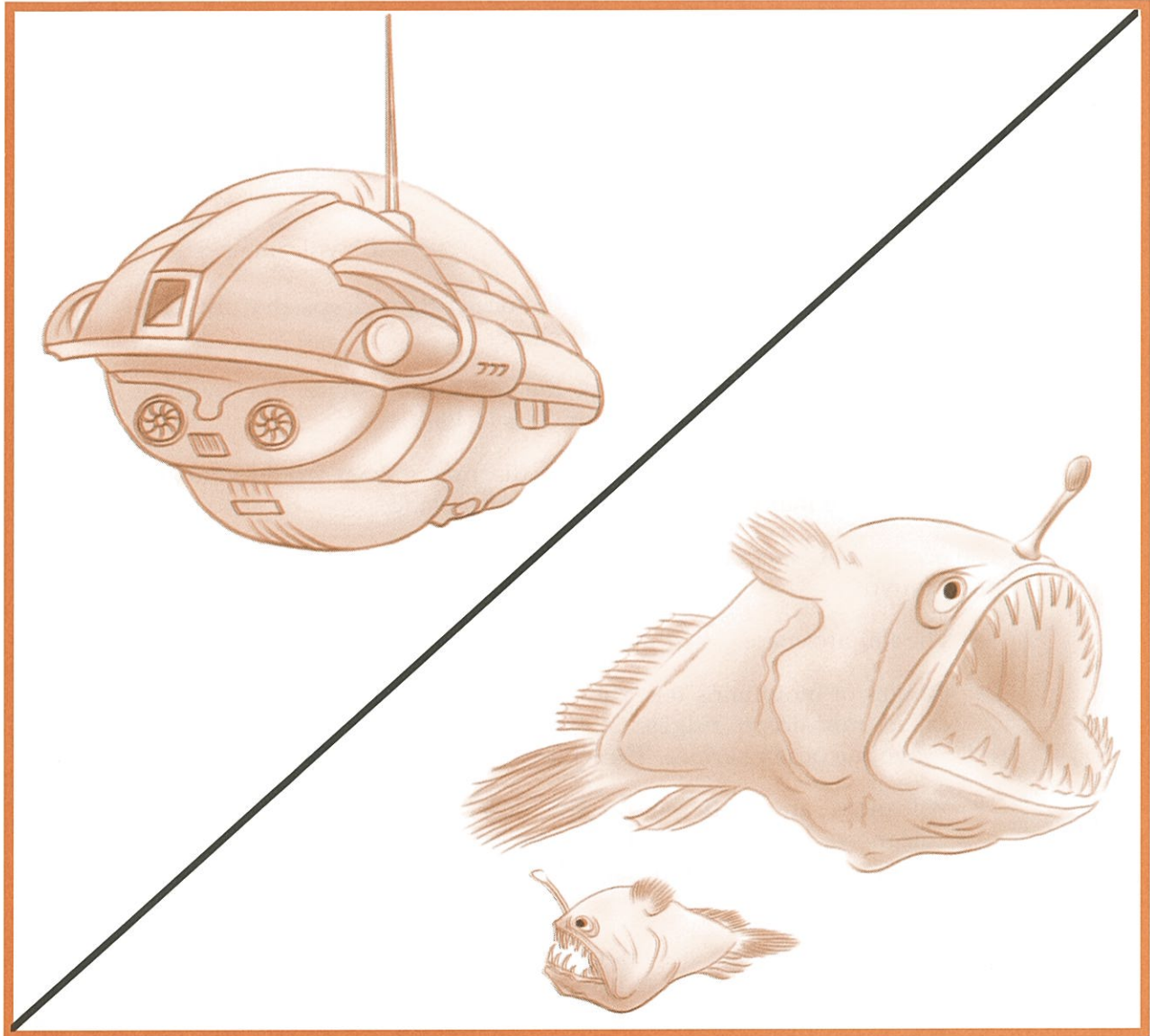


What does the ocean floor look like?



KEY TERMS

continental shelf: part of a continent that slopes gently away from the shoreline

continental slope: part of a continent between the continental shelf and the ocean floor

mid-ocean ridge: underwater mountain range

LESSON 5 | What does the ocean floor look like?

Most of the earth's water is found in our oceans. The oceans lie in huge basins. But the water spreads beyond the basins. It goes onto low parts of the continents. The part of a continent that is covered by the ocean is called the **continental shelf**. The continental shelf slopes gradually downward.

At the end of the continental shelf, the ocean floor drops sharply. This sharp drop is called the **continental slope**.

The basin begins at the bottom of the continental slope. The average depth of the deep-sea basin is 426 meters (1,400 feet).

If all the ocean water would suddenly disappear, what would you see? You would see many of the features found on land.

The ocean floor has flat areas. It also has high mountains, volcanoes, and deep canyons.

- The flat areas are called plains.
- Ranges of mountains that run through the middle of the ocean are called **mid-ocean ridges**. In some places, mid-ocean ridges rise above the ocean surface. They form islands.
- Volcanoes are scattered on the ocean floor. Some underwater volcanoes reach above the ocean surface. They form volcanic islands. The Hawaiian Islands are the peaks of underwater volcanoes.
- Submarine canyons are long valleys with steep sides. They are found along the continental shelf.
- The deepest parts of the ocean are called trenches. Most trenches are near chains of volcanic islands that are close to a continent.

THE OCEAN FLOOR

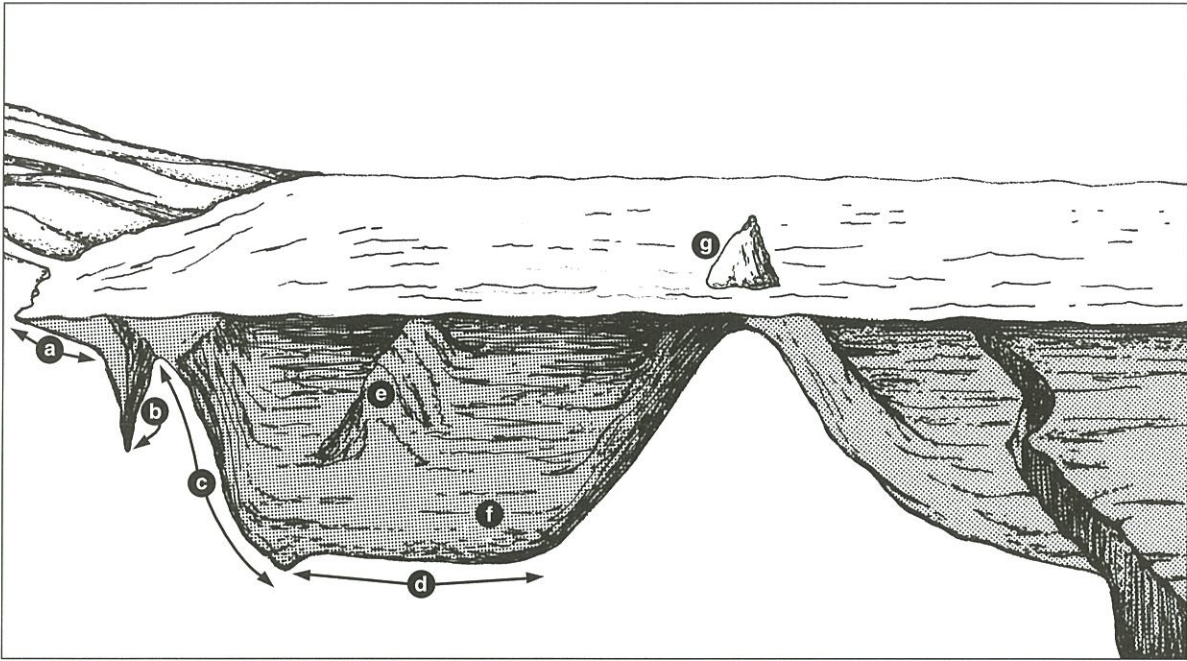


Figure A

Figure A shows features of the ocean floor. They are listed below. Identify each feature by writing the correct letter in the spaces provided.

- | | |
|----------------------------|---------------------------|
| 1. continental shelf _____ | 5. submarine canyon _____ |
| 2. continental slope _____ | 6. mid-ocean ridge _____ |
| 3. deep-sea basin _____ | 7. plain _____ |
| 4. volcanic mountain _____ | |

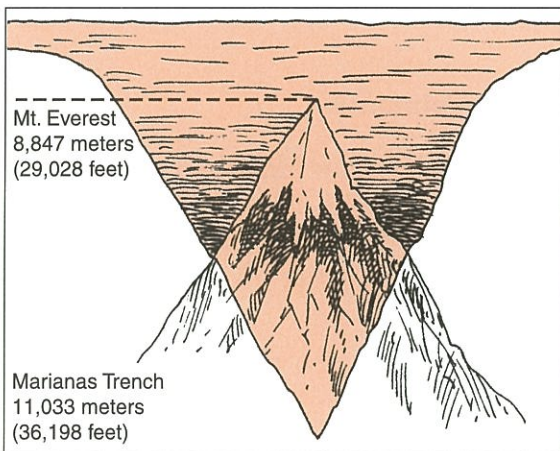


Figure B

Trenches are the deepest parts of our planet.

The deepest trench is the Marianas Trench in the Pacific. It reaches down 11,033 meters (36,198 feet).

Mount Everest is the earth's tallest mountain. The Marianas Trench is deeper than Mount Everest is high.

If Mount Everest were placed into the Marianas Trench, how many meters of water would be above its peak?

FILL IN THE BLANK

Complete each statement using a term or terms from the list below. Write your answers in the spaces provided.

continental shelf
trenches
sharply
mid-ocean ridges

submarine
continental slope
oceans

Marianas
basins
gradually

1. Most of the earth's water is found in the _____.
2. The oceans lie in huge _____.
3. The part of the continent that is under the ocean is called the _____.
4. The continental shelf slopes _____.
5. At the end of the continental slope, the ocean floor drops _____.
6. The deep-sea basin starts at the end of the _____.
7. Mountain ranges in the ocean are called _____.
8. Valleys in the continental shelf are called _____ canyons.
9. The deepest places along the ocean floor are _____.
10. The deepest trench in the world is the _____ Trench.

MATCHING

Match each term in Column A with its description in Column B. Write the correct letter in the space provided.

Column A	Column B
_____ 1. water planet	a) underwater mountain ranges
_____ 2. continental shelf	b) deepest part of the earth
_____ 3. plain	c) flat area
_____ 4. trench	d) low part of a continent covered by the ocean
_____ 5. mid-ocean ridges	e) earth

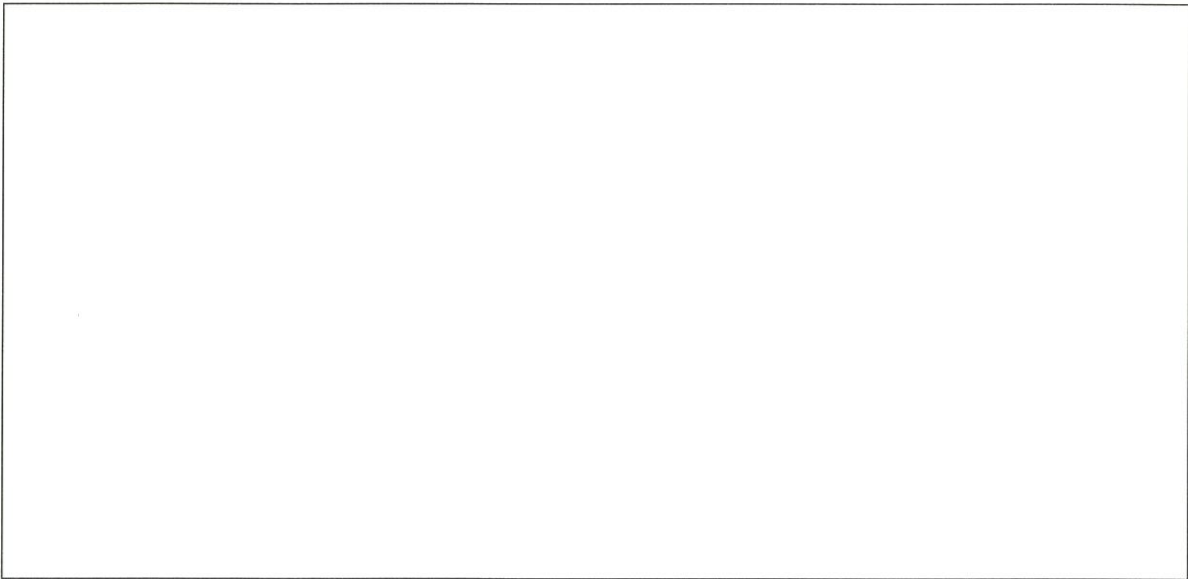
TRUE OR FALSE

In the space provided, write "true" if the sentence is true. Write "false" if the sentence is false.

- _____ 1. The earth is the only planet.
- _____ 2. Only our planet has a lot of water.
- _____ 3. The earth's water layer is called the atmosphere.
- _____ 4. The continental shelf has a gentle slant.
- _____ 5. The continental slope has a gentle slant.
- _____ 6. The deep-sea floor starts at the beginning of the continental shelf.
- _____ 7. A ridge is a high place on the ocean floor.
- _____ 8. A submarine canyon is a low place on the ocean floor.
- _____ 9. A submarine canyon is deeper than a trench.
- _____ 10. The ocean floor has some flat places.

REACHING OUT

In the space below, draw a model of the ocean floor that shows each of the following: continental shelf, continental slope, mid-ocean ridge, plains, trenches, submarine canyon, underwater volcano.



Offshore Oil



Can you imagine a structure taller than Chicago's Sears Tower, the tallest building in the world, rising from the ocean floor? Like a giant iceberg, only a small part of the structure is above the water. The rest is found underwater. These giant sea structures do exist. And even taller ones are planned. They are the products of a new geologic frontier—deep water oil exploration and recovery.

The uses of oil in modern society are constantly increasing. However, the sources of oil are decreasing. As a result, the search for new oil sources continues.

Most known oil reserves are found on land. However, it was discovered in the 1930s that there are vast supplies of oil found below the continental shelf. Some geologists believe there may be nearly as much oil under the shelf as there is on land.

Offshore drilling is oil drilling in shallow water, done close to shore. There are several important offshore drilling areas in the United States. For example, the Gulf of Mexico, off the shore of Louisiana. Unfortunately, most of the easy-to-recover offshore reserves have been used up. The oil companies are aware of the decreasing supply of oil. Since 1984, they have been searching for new sources of oil in the deeper waters of the ocean.

Recovering oil from such depths is no easy task. Shallow water drilling is done from permanent platforms attached to the ocean floor. Deep water "rigs" are much more complex; more complex to design and construct.

In general, the larger structures are not as stable. They must be able to withstand hurricane winds and crushing waves. Deep-sea ocean rigs are mounted over the water above the continental shelf. Some are on floating platforms. Others are on platforms resting on the continental shelf. Because of the risk and cost involved, the entire venture of deep water oil exploration and discovery can only be undertaken by companies who are able to risk billions of dollars.