

## Handout 3 (green) Oceanography

Name \_\_\_\_\_ Period \_\_\_\_\_

### Ocean Currents and Ocean Waves

#### Standard 4 Objective 3 Indicator d

## Chapter 21: Section 1: Directed Reading Pages 519-524

### Section: Ocean Currents (page 519)

1. A horizontal movement of water in a well-defined pattern is called a \_\_\_\_\_.
2. What are the two major categories of ocean currents?

### FACTORS THAT AFFECT SURFACE CURRENTS (page 519)

- \_\_\_\_\_ 3. Currents that are driven by winds and move horizontally on or near the ocean's surface are called  
a. air currents. b. high-pressure areas. c. surface currents. d. low-pressure areas
- \_\_\_\_\_ 4. All surface currents are affected by  
a. glaciers. b. ocean pollution. c. winds. d. the equator.
5. How does wind make water on the ocean's surface move?
6. Wind belts located just north and south of the equator are called \_\_\_\_\_.
7. In the Northern Hemisphere, trade winds blow from the \_\_\_\_\_.
8. In both hemispheres, trade winds push currents \_\_\_\_\_ across the tropical latitudes of all three major oceans.
9. In the Northern Hemisphere, Westerlies blow from the \_\_\_\_\_.
10. Why does a surface current get deflected and divided when it flows against a continent?
11. The curving of the path of oceans and winds due to Earth's rotation is called the \_\_\_\_\_.

### MAJOR SURFACE CURRENTS (page 521)

12. A current that is uninterrupted by any continents and crosses all three major oceans is the \_\_\_\_\_.
13. The Gulf Stream, the North Atlantic Current, the Canary Current, and the North Equatorial Current form the \_\_\_\_\_.
14. Name two things you would find floating on the surface of the Sargasso Sea.  
\_\_\_\_\_ and \_\_\_\_\_.
15. The pattern of currents in the North Pacific is similar to that in the \_\_\_\_\_.

### DEEP CURRENTS (page 523)

16. A stream like movement of ocean water far below the surface is called a \_\_\_\_\_.
17. What causes deep currents to form?
18. Two factors that determine the density of water are temperature and \_\_\_\_\_.
19. Where is the world's densest and coldest ocean water?
20. A strong current caused by an underwater landslide is called a \_\_\_\_\_.
21. Why does a turbidity current move beneath the clear water that surrounds it?

## Chapter 21: Section 2: Directed Reading Pages 525-530

### Section: Ocean Waves (page 525)

- |                      |  |
|----------------------|--|
| _____ 1. wave period | a. a periodic disturbance in a solid, liquid, or gas as energy is transmitted through it |
| _____ 2. crest       | b. the lowest point between two crests of a wave   |
| _____ 3. wave        | c. the highest point of a wave   |
| _____ 4. trough      | d. the time required for two consecutive wave crests to pass a given point               |

### WAVE ENERGY (page 525)

5. Moving air caused by the uneven heating of Earth's atmosphere is called \_\_\_\_\_.
6. What causes small waves or ripples to form on the ocean?
7. What causes a wave to become larger?
8. Explain why larger waves tend to grow larger and smaller waves die out.
9. Where does a water particle in a wave end up at the end of the wave period?
10. What is the diameter of the circle traced by a water particle on the ocean surface as a wave passes a given point?
11. What three factors determine the size of a wave?
12. The distance that the wind blows across open water to generate waves is called \_\_\_\_\_.
13. What kind of wind produces very large waves?
14. What kind of wind produces choppy water with waves of various heights and lengths?

### WAVES AND THE COASTLINE (page 528)

15. A foamy mass of water that washes onto the coastline is called a(n) \_\_\_\_\_.
16. What effect do breakers have on ocean sediments?
17. The process by which ocean waves bend toward the coastline as they come near shallow water is called \_\_\_\_\_.
18. What causes wave refraction?
19. A current that forms when waves approach the beach at an angle is called a(n) \_\_\_\_\_.
20. Longshore currents flow \_\_\_\_\_ to the shore.
21. Explain how a sandbar forms

### TSUNAMIS (page 530)

- \_\_\_\_\_ 22. Why is it incorrect to call a tsunami a tidal wave?
  - a. because a tsunami is caused by earthquakes on land
  - b. because a tsunami is not caused by tides
  - c. because a tsunami is not a wave
  - d. because a tsunami is not destructive