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Why do golf balls have holes?

- 1 Golf balls are small white balls. They are half the size of a baseball or tennis ball. At first, golf balls were made of heavy leather that was stuffed with feathers. Today, a golf ball is made by winding a strip of rubber tightly around a core. Then it is covered with a hard, rubberlike material. This covering has tiny holes or indentations all over it. These indentations are called dimples.
- 2 One goal of golf is to hit the ball a long distance. The dimples in the golf ball help it fly straight and fast through the air when it is struck.
- 3 Two forces hold back a golf ball that is flying through the air. One force is gravity. Gravity pulls the ball toward the ground. The other force is drag. Drag slows the ball down as it flies through the air. Golf ball makers can't do much about gravity. They can do something to reduce the drag on the ball.
- 4 Drag increases when there is more turbulence behind the golf ball. The dimples on the ball create a narrower area of drag on the back of the golf ball. This helps the ball fly farther and straighter. A smooth ball would have a wider area of drag. This would slow down the golf ball.



SAFETY

Circle the correct answers. Write your answer to question 6.

1. A golf ball is hit _____.

- A toward the ground
- B in a straight line
- C a short distance
- D at another player

2. *Ground* can have the following meanings. Mark the meaning used in paragraph 3.

- A the solid surface of Earth
- B an area of special interest
- C reduced to small pieces
- D to prevent from flying

3. What happens when a golf ball flies through the air?

- A Gravity tries to bring the ball to the ground.
- B Drag makes the ball go faster.
- C Dimples slow down the ball.
- D Turbulence makes the ball go in a straight line.

4. Which word in paragraph 4 means "stirred up air"?


- A drag
- B area
- C dimples
- D turbulence

5. Which paragraph tells what was stuffed into the middle of early golf balls?

- A 1
- B 2
- C 3
- D 4

6. Think about different sports that you have seen played. Which sport would you like to learn to play? Tell what you know about the sport.

 **Details**

 **Multiple-Meaning Words**

 **Cause & Effect**

 **Context Clues**

 **Details**

Why do some fish give off light?

- 1 Scientists have discovered that many different sea creatures glow at night or in the dark. Jellyfish, starfish, squid, fish, and sharks are some of the creatures that give off their own light. These sea animals are different glowing colors. They may be green, orange, or red.
- 2 This glowing light is a chemical reaction. Chemicals in the animal's body combine to make it glow.
- 3 These sea creatures glow for different purposes. Some fish give off light to attract other animals. This is how they hunt for food. Other fish emit light to protect themselves. The light blinds their predators so the fish avoid capture. Some glowing fish escape their predators because their light helps them blend into their surroundings.
- 4 Red tides happen often during the summer in Southern California. A red tide is caused by red algae. The red algae attract tiny plankton. The plankton give off a blue glow when disturbed. The water turns turquoise when waves crash through the groups of plankton.



SAFETY

Circle the correct answers. Write your answer to question 6.

1. A glowing fish can escape by using its light to _____.
 - A attract other fish
 - B blind its predator
 - C find its way
 - D hunt for food
2. Which paragraph tells about tiny organisms that give off a blue light?
 - A 1
 - B 2
 - C 3
 - D 4
3. Which word in paragraph 3 means "to give off"?
 - A attract
 - B emit
 - C protect
 - D blend
4. What is the main idea of the article?
 - A Red tides happen in summer in Southern California.
 - B Many sea creatures can emit their own light.
 - C Some fish give off a light to attract prey.
 - D Other creatures glow to blend in with their surroundings.
5. You can decide from the article that many sea creatures give off light _____.
 - A deep in the ocean
 - B on the surface of the water
 - C in waves
 - D during the day

6. Think about some creatures on land that glow. Tell about one of these creatures. When does it glow?