

# **EARTH SCIENCE** Lesson Plan

## Quarter 1, Week 4, Day 1



### **Outcomes for Today**

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Standard Focus: Earth Sciences 9.b *Students know the principal natural hazards in different California regions and the geological basis of those hazards.*

#### **PREPARE**

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

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The water cycle is a never-ending circulation of water through the Earth's systems.

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

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Introduce 3-5 important, useful words from today's reading

**Water cycle      run-off      precipitation      water shed      divide**

- Show, say, explain, explode or buzz about the word briefly
- Show, say and 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. 9.1, pp. 211-215

#### **RESPOND**

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

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Discuss the reading and add 3-5 concepts/events

Students might mention:

- Water that seeps into the ground becomes groundwater.
- Soils with vegetation allow more water to enter the ground than do soils with out vegetation.
- Slow, gentle precipitation is more beneficial to plants and cause less erosion.

- A watershed includes all of the land whose water drains into a stream system.

**7.** Post information on the billboard. Add new information to ongoing class 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:** Build Your Own Watershed

**Description of the activity:** A model is constructed to illustrate the basic properties of a watershed.

**Procedure:** A large plastic container is used along with modeling clay, sand, and aquarium gravel.

**Discussion:** Discuss how water flows from higher elevations to lower elevations, and how watersheds are interconnected. Discuss how the placement of buildings, roads, and parking lots can be important to runoff.

**Key questions:**

- What can be done to reduce peoples' impact on watersheds and their environment?
- What are some possible sources of watershed pollution in the community?

**Source:** [http://epa.gov/ogwdw000/kids/activity\\_grades\\_9-12\\_buildyourownwatershed.html](http://epa.gov/ogwdw000/kids/activity_grades_9-12_buildyourownwatershed.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 1, Week 4, Day 2



### **Outcomes for Today**

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Standard Focus: Earth Sciences 9.b

#### **PREPARE**

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

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The faster a stream's water is moving, the more power it has to carry larger and larger particles. The greater the volume of water that a stream moves, the greater the stream's capacity.

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

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Introduce 3-5 important, useful words from today's reading

**Solution      suspension      bed load      flood      flood plain**

- Show, say, explain, explode or buzz about the word briefly
- Show, say and 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. 9.1, pp. 215-221

#### **RESPOND**

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

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Discuss the reading and add 3-5 concepts/events

Students might mention:

- A stream can carry its load in three ways.
- Larger pieces of materials carried along by the water become smoother and rounder over time.
- Flood water continues to rise after the precipitation has stopped because of the time it takes for runoff to collect.

7. Post information on the billboard. Add new information to ongoing class 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:** Overflowing the Banks

**Description of the activity:** Construct a model of a river system with levees

**Procedure:** Create a clay model with and without levees

**Discussion:** Discuss what information people need to have when residing near a stream system.

**Key question**

- What are other means of flood control or prevention?

**Source:** <http://www.pbs.org/wgbh/nova>

Video – Flood! is available

## 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 the world.

# EARTH SCIENCE Lesson Plan

## Quarter 1, Week 4, Day 3



### Outcomes for Today

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#### PREPARE

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

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A stream is a part of a drainage basin. Drainage basins consist of all the interconnected streams that drain runoff into a particular river.

##### 2. Vocabulary Word Wall.

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Introduce 3-5 important, useful words from today's reading

**Stream channel      stream bank      meander      delta      rejuvenation**

- Show, say, explain, explode or buzz about the word briefly
- Show, say and 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. 9.2, pp.222-227

#### RESPOND

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

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Discuss the reading and add 3-5 concepts/events

Students might mention:

- A stream's source is called its headwaters.
- Moving water forms a channel.
- When streams decrease in velocity, sediment is deposited into alluvial fans or deltas.

##### 7. Post information on the billboard. Add new information to ongoing class 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:** Formation of a Stream Valley

**Description of the activity:** Construct models of three stages of development

**Procedure:** Students use Playdough to make models of streams in different stages of formation

**Discussion:**

**Key questions:**

- If you were going in a canoe and wanted to go fast, which would you choose?
- Which stage would you like to live near?

**Source:** <http://learnnc.org/lessonsGeol1305232002698>

## 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 the world.

# **EARTH SCIENCE** Lesson Plan

## Quarter 1, Week 4, Day 4



### **Outcomes for Today**

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Standard Focus: Earth Sciences 9.c *Students know the importance of water to society, the origins of California's fresh water, and the relationship between supply and need*

#### **PREPARE**

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

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Water collects in depressions on the Earth's surface during times of heavy rain or runoff. If more water is received than is leached away or evaporates, it forms a lake.

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

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Introduce 3-5 important, useful words from today's reading

##### **Lake**

##### **eutrophication**

##### **wetland**

- Show, say, explain, explode or buzz about the word briefly
- Show, say and 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. 9.3, pp. 228-231

#### **RESPOND**

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

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Discuss the reading and add 3-5 concepts/events

Students might mention:

- Lakes form in a variety of ways.
- Lakes can be natural or man-made.
- Lakes can be enriched by the addition of nutrients from plants and animals.

7. Post information on the billboard. Add new information to ongoing class 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:** Surface materials determine where a lake can form

**Description of the activity:** MiniLab, p. 229

**Procedure:** Three different earth materials are used to demonstrate where a lake can form

**Discussion:** Various materials differ in their porosity, or the percentage of pore space to allow fluids to flow through.

**Key questions:** See p. 229

### 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.

---

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



# EARTH SCIENCE Lesson Plan

## Quarter 1, Week 4, Day 5



### Outcomes for Today

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#### PREPARE

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

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Lake Baikal has ecological and cultural importance. It provides a Natural laboratory to study different species that reside there.

##### 2. Vocabulary Word Wall.

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Introduce 3-5 important, useful words from today's reading

**Pollution**

**pesticides**

**toxins**

- Show, say, explain, explode or buzz about the word briefly
- Show, say and 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.

---

##### 5. Read text.

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The Jewel of Siberia, p. 234

#### RESPOND

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

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Discuss the reading and add 3-5 concepts/events

Students might mention:

- It is the largest and deepest freshwater lake in the world.
- The Nerpa seal is the only known species of freshwater seal in the world.
- Attempts have been made to preserve the Lake Baikal area.

##### 7. Post information on the billboard. Add new information to ongoing class 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:** Investigating how Pollutants Travel through Groundwater

**Description of the activity:** Students will determine how pollutants can travel through sediment

**Procedure:** A "pollutant" is added to a "lake" model

**Discussion:** Discuss how pollutants can easily enter water supplies without being directly introduced.

**Key questions:**

- What are real world examples of contamination sources?
- How can contamination be prevented?

**Source:** <http://www.scienceteacherprogram.or/envsci/nanes02.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 the world.