

Name \_\_\_\_\_ Date \_\_\_\_\_

Grade 5 SOL 5.6 Review –Oceans

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### Standard 5.6

The student will investigate and understand characteristics of the ocean environment. Key concepts include

- geological characteristics (continental shelf, slope, rise);
- physical characteristics (depth, salinity, major currents);
- biological characteristics (ecosystems); and
- public policy decisions related to the ocean environment (assessment of marine organism populations, pollution prevention).

The concepts developed in this standard include the following:



- Oceans cover about 70% of the surface of the Earth.

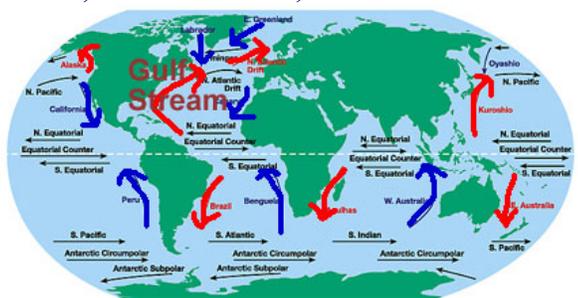
• Important features of the ocean floor near the continents are the continental shelf, the continental slope, and the continental rise. These areas are covered with thick layers of sediments (sand, mud, rocks).



- The depth of the ocean varies. Ocean trenches are very deep, and the continental shelf is relatively shallow.

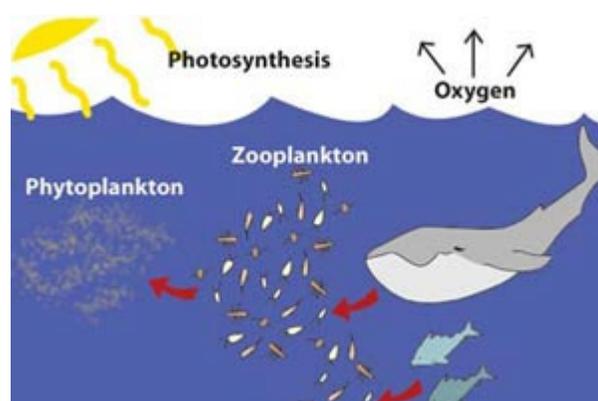
• Ocean water is a complex mixture of gases (air) and dissolved solids (salts, especially sodium chloride). Marine organisms are dependent on dissolved gases for survival. The salinity of ocean water varies in some places depending on rates of evaporation and runoff from nearby land.

- The basic motions of ocean water are the waves, ocean currents, and tides.



• Ocean currents, including the Gulf Stream, are caused by wind patterns and the differences in water densities (due to salinity and temperature differences). Ocean currents affect the mixing of ocean waters. This can affect plant and animal populations. Currents also affect navigation routes.

- As the **depth** of ocean water increases, the **temperature decreases**, the **pressure increases**, and the amount of **light decreases**. These factors influence the type of life forms that are present at a given depth.



- **Plant-like plankton (phytoplankton)** produce much of the Earth's **oxygen** and serve as the **base** of the ocean **ecosystem**. Plankton flourish in areas where nutrient rich water upwells from the deep. Phytoplankton are eaten by animal-like plankton, swimming organisms, and those things that live on the ocean bottom.

- Humans impact the ocean environment through their everyday activities. Responsible public policy decisions are part of maintaining a healthy ocean environment. These decisions include **improved monitoring** of marine populations, placing **bans on hunting** or harming certain marine mammals, **placing limits on catches** of stressed populations, and greater emphasis on **pollution prevention**.

### Match the columns

1. The amount of dissolved salts in ocean water: \_\_12\_\_ phytoplankton
2. Cause of ocean currents: \_\_1\_\_ salinity
3. Most common cause of surface waves: \_\_3\_\_ wind
4. Long, narrow crevices that form the deepest parts of the ocean floor. \_\_4\_\_ trenches
5. The Gulf Stream: \_\_5\_\_ a long distance surface current that brings warm parts of Europe
6. Tides are mainly the result of the gravitational pull of: \_\_6\_\_ the moon
7. The shallow and relatively flat part of the ocean floor where marine life flourishes: \_\_7\_\_ continental shelf
8. The Earth's deepest ocean: \_\_8\_\_ Pacific Ocean
9. The deepest spot known on Earth: \_\_9\_\_ Mariana Trench
10. The percent of the Earth covered by water: \_\_10\_\_ 70%
11. A scientist who studies the ocean is an: \_\_11\_\_ oceanographer
12. Plantlike organisms that float on or near the ocean's surface are called: \_\_12\_\_ phytoplankton

**Match the columns**

13. Ocean trenches are:

14. The continental shelf is:

15. The beach where you swim and play is part of the:

16. The salinity of ocean water depends on:

17. The makeup of ocean water:



18. Underwater mountain ranges:

19. The ocean floor near the continents (continental shelf, slope, and rise) is made of:

20. A device that uses sound to map the ocean floor:

21. Motions of the oceans:

22. Ocean water vary in density due to:

23. Producers of much of the Earth's oxygen:

24. As the depth of the ocean increases:

19 thick layers of sediment (sand, mud, rocks)

20 sonar

18 mid-ocean ridges

16 rates of evaporation and runoff from nearby land

15 continental shelf

24 water pressure increases and the amount of light decreases

13 very deep

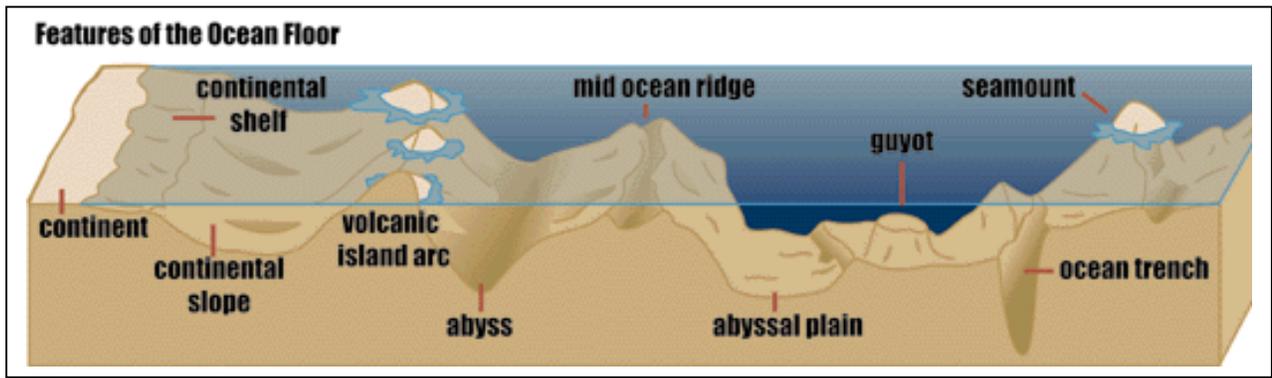
23 phytoplankton

22 salinity and temperature differences

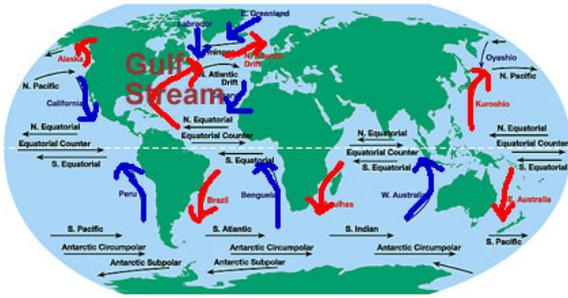
14 relatively shallow

17 a complex mixture of gases (air) and dissolved solids (salts, especially sodium chloride)

21 waves, currents and tides



1. Oceans cover about \_\_\_\_\_ of the Earth's surface.
  - a. \*70%
  - b. 50%
  - c. 80%
2. The shoreline, where the land meets the ocean, is part of the:
  - a. continental slope
  - b. \*continental shelf
  - c. abyssal plain
3. The continental shelf is:
  - a. the deepest part of the ocean
  - b. fairly deep
  - c. \*relatively shallow
4. \*True or False: The shallow water of the continental shelf is teeming with life.
5. The steep slope at the edge of the continental shelf is the:
  - a. ocean trench
  - b. \*continental slope
  - c. mid-ocean ridge
6. The floor of the continental shelf and slope is:
  - a. made of hard rock
  - b. \*covered with sand, mud and rock and thick sediment
  - c. covered with only sand
7. The deepest parts of the ocean are:
  - a. \*ocean trenches
  - b. continental shelves
  - c. mid-ocean ridges
8. Ocean trenches are deep \_\_\_\_\_.
  - a. \*a. deep canyons
  - b. high mountains
  - c. steep slopes
9. The wide, deep and flat mid-ocean bottom is the:
  - a. \*abyssal plain
  - b. ocean trench
  - c. continental shelf
10. Underwater mountain ranges are called:
  - a. abyssal plains
  - b. continental slopes
  - c. \*mid-ocean ridges
11. Ocean water is a mixture of: (name all)
  - a. \*gases (air)
  - b. sugars
  - c. \*salts, especially sodium chloride
12. The ocean's salinity (saltiness) varies, depending on: (choose all correct items)
  - a. \*runoff from nearby land
  - b. \*the amount of evaporation
  - c. the amount of salt used on food by local people.
13. \*True of False: Marine organisms are dependent on the dissolved gases in the ocean for survival.
14. Tides are mainly the result of the gravitational pull of the:
  - a. \*moon
  - b. sun
  - c. Earth



15. Ocean currents are caused by: (circle all that apply)
- \*wind patterns
  - \*differences in water density caused by differences in water temperatures and salinity
  - earthquakes
16. Oceans flow like rivers in well defined circular patterns called:
- \*currents
  - streams
  - seas
17. The variation in water density and wind patterns cause ocean currents. Colder water is likely to be (less / \*more) dense than warmer water. Water with (\*higher/lower) salinity is likely to be denser.
18. The Gulf Stream is one of the Earth's strongest currents. It moves north from the tropics through the Gulf of Mexico, past the east coast of the United States and up to northern Europe. As a result, Europe is:
- \*warmer than Canada at the same latitude.
  - colder than Canada at the same latitude.
19. The most important organisms of the ocean ecosystem are:
- \*phytoplankton
  - dolphins
  - whales
20. Phytoplankton are plantlike producers that get their energy:
- \*from the sun
  - by eating other organisms
21. \_\_\_\_ produce much of the Earth's oxygen.
- people
  - \*phytoplankton
22. All ocean life depends on \_\_\_\_\_ which form the base of the ocean food web.
- people
  - \*phytoplankton
  - fish
23. Most (90%) of marine organisms live in the:
- \*continental shelf
  - ocean trenches
  - abyssal zone
24. Waves are most commonly formed by:
- sun
  - \*wind
  - animals
  - salt
25. Almost all sea creatures are dependent upon:
- \*phytoplankton
  - whales
  - dolphins
  - humans
26. Fishing line discarded in the ocean can:
- be used as food
  - catch fish
  - \*cut and kill sea creatures
27. Salt in the ocean comes from:
- air
  - waves
  - creatures
  - \*the weathering of rocks and minerals
28. A \_\_\_\_ is a river-like movement of water within a larger body of water.
- reservoir
  - \*current
  - tidal pool

29. Which of the following always increases as the ocean depth increases?

- a. \*pressure
- b. temperature
- c. food

30. Which of the following decreases as ocean depth decreases?

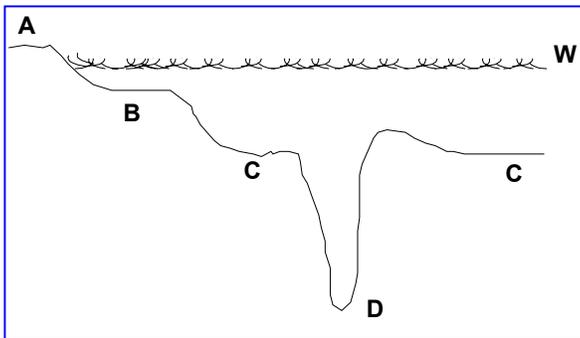
- a. pressure
- b. \*temperature

31. Which of these geological features is created by living organisms?

- a. continental slope
- b. mid-ocean ridge
- c. ocean trench
- d. \*coral reef

32. Coral reefs, salt marshes, and estuaries are all:

- a. fresh water habitats
- b. \*marine habitats
- c. neither



The diagram above shows the ocean floor. "B" indicates the:

- d. water level
- e. \*continental shelf
- f. ocean trench
- g. abyssal or deep ocean plains

33. "D" indicates the:

- a. mid ocean ridge
- b. continental shelf
- c. \*ocean trench
- d. abyssal or deep-ocean plains

34. Which is NOT a common cause of major ocean currents?

- a. winds
- b. \*volcanoes
- c. different water densities

35. Phytoplankton are:

- a. fish-like plankton
- b. \*plant-like plankton that get their energy from the sun

36. The term "marine" in marine habitat, refers to:

- a. \*salt water habitats
- b. fresh water habitats

37. In the ocean, as depth increases: (choose all that apply)

- a. \*temperature decreases
- b. \*pressure increases
- c. \*the amount of light decreases

38. Ocean water is a mixture of:

- a. \*air and salts (especially sodium chloride)
- b. soil and sugar

39. The salinity of the ocean depends on: (choose all that apply)

- a. \*evaporation
- b. \*runoff from the land
- c. the type of fish living in the area

40. Plant-like plankton or phytoplankton: (choose all that apply)

- a. \*produce much of the Earth's oxygen
- b. \*serve as the base of the ocean ecosystem
- c. \*flourish in areas where nutrient rich water upwells from the deep
- d. \*are eaten by animal-like plankton, swimming organisms and those things that live on the ocean bottom
- e. live primarily in the deepest parts of the ocean

41. Which of the following commonly has a negative impact the ocean environment?  
(circle all)
- a. \*discarded plastic can holders
  - b. salinity
  - c. estuaries
  - d. \*old discarded fishing nets
  - e. \*chemical runoff
  - f. currents
  - g. rivers
  - h. streams
  - i. marine biologists

42. People can positively impact the environment by:
- a. \*improved monitoring of marine populations
  - b. \*bans on hunting or harming certain marine mammals
  - c. \*limits on catches of stressed populations
  - d. \*greater emphasis on pollution prevention
43. These forms of pollution can greatly affect marine life.
- a. \*insecticide and herbicide runoff
  - b. \*garbage dumped at sea
  - c. \*untreated sewage from cities
  - d. \*excess farm and lawn fertilizer
  - e. \*acid rain