

6. The distance of one wave to the next is known as its:

- a) trough
- b) crest
- c) wave length
- d) wave height

7. A falling wave is known as a/an:

- a) breaker
- b) crest
- c) crasher
- d) trough

8. Olympic National Park in Washington offers excellent examples of this geologic feature:

- a) sand bars
- b) sea caves
- c) sea stacks
- d) spits

9. These depositional features are formed just offshore of the mainland:

- a) spits
- b) hooks
- c) barrier islands
- d) breakers

10. Cape Cod, Massachusetts is an excellent example of a/an:

- a) eroded beach terrace
- b) hook
- c) barrier island
- d) eroded beach berm

Answers

- 1. B
- 2. B
- 3. D
- 4. a) D
- 5. B
- 6. C
- 7. A
- 8. C
- 9. C
- 10. B

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Waves, Coastlines & Beaches

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Glossary

Wave Base - The depth (equal to half the wavelength) at which the bottom begins to interfere with the motions of the water particles beneath a shoaling wave. At wave base, deep water waves become shallow water waves.

Crest - The top of a wave.

Trough - The bottom of a wave.

Breaker - When a wave topples as it enters shallow water.

Berm - The sandy terrace shoreward of high tide line on the beach.

Sea Cliff - A coastal cliff whose base has been undermined by waves.

Spit - An elongated ridge of sand or gravel projecting from the mainland and ending in open water.

Hook - A sand formation formed into a curve by long shore currents.

Barrier Island - An offshore sand bar island extending above sea level.

Sea Stacks - Pillars of more resistant rock left as wave action erodes a rocky shoreline.

Sea Caves - Caves formed by waves that pound against a rocky coast and loosen the rocks.

Suggested Teaching Activities

1. Discuss with your students a visit to their favorite beach. Have the students describe what they have seen at the coastline.

Answers may include waves, beaches, sand or gravel bars, etc. If the students have travelled to an ocean beach or to an inland beach have them compare the features that they might encounter.

2. If samples are available bring in some beach sand or gravel. Put some under a microscope to observe individual sand grains. Describe them. Where did this sand come from? What is sand?

3. Using a diagram of a beach or coastline show the various geological features associated including:

- a) Offshore
- b) Shore or Beach
- c) Back Shore
- d) Fore Shore
- e) Sea Cliff
- f) Berms
- g) Wave-cut Terrace
- h) Wave-built terrace

4. Discuss the differences at a shore or beach in the SUMMER and the WINTER. What differences might you expect to find at different times of the year?

5. Discuss erosional features associated with beaches and coastlines such as sea caves, wave-cut terraces, sea arches and wave-cut cliffs. Then discuss the DEPOSITIONAL

features such as beaches, sand bars, spits, hooks and wave-built terraces.

Quiz

1. Columns of rock found offshore and formed by erosion of the coastline are called: a) sea cliffs b) sea stacks c) wave cut cliffs d) wave cut terraces.
2. An example of an EROSIONAL feature associated with a coastline is a/an: a) spit b) sea arch c) beach d) sea cave
3. An example of a DEPOSITIONAL feature associated with a coastline is: a) wave cut terrace b) sea stack c) wave cut cliff d) hook
4. Indicate which of the following coastline features are EROSIONAL (E) or DEPOSITIONAL (D)
 - a) Barrier Island
 - b) Sand Bar
 - c) Wave-cut terrace
 - d) Berm
 - e) Sea arch
 - f) Trough
 - g) Sea cliff
 - h) Wave-built terrace
5. Where do most waves originate?
 - a) in the atmosphere
 - b) from the friction of wind over open water
 - c) from small earthquakes
 - d) from meteors crashing into the oceans