**Ch. 5 L.2 Incomplete Notes:** **5-3.4** Explain how waves, currents, tides, and storms affect the geologic features of the ocean shore zone (including beaches, barrier islands, estuaries, and inlets). **5-3.5** Compare the movement of water by waves, currents, and tides.

**Vocabulary**

1. **barrier islands:** constantly \_\_\_\_\_\_\_\_\_ islands with sandy beaches just off the mainland. These form a barrier that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the mainland from strong waves.

2. **shoreline**: also called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_; the area where the land meets the ocean.

3. **beach**: a type of shoreline made of \_\_\_\_\_\_\_\_\_\_\_

4. **estuary:** the area where a \_\_\_\_\_\_\_\_\_\_\_\_ meets the ocean. Estuaries have a \_\_\_\_\_\_ of fresh and salt water.

5. **inlets**: \_\_\_\_\_\_\_\_\_\_\_-filled spaces between the barrier islands.

6. **waves**: the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ movement of water.

7. **currents**: flowing \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of water that move continually through the ocean in a certain direction.

8. **tides**: the regular rise and fall of waters in oceans and seas caused by the pull of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ gravity on Earth.

**Notes**
1. The ocean shore zone is where the ocean meets the \_\_\_\_\_\_\_\_\_. This area is made up of beaches, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ islands, estuaries, and inlets, and is affected by waves, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, tides, and storms.

2. Shorelines can be rocky or made of \_\_\_\_\_\_\_\_\_\_\_\_ (beaches). Wind and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ make constant change as they wear away the land or deposit sand. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ currents can move sand from one area to another. Tides can bring in sand, shells, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Storm waves can remove beach sand.

3. Barrier islands occur naturally and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the mainland from strong waves. Currents and waves cause \_\_\_\_\_\_\_\_\_\_\_\_ to be moved, constantly changing the \_\_\_\_\_\_\_\_\_\_\_\_\_ of the barrier islands.

4. Since \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are areas where rivers flow into the ocean, they have a mix of salt and fresh water. Tides bring in sediments and sea life that feed and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the many plants and animals that live and grow in the estuary.

5. The amount of water in an inlet is constantly changing with the \_\_\_\_\_\_\_\_. The \_\_\_\_\_\_\_\_\_ of an inlet opening changes with ocean currents and storms.

6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and other large storms can cause massive construction or destruction of the ocean shore zone due to their high waves, storm surges, and heavy \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

7. Label the crest (high part), 

the trough (low part) and the breaker in this diagram of a wave.

As waves reach the shore, they change \_\_\_\_\_\_\_\_\_\_\_\_. Wind causes most waves, although \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (giant sea waves) are caused by underwater \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, volcanic eruptions or landslides.

8. Currents are like rivers in the ocean. Some flow on the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ and some flow deep in the ocean. Wind and Earth’s rotation cause surface currents to flow along \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ paths. Currents move cold and warm water around the Earth. The Earth’s rotation moves warm surface currents from the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to higher latitudes and also moves cold surface currents from the poles toward the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

9. There are two \_\_\_\_\_\_\_\_\_\_\_\_ tides (when the water level at the shore is at its highest point) and two low tides (when the water level at the shore is at its lowest point) each day, caused by the Moon’s \_\_\_\_\_\_\_\_\_\_\_\_ pulling on Earth. The part of the ocean facing the Moon bulges outward.

**ANSWER KEY**

**Ch. 5 L.2 Incomplete Notes:** **5-3.4** Explain how waves, currents, tides, and storms affect the geologic features of the ocean shore zone (including beaches, barrier islands, estuaries, and inlets). **5-3.5** Compare the movement of water by waves, currents, and tides.

**Vocabulary**

1. **barrier islands:** constantly changing islands with sandy beaches just off the mainland. These form a barrier that protect the mainland from strong waves.

2. **shoreline**: also called the coast; the area where the land meets the ocean.

3. **beach**: a type of shoreline made of sand

4. **estuary:** the area where a river meets the ocean. Estuaries have a mix of fresh and salt water.

5. **inlets**: water-filled spaces between the barrier islands.

6. **waves**: the repeated movement of water.

7. **currents**: flowing streams of water that move continually through the ocean in a certain direction.

8. **tides**: the regular rise and fall of waters in oceans and seas caused by the pull of the Moon’s gravity on Earth.

**Notes**
1. The ocean shore zone is where the ocean meets the land. This area is made up of beaches, barrier islands, estuaries, and inlets, and is affected by waves, currents, tides, and storms.

2. Shorelines can be rocky or made of sand (beaches). Wind and water make constant change as they wear away the land or deposit sand. Longshore currents can move sand from one area to another. Tides can bring in sand, shells, and sediments. Storm waves can remove beach sand.

3. Barrier islands occur naturally and protect the mainland from strong waves. Currents and waves cause sand to be moved, constantly changing the shape of the barrier islands.

4. Since estuaries are areas where rivers flow into the ocean, they have a mix of salt and freshwater. Tides bring in sediments and sea life that feed and nourish the many plants and animals that live and grow in the estuary.

5. The amount of water in an inlet is constantly changing with the tide. The shape of an inlet opening changes with ocean currents and storms.

6. Hurricanes and other large storms can cause massive construction or destruction of the ocean shore zone due to their high waves, storm surges, and heavy winds.

7. Label the crest (high part), 

the trough (low part) and the breaker in this diagram of a wave.

As waves reach the shore, they change shape. Wind causes most waves, although tsunamis (giant sea waves) are caused by underwater earthquakes, volcanic eruptions or landslides.

8. Currents are like rivers in the ocean. Some flow on the surface and some flow deep in the ocean. Wind and Earth’s rotation cause surface currents to flow along curved paths. Currents move cold and warm water around the Earth. The Earth’s rotation moves warm surface currents from the tropics to higher latitudes and also moves cold surface currents from the poles toward the equator.

9. There are two high tides (when the water level at the shore is at its highest point) and two low tides (when the water level at the shore is at its lowest point) each day, caused by the Moon’s gravity pulling on Earth. The part of the ocean facing the Moon bulges outward.