

EARTH SCIENCE Lesson Plan

Quarter 1, Week 3, Day 1



Outcomes for Today

Standards Focus: Earth Science 9.b *Students know the principal natural hazards in different California regions and the geological basis for these hazards.*

PREPARE

1. Background knowledge necessary for today's reading.

The uneven heating of air results in the movement of air from one place to another, or wind. Winds can be influenced by terrain and vegetation. Global winds are influenced by large air masses and the Earth's rotation. Wind erosion can be uphill or downhill.

Dust Bowl footage is available at: www.weru.ksu.edu/vids

2. Vocabulary Word Wall.

Introduce 5 important, useful words from today's reading

Suspension saltation deflation abrasion loess

- Show, say, explain, expand, 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.

4. Read directions for investigation/activity.

5. Read text.

Chapter 8.2, pp. 191-197

RESPOND

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

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

- Discuss the text; clarify the most important facts, concepts, ideas, and vocabulary
- Decide on the 3-5 most important concepts and post these on the billboard

Students might mention:

- Wind cannot carry particles as large as those carried by water.
- Wind erosion is more likely in areas that receive little precipitation and have little vegetation.
- The American Great Plains still show evidence of deflation that occurred during the Dust Bowl of the 1930's.

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

- New concept information can be added to the billboard
- An answer can be added to the billboard from the KWL chart
- New information can be added to ongoing charts and investigations

EXPLORE

8. Explore today's investigation with inquiry activities.

9. Explore today's simulation with inquiry activities.

10. Collect data and post.

One possible activity: Name that Wind!

Description of the activity: Students use the Beaufort Wind Scale and pictures of a tree, house and flag to identify wind speeds

Procedure: Students use the Beaufort Scale and pictures to compare wind speeds

Discussion: Wind comes in several strengths. In 1805, a British Admiral, Sir Francis Beaufort, developed an observation scale for measuring the winds at sea. Later, it was adapted for use on land.

Key questions

- How is wind speed measured?
- Is the wind stronger at different times of the day?

Source: <http://www.scienceteacher.org/k12resources/lessons/lessonA1.htm>

EXTEND

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

12. Close with a short summary.

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

EARTH SCIENCE Lesson Plan

Quarter 1, Week 3, Day 2



Outcomes for Today

PREPARE

1. Background knowledge necessary for today's reading.

Winds are described by both speed and directions. Winds are named according to the direction from which they are blowing. Different forces can affect the wind as can the landscape.

2. Vocabulary Word Wall.

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

Deposition dune wind velocity loess

- Show, say, explain, expand, 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.

4. Read directions for investigation/activity.

5. Read text.

Ch.8.2, pp. 194-197

RESPOND

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

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

- Discuss the text; clarify the most important facts, concepts, ideas, and vocabulary
- Decide on the 3-5 most important concepts and post these on the billboard

Students might mention:

- Wind deposition occurs in areas where there are changes in wind velocity.
- The gentle slope of a dune, the windward side, forms in the direction from which the wind blows.
- Sand accumulates around objects that block its forward movement.
- Dunes are classified by their shapes.

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

- New concept information can be added to the billboard
- An answer can be added to the billboard from the KWL chart
- New information can be added to ongoing charts and investigations

EXPLORE

8. Explore today's investigation with inquiry activities.

9. Explore today's simulation with inquiry activities.

10. Collect data and post.

One possible activity: Where does wind erosion occur? MiniLab p. 31 or p. 194 in the text

Description of the activity: Students interpret a map

Procedure:

Discussion: Wind erosion occurs in some part of the U.S., but not in others.

Key questions

EXTEND

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

12. Close with a short summary.

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

EARTH SCIENCE Lesson Plan

Quarter 1, Week 3, Day 3



Outcomes for Today

PREPARE

1. Background knowledge necessary for today's reading.

Most of the Earth's freshwater supply is locked up in the form of glaciers. Glaciers are found in areas with climates that can sustain their formation and preservation.

2. Vocabulary Word Wall.

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

Glacier **cirque** **moraine** **outwash**

- Show, say, explain, expand, 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.

4. Read directions for investigation/activity.

5. Read text.

Ch. 8.3, pp. 198-203

RESPOND

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

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

- Discuss the text; clarify the most important facts, concepts, ideas, and vocabulary
- Decide on the 3-5 most important concepts and post these on the billboard

Students might mention:

- Glaciers are large, moving masses of ice.
- There are two types of glaciers: valley glaciers and continental glaciers.
- Glacial erosion forms various landform features.

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

- New concept information can be added to the billboard
- An answer can be added to the billboard from the KWL chart
- New information can be added to ongoing charts and investigations

EXPLORE

8. Explore today's investigation with inquiry activities.

9. Explore today's simulation with inquiry activities.

10. Collect data and post.

One possible activity: Glaciers and Icebergs

Description of the activity Students create a miniature model of a glacier and simulate the way landforms are affected by glacial action

Procedure: Students partially fill a paper cup with gravel and water and freeze overnight. The next day remove the paper cup and move the glacier model over the surfaces of soft wood or clay.

Discussion: Rock and gravel freeze into the glacier and as the glacier moves it creates patterns called glacial scrapings.

Key questions:

- How can scientists tell if glaciers have moved over the land in a particular area?
- How does evidence of glaciation provide clues to the climate of a particular area over a long period of time?

Source: [http:// www.discoveryschool.com](http://www.discoveryschool.com)

EXTEND

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

12. Close with a short summary.

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

EARTH SCIENCE Lesson Plan

Quarter 1, Week 3, Day 4



Outcomes for Today

PREPARE

1. Background knowledge necessary for today's reading.

2. Vocabulary Word Wall.

Introduce 5 important, useful words from today's reading

Hazard map debris drainage landslide

- Show, say, explain, expand, 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.

4. Read directions for investigation/activity.

5. Read text.

RESPOND

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

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

- Discuss the text; clarify the most important facts, concepts, ideas, and vocabulary
- Decide on the 3-5 most important concepts and post these on the billboard

Students might mention:

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

- New concept information can be added to the billboard
- An answer can be added to the billboard from the KWL chart
- New information can be added to ongoing charts and investigations

EXPLORE

8. Explore today's investigation with inquiry activities.

9. Explore today's simulation with inquiry activities.

10. Collect data and post.

One possible activity Mapping a Landslide, pp. 32-34 of Geolab and MiniLab Worksheets

Description of the activity: Students make inferences from a topographic map

Procedure Students interpret a map to answer questions related to a landslide

Discussion Human development often encroaches on nature in ways that prove unsafe.

Key questions

- Should areas susceptible to landslides be developed?
- What should be done for already developed areas to help people deal with potential landslides?

EXTEND

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

12. Close with a short summary.

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

EARTH SCIENCE Lesson Plan

Quarter 1, Week 3, Day 5



Outcomes for Today

PREPARE

1. Background knowledge necessary for today's reading.

The rate of glacial movement is varies in different parts of the glacier.

Additional information on glaciers can be found on the website for the National Snow and Ice Data Center: <http://www.nsidc.org>

2. Vocabulary Word Wall.

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

Retreat advance accumulation terminus surging glacier

- Show, say, explain , expand, 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.

4. Read directions for investigation/activity.

5. Read text.

Why do glaciers move? From website above, go to general info, click on Q & A.

RESPOND

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

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

- Discuss the text; clarify the most important facts, concepts, ideas, and vocabulary

- Decide on the 3-5 most important concepts and post these on the billboard

Students might mention:

- Movement along the underside of the glacier is slower than at the top because of friction.
- Glaciers sometimes retreat over long periods of time.
- Sometimes glaciers surge rapidly over several weeks or months.

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

- New concept information can be added to the billboard
- An answer can be added to the billboard from the KWL chart
- New information can be added to ongoing charts and investigations

EXPLORE

8. Explore today's investigation with inquiry activities.

9. Explore today's simulation with inquiry activities.

10. Collect data and post.

One possible activity: Rates of Glacial Movement, text p.206

Description of the activity: Integrating science and math

Procedure: Students calculate the average speeds from data given

Discussion: Different parts of glaciers move at different rates

Key questions:

- What causes glaciers to retreat or advance?
- How do glaciers affect the land?
- Do glaciers affect people?

EXTEND

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

12. Close with a short summary.

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