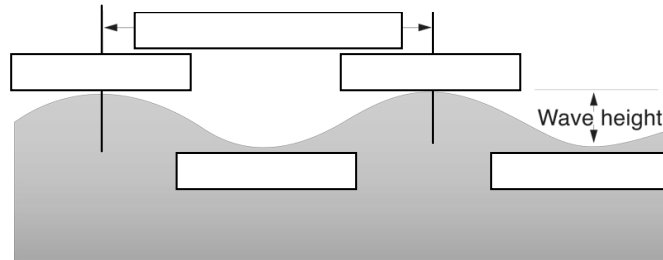


1. Ordinary ocean waves (not tsunamis) are created by \_\_\_\_\_ blowing over the surface of the water. When waves strike coastlines, wind energy is \_\_\_\_\_ to the rocks and sediments on beaches. This energy can increase significantly during a storm.
2. Height of water waves determined by \_\_\_\_\_, the length of \_\_\_\_\_ that wind blows, and the \_\_\_\_\_ the wind blows over the water. (Larger/Smaller) waves are generated where high winds blow over a long expanse of open water for an extended period of time.
3. Label the parts of the wave below in the boxes provided (5pts).



4. Waves break along the shore as \_\_\_\_\_, spending most of their energy moving sand along the beach.
5. Movement of water in waves is in a nearly circular path called an \_\_\_\_\_. Orbital motion in waves decreases with depth until it is essentially gone at a depth of \_\_\_\_\_ the wavelength.
6. As water shallows, orbital motion will eventually impact the sea bottom, causing waves to pile up and topple over, forming \_\_\_\_\_ in the surf zone.
7. Waves hitting the shoreline at an angle will bend and change direction to become more nearly parallel to the shoreline in a process called wave \_\_\_\_\_.
8. Refracted waves still hit the coastline at a slight angle, pushing water and sediments parallel to the coastline in the form of a \_\_\_\_\_ current.
9. Narrow currents that flow straight out to sea through the surf zone are called \_\_\_\_\_ currents.
10. A \_\_\_\_\_ is a strip of sediment (usually sand or gravel) from the low-water line inland to a cliff or zone of permanent vegetation.
11. The steepest part of a beach, where water sloshes as waves are breaking, is called the beach \_\_\_\_\_.
12. Above and landward of the beach face is a flat or gently inland-sloping platform called the \_\_\_\_\_.
13. Longshore \_\_\_\_\_ is movement of sediment parallel to shoreline when waves strike it at an angle.
14. Longshore drift deposits:
  - a. \_\_\_\_\_ build out into the open water off a point of land.
  - b. \_\_\_\_\_ bars are ridges of sediments that cut bays off from the ocean.
  - c. A \_\_\_\_\_ is a bar of sediment connecting a former island (generally bedrock) to the shore.

15. Human engineered structures used to interrupt the flow of sand along a beach:
- a. \_\_\_\_\_ are rock walls designed to prevent the entrance of a harbor from filling with sand.
  - b. \_\_\_\_\_ are short walls perpendicular to shore built to trap sand and widen a beach.
  - c. \_\_\_\_\_ are offshore structures, typically parallel to the shoreline, built to absorb the force of large breakers and provide quiet water near shore.

16. What are the four main sources for beach sand?

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_

17. \_\_\_\_\_ coasts produce sea cliffs, which erode inland over time.

18. \_\_\_\_\_ coasts produce gentle sloping coastlines where sand is added.

19. Name a place in the United States where you would expect to find the two different types of coastlines:

- a. Depositional coasts \_\_\_\_\_
- b. Erosional coasts \_\_\_\_\_

20. \_\_\_\_\_ islands, ridges of sand that parallel the shore, are common on depositional coasts.

21. Define the following in your own words:

- a. Drowned coast –
- b. Estuary –
- c. Fjord –

22. Why are drowned coasts, estuaries, and fjords increasing (5pts)?

23. What causes an emergent coast (5pts)?

24. If sea level is actually rising, how can both erosional and depositional coasts be found around the world (5pts)?

25. Explain the influence of waves and wind on the character of beach sand (i.e. sorting, roundness, size differences) (5pts).

26. Why would beach dimensions change with season (5pts)?