

# **EARTH SCIENCE** Lesson Plan

## Quarter 2, Week 10, Day 1



### **Outcomes for Today**

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Standard Focus:

#### **PREPARE**

##### **1. Background knowledge necessary for today's reading.**

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Beaches are created by the actions of waves, tides, and currents. The moving water transports sediments. Competency refers to the largest size particle that can be carried by a current. The maximum amount of material a current can carry is its capacity. The constant moving water erodes landforms and transports the sediments and materials to other locations. The composition of beaches depends on the strength of currents and the size of waves, as well as, the transport distance.

##### **2. Vocabulary Word Wall.**

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Introduce 3-5 important words from today's reading

**wave refraction      headlands beach estuary**

- Show, say, explain, expand, explode or buzz about the word briefly
- Show, say, define the word quickly and add to the word wall.

#### **READ**

##### **3. Review the vocabulary and concepts previously covered in this chapter.**

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##### **4. Read directions for investigation/activity.**

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##### **5. Read text.**

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Ch. 16.1, pp. 412 - 417

## RESPOND

### 6. Fix the facts. Clarify what's important.

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Discuss the reading and add 3-5 events/concepts to the billboard

Students might mention:

- Wave crests bend towards headlands causing severe erosion because of the concentrated wave energy.
- The composition of beach material depends on the source of the material.
- The water in estuaries is a mixture of saltwater and freshwater.

### 7. Post information on the billboard. Add new information to ongoing projects on the wall.

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## EXPLORE

### 8. Explore today's investigation with inquiry activities.

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### 9. Explore today's simulation with inquiry activities.

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### 10. Collect data and post.

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**One possible activity:** Beach Erosion Investigation

**Procedure:** Students investigate the effects of wave action on beaches

**Discussion:** Discuss the results of erosion on rock formations

**Key question:** What other factors might affect beach erosion?

**Source:** <http://www.leeric.lsu.edu/educat/lesson1.htm>

## EXTEND

### 11. Prompt every student to write a short product tied to today's reading.

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### 12. Close with a short summary.

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Extend the reading to the students' lives or to the world

# **EARTH SCIENCE** Lesson Plan

Quarter 2, Week 10, Day 2



## **Outcomes for Today**

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Standard Focus:

### **PREPARE**

#### **1. Background knowledge necessary for today's reading.**

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In many regions beaches undergo annual cycles because of the seasons. Winter storms produce stronger winds and more powerful surf which erode beaches and deposit the materials on offshore sandbars. During the summers, lighter, finer materials are moved onshore by longshore transports.

#### **2. Vocabulary Word Wall.**

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Introduce 3-5 important words from today's reading

**barrier islands    spit    lagoons    longshore bar    longshore current**

- Show, say, explain, expand, explode or buzz about the word briefly
- Show, say, define the word quickly and add to the word wall.

### **READ**

#### **3. Review the vocabulary and concepts previously covered in this chapter.**

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#### **4. Read directions for investigation/activity.**

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#### **5. Read text.**

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Ch. 16.1, pp. 416 - 421

## RESPOND

### 6. Fix the facts. Clarify what's important.

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Discuss the reading and add 3-5 events/concepts to the billboard

Students might mention:

- Longshore currents deposit suspended sediments as they move along the coastline.
- Ripcurrents can be hazardous.
- Protective structures like seawalls, jettys, and breakwaters are built to prevent beach erosion and protect ocean property.

### 7. Post information on the billboard. Add new information to ongoing projects on the wall.

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## EXPLORE

### 8. Explore today's investigation with inquiry activities.

---

### 9. Explore today's simulation with inquiry activities.

---

### 10. Collect data and post.

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**One possible activity:** Gray Whales on the Move

**Procedure:** Students plot data to track whale migration

**Discussion:** Discuss the migratory habits of whale along the Pacific coast

**Key question:** What behaviors/habits made it easy to catch gray whales?

**Source:**

<http://www.pbs.org/kqed/oceanadventures/educators/pdf/OceanAdv-OnTheMove.pdf>

## EXTEND

### 11. Prompt every student to write a short product tied to today's reading.

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### 12. Close with a short summary.

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Extend the reading to the students' lives or to the world.

# **EARTH SCIENCE** Lesson Plan

Quarter 2, Week 10, Day 3



## **Outcomes for Today**

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Standard Focus:

### **PREPARE**

#### **1. Background knowledge necessary for today's reading.**

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Marine habitats are classified based on water depth and location. Each type of marine environment has a different community of organisms. Most marine organisms are found within the top layer of the ocean where sunlight penetrates. Few organisms reside below 200 meters except for marine organisms on their way to mating or feeding grounds.

#### **2. Vocabulary Word Wall.**

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Introduce 3-5 important words from today's reading

**continental margins**                      **continental shelf**                      **continental slopes**  
**turbidity currents**                      **continental rise**

- Show, say, explain, expand, explode or buzz about the word briefly
- Show, say, define the word quickly and add to the word wall.

### **READ**

#### **3. Review the vocabulary and concepts previously covered in this chapter.**

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#### **4. Read directions for investigation/activity.**

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#### **5. Read text.**

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Ch. 16.2, pp. 422 - 425

## RESPOND

### 6. Fix the facts. Clarify what's important.

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Discuss the reading and add 3-5 events/concepts to the billboard

Students might mention:

- During the last ice age most of the world's present day continental shelves were likely above sea level.
- The distance the continental shelf extends from the coast line varies. The average width is 60 km.
- Undersea canyons are formed by rapidly flowing currents carrying heavy loads of sediments, similar to mudflows on land.

### 7. Post information on the billboard. Add new information to ongoing projects on the wall.

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## EXPLORE

### 8. Explore today's investigation with inquiry activities.

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### 9. Explore today's simulation with inquiry activities.

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### 10. Collect data and post.

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**One possible activity:** Sea Secrets

**Procedure:** Students identify some ocean features and draw a profile of the ocean using data points

**Discussion:** Discuss how ocean floor is formed at mi-ocean ridges

**Key question:** Why does gold stay preserved in the deep?

**Source:**

[http://smithsonianeducation.org/lesson\\_plans//ocean/acrobat/secret.pdf](http://smithsonianeducation.org/lesson_plans//ocean/acrobat/secret.pdf)

## EXTEND

### 11. Prompt every student to write a short product tied to today's reading.

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### 12. Close with a short summary.

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Extend the reading to the students' lives or to the world

# **EARTH SCIENCE** Lesson Plan

Quarter 2, Week 10, Day 4



## **Outcomes for Today**

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Standard Focus:

### **PREPARE**

#### **1. Background knowledge necessary for today's reading.**

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Light only penetrates the upper 100 m or so of the oceans. The average depth of the oceans is 3800 m. The first use of sonar for oceanographic mapping was in the 1920s. Using side-scan sonar signals can be sent at an angle to map the sides of underwater hills and other features. Underwater vessels, known as submersibles, are used to explore deep-sea trenches. Satellites are also used to gather information on seafloor topography.

#### **2. Vocabulary Word Wall.**

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Introduce 3-5 important words from today's reading

**abyssal plains**

**deep-sea trenches**

**mid-ocean ridges**

- Show, say, explain, expand, explode or buzz about the word briefly
- Show, say, define the word quickly and add to the word
- wall.

### **READ**

#### **3. Review the vocabulary and concepts previously covered in this chapter.**

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#### **4. Read directions for investigation/activity.**

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#### **5. Read text.**

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Ch. 16.2, pp. 425 - 427

## RESPOND

### 6. Fix the facts. Clarify what's important.

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Discuss the reading and add 3-5 events/concepts to the billboard

Students might mention:

- Ocean basins represent about 60% of Earth's surface.
- Many deep-sea trenches lie next to volcanic islands.
- Volcanic eruptions and earthquakes often occur along mid-ocean ridges.

### 7. Post information on the billboard. Add new information to ongoing projects on the wall.

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## EXPLORE

### 8. Explore today's investigation with inquiry activities.

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### 9. Explore today's simulation with inquiry activities.

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### 10. Collect data and post.

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**One possible activity:** Ocean Soundings

**Procedure:** Students model the ocean floor and take depth measurements

**Discussion:** Discuss how oceanographers use remote sensing to learn about the ocean

**Key question:** How accurate was the chart you created?

**Source:** <http://octopus.gma.org/surfing/ocean/soundings.html>

## EXTEND

### 11. Prompt every student to write a short product tied to today's reading.

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### 12. Close with a short summary.

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Extend the reading to the students' lives or to the world



# **EARTH SCIENCE** Lesson Plan

Quarter 2, Week 10, Day 5



## **Outcomes for Today**

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### **PREPARE**

#### **1. Background knowledge necessary for today's reading.**

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Sediments on the ocean floor for the most part originate on the continents. Sediments are washed out to sea by rivers and the wind. Generally larger coarser materials settle on the continental shelves. Sediment grains are affected by both gravity and the resistance of the water as they settle through the water. Sediments that reach the abyssal plains tend to be fine-grained mud and silt. Shell particles of once-living organisms also make up part of the seafloor.

#### **2. Vocabulary Word Wall.**

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Introduce 3-5 important words from today's reading

**Seamounts      guyots      oozes**

- Show, say, explain, expand, explode or buzz about the word briefly
- Show, say, define the word quickly and add to the word wall.

### **READ**

#### **3. Review the vocabulary and concepts previously covered in this chapter.**

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#### **4. Read directions for investigation/activity.**

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#### **5. Read text.**

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Ch. 16.2, pp. 427 – 429

## RESPOND

### 6. Fix the facts. Clarify what's important.

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Discuss the reading and add 3-5 events/concepts to the billboard

Students might mention:

- Solitary mountains on the ocean floor are thought to be extinct volcanoes.
- Ocean currents are generally too weak to erode solid rock.
- Oxides of minerals precipitated from seawater form nodules on the seafloor.

### 7. Post information on the billboard. Add new information to ongoing projects on the wall.

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## EXPLORE

### 8. Explore today's investigation with inquiry activities.

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### 9. Explore today's simulation with inquiry activities.

---

### 10. Collect data and Post

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**One possible activity:** Hydrothermal Vent Challenge

**Procedure:** Students will investigate hydrothermal vents

**Discussion:** Discuss the concepts of plate tectonics

**Key question:** What are common features of hydrothermal vents?

**Source:**

<http://oceanexplorer.noaa.gov/explorations/04fire/background/edu/media/RoF.ventchallenge.pdf>

## EXTEND

### 11. Prompt every student to write a short product tied to today's reading.

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### 12. Close with a short summary.

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Extend the reading to the students' lives or to the world.