfish have a big brain.
- _____ Cartilage is as hard as bone.
- _____ Some fishermen use remoras to catch other fish.
- _____ Evolution explains perfectly the remora's amazing suction disc.
- _____ Wrasse can only clean one fish per day.
- _____ Symbiotic relationships are evidence of a Designer.
- _____ Many people in Asian countries eat jellyfish.



ON A SEPARATE SHEET OF PAPER

- List three ways that cuttlefish can disguise themselves.
- Define "symbiotic relationship" and give an example from nature.



Dear Digger Doug,

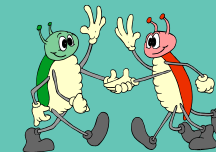
Can the different types of bugs understand what each other says?

—Jennifer, Universal City, TX

Dear Jennifer,

This is an excellent question. All animals communicate. Of course, insects don't talk to each other in the same way that you talk to other people. However, they use their senses to get information about the world around them, and use various signals to send messages to each other. For example, because some insects can't see well, they send vibrations through the ground or plants to warn each other of approaching danger. In the case of honeybees, a special dance notifies other bees of the distance to food.

By releasing chemicals called pheromones, ants guide others in their colonies to food sources, mark territory, and identify themselves. Ants also make an "alarm" by clicking their mandibles. You probably have heard crickets, katydids, grasshoppers, cicadas, and other insects chirping. Usually, these sounds attract females and repel rival males. We have learned that some different types of bugs can communicate with other types. For instance, some ants protect tiny bugs called aphids that produce a sweet substance the ants like to eat. Thankfully, God provided each animal with exactly what it needs to fill its role in the natural life cycle, which includes communication.





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Editor: Kyle Butt, M.A.
 Associate Editor: Eric Lyons, M.Min.
 Layout and Design: Rob Baker, M.Ed.

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THE FISH THAT STEALS A RIDE

KYLE BUTT

Many years ago, men called hobos travelled across the country by riding trains. The problem was hobos did not pay for tickets. They would wait until the train began moving, and then jump on. It was difficult to catch hobos, and they often "stole" rides for hundreds of miles. Did you know there is a fish in the ocean that acts like a hobo? It is called the remora.

Remoras can grow to be about three feet long. They have a special disc that grows on the top of their heads. This disc acts like a big suction cup. The remoras swim next to a large ocean animal like a

shark, whale, or sea turtle. Then they stick their heads onto the body of the larger animal and suction themselves onto it. Once they are attached,

they ride all over the ocean for free. When remoras want to detach themselves, they simply swim forward and cause their special disc to break the suction. If you have ever seen movies about sharks or whales and seen fish attached to them, those fish are remoras.

Remoras can attach to larger fish and turtles so well that some people use remoras to catch other fish. These fishermen tie a string to the tail of a remora. Then they turn the remora loose in the ocean. The remora finds a larger fish or turtle and hooks itself onto it. The fishermen then pull the string back to the boat, with the remora attached to the large fish.

When we study this amazing fish, we can see that there is no way it could have evolved. Evolution cannot explain the remora's amazing suction disc. Nor can evolution explain why other fish simply let remoras hitch a ride for free. The best explanation for remoras' unique traits is that God designed them to do exactly what they do. The next time you see a remora on TV hitching a free ride, think about its special suction disc. And think about the God Who designed it.



ANSWERS

TRUE OR FALSE: 1-T; 2-F; 3-F; 4-T; 5-F; 6-F; 7-T; 8-T.
 1. jellyfish; 2. God; 3. chimera; 4. remora; 5. cuttlefish; 6. five; 7. Ghost shark; 8. cuttlebone; 9. wrasse; 10. symbiotic.
 MATCHING: 1. C (Cuttlefish); 2. B (Remoras); 3. D (Pheromones); 4. E (Wrasse); 5. A (Jellyfish); 6. F (Swarm); 7. F (Swarm); 8. F (Swarm); 9. F (Swarm); 10. F (Swarm).
 FIND AND CIRCLE: 1. Jellyfish; 2. God; 3. Chimera; 4. Remora; 5. Cuttlefish; 6. Five; 7. Ghost shark; 8. Cuttlebone; 9. Wrasse; 10. Symbiotic.
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