

# EARTH SCIENCE Lesson Plan

## Quarter 2, Week 5, Day 1



### Outcomes for Today

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#### PREPARE

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

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Thunderstorms are most common in the U.S. especially in the Southeast and the Great Plains than in other parts of the world. This is due in part to the unique combination of heat, moisture, and lift resulting from the collision of air masses.

Most of the information we know about thunderstorms was obtained from the U.S. Thunderstorm Project during the late 1940's. This was a joint experiment between the U.S. Weather Bureau and several other agencies.

##### 2. Vocabulary Word Wall.

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Introduce 3-5 important words from today's reading

**Air-mass thunderstorm**

**sea-breeze thunderstorm**

**frontal thunderstorm**

- 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. 13.1, pp. 329-333

#### 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:

- Typical thunderstorms only last about 30 minutes.
- Air-mass thunderstorms are most common during mid-afternoon.
- A thunderstorm has three stages of development.

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:** Make Lightning

**Procedure:** Students demonstrate static electricity to simulate lightning

**Discussion:** Discuss the cause of lightning associated with thunderstorms

**Key question:** What should people be most aware of regarding lightning?

**Source:** <http://www.weatherwizkids.com/lightning.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 5, Day 2



### Outcomes for Today

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#### PREPARE

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

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Most thunderstorms are characterized by thunder, lightning, heavy rain and gusty winds. Under the right conditions, these storms can develop into supercells, particularly fierce storms. These develop as a result of enhanced convection currents where an increase in the vertical temperature difference exists between the higher and lower levels of the storm.

##### 2. Vocabulary Word Wall.

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Introduce 3-5 important words from today's reading

**supercell                  downburst                  tornado                  Fujita tornado intensity scale**

- 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. 13.2, pp. 334-340

#### 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:

- Only about 10% of the thunderstorms occurring each year are considered severe.
- Lightning and thunder are generated at the same time, even though they may appear to be heard and seen at different times.
- Most tornadoes form in the early spring during late afternoon and evening, when the temperature contrasts are the greatest.

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:** Tornado in a Bottle

**Procedure:** Students demonstrate the action of a tornado.

**Discussion:** Discuss how tornadoes are formed.

**Key question:** What conditions make tornadoes more prevalent in some parts of the U.S. but not in others?

**Source:** <http://www.crh.noaa.gov/abr/?n=tornadobottle.php>

### 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 5, Day 3



### Outcomes for Today

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Standard Focus: Earth Sciences 5.b “students know the relationship between the rotation of Earth and the circular motions of ocean currents and air in pressure centers”.

#### PREPARE

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

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As more and more people move to the warmer coastal climates the potential for economic loss from tropical storms increases. Emergency planning for evacuations is critical. Two years after the fact, the gulf coast is still dealing with the aftermath of Hurricane Katrina.

##### 2. Vocabulary Word Wall.

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Introduce 3-5 important words from today’s reading

**tropical cyclone eye eyewall storm surge Saffir-Simpson hurricane scale**

- 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.13.3, pp. 341-346

#### 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:

- The terms hurricane, typhoon, and cyclone all refer to tropical cyclones.
- Tropical cyclones occur most commonly in the late summer and early fall, when the oceans contain their largest amounts of stored heat energy.
- Hurricane hazards include violent winds, floods, and storm surges.

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:** Build a Hurricane Proof House

**Procedure:** Students design and construct a house to test its ability to withstand winds (this is a multi-day activity)

**Discussion:** Discuss science principles and building features to be addressed.

**Key question:** What building strategy was most effective?

**Source:** <http://redcross.tallytown.com/hurrproof.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 5, Day 4



### Outcomes for Today

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#### PREPARE

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

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Recurring weather problems such as floods, droughts, heat waves, and cold waves cause billions of dollars of damage in many farming areas. Natural resources are also impacted by the increased demands for energy for heating and cooling.

##### 2. Vocabulary Word Wall.

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Introduce 3-5 important words from today's reading

##### Recurring weather

##### drought

##### heat wave

- 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. 13.4, pp. 347-349

#### 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:

- Persistent weather includes floods, droughts, heat waves and cold waves.
- Persistent weather cause damage to agriculture, transportation, and recreation.
- Droughts and heat waves often occur together.

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:** Thirsty for Drought Relief

**Procedure:** Students work in teams to simulate a drought preparedness task force

**Discussion:** Discuss the roles of the committee members that each student will assume.

**Key question:** Should people conserve water regardless of drought status?

**Source:**

[http://www.nytimes.com/learning/teachers/lessons/20030128tuesday\\_print.html](http://www.nytimes.com/learning/teachers/lessons/20030128tuesday_print.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 5, Day 5



### Outcomes for Today

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#### PREPARE

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

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Cold waves are also brought on by large, high pressure systems formed over polar or arctic areas. During winter the jet stream may not change its location and several repeated high pressure systems may cover the same area for extended periods of time.

##### 2. Vocabulary Word Wall.

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Introduce 3-5 important words from today's reading

**cold wave**

**wind-chill factor**

- 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. 13.4, pp. 349-351

#### 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:

- Cold waves effect an area for prolong periods of time.
- The wind-chill index system has been in place since the 1940's.
- The wind-chill index estimates the heat loss from human skin caused by a combination of cold air and wind.

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:** continuation of either Day 3 or Day 4 activity

**Procedure:** See Day 3 or Day 4

**Discussion:** See Day 3 or Day 4

**Key question:** See Day 3 or Day 4

### EXTEND

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

---

12. Close with a short summary.

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