

EARTH SCIENCE Lesson Plan

Quarter 1, Week 7, Day 1



Outcomes for Today

PREPARE

1. Background knowledge necessary for today's reading.

All matter is made up of elements. Each element has distinct characteristics. An atom is the smallest particle of an element that has all the characteristics of that element. Atoms consist of even smaller particles: protons, neutrons, and electrons. The center of an atom is the nucleus.

2. Vocabulary Word Wall.

Introduce 3-5 important words from today's reading

element atom proton neutron electron

- 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. 3.1, pp. 53-55

RESPOND

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

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

Students might mention:

- All matter is made up of elements.
- Each element is identified by its own one-, two-, or three- letter abbreviation.
- An atom is the smallest particle of an element that has the element's characteristics.

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

- New concept information can be added to the billboard
- An answer can be added to a question on a 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: Fortified Cereals, p. 53 of text

Procedure: Students extract iron from crushed cereal using a magnet

Discussion: Discuss the need for iron as an essential element in our diets.

Key question: What other food or food products contained added nutrients?

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' or everyday world.

EARTH SCIENCE Lesson Plan

Quarter 1, Week 7, Day 2



Outcomes for Today

PREPARE

1. Background knowledge necessary for today's reading.
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Matter on Earth exists in one of three states: solid, liquid or gas. Changes of state require energy. A fourth state of matter, plasma, occurs when matter is heated to extremely high temperatures. Lightening and the inside of a neon light are both in the plasma state.

2. Vocabulary Word Wall.
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Introduce 3-5 important words from today's reading

evaporation

sublimation

plasma

condensation

- 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.
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4. Read directions for investigation/activity.
-

5. Read text.
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Ch. 3.3, pp. 67-69

RESPOND

6. Fix the facts. Clarify what's important.
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Discuss the reading and add 3-5 events to the billboard.

Students might mention:

- Liquids have volume but no particular shape.
- Gases do not have volume and expand into any space available, unless restrained by a container or gravity.
- Changes of state involve thermal energy.

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

- New concept information can be added to the billboard
- An answer can be added to a question on a 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: Solids, Liquids, and Gases

Procedure: Students conduct an experiment about the effect of melting ice on sea level.

Discussion: Discuss the differences on between reflection and absorption of heat.

Key question: Why is melting glaciers more of a concern to scientists than melting icebergs?

Source:

http://schooldiscoveryeducation.com/lessonplans/pdf/ec_solidsliquidsgases/ec_solidsliquidsgases.pdf

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' or everyday world.

EARTH SCIENCE Lesson Plan

Quarter 1, Week 7, Day 3



Outcomes for Today

Standards Focus: Earth Sciences 3.c *Students know how to explain the properties of rocks based on the physical and chemical conditions in which they formed, including plate tectonics theory.*

PREPARE

1. Background knowledge necessary for today's reading.

Very few of the 3000 minerals found on Earth have economic value. However, these few are widely used. Many nations economies depend on their supplies of natural resources.

2. Vocabulary Word Wall.

Introduce 3-5 important words from today's reading

mineral **crystal** **magma** **silicate**

- 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. 4.1, pp.78-83

RESPOND

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

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

Students might mention:

- The majority of minerals are made from compounds.
- There are 6 major crystal systems.

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

- New concept information can be added to the billboard
- An answer can be added to a question on a 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: (Everything is Made of Something and that Something Comes from Our Natural Resources) People Products Game

Procedure: Students play a game that identifies mineral resources used in everyday products

Discussion: Given the continual needs for minerals to maintain our standard of living, what are ways of managing resources

Key question: What essential inventions could you not live without?

Source: <http://www.mii.org/pdfs/every/why1.pdf>

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' or everyday world.

EARTH SCIENCE Lesson Plan

Quarter 1, Week 7, Day 4



Outcomes for Today

Standards Focus: Earth Sciences 9.a *Students know the resources of major economic importance in California and their relationship to California's geology.*

PREPARE

1. Background knowledge necessary for today's reading.

Minerals can be identified by their physical properties: color, texture, luster, streak, hardness, crystal shape, density, specific gravity, fracture, and cleavage. In some cases, scientists may need to rely on a mineral's special properties to assist in identification. These could include: radioactivity, magnetism, fluorescence, phosphorescence, and double refraction.

2. Vocabulary Word Wall.

Introduce 3-5 important words from today's reading

luster **streakhardness** **cleavage** **fracture**

- 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. 4.2, pp. 84-87

RESPOND

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

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

Students might mention:

- Several tests are used to identify minerals.
- Texture describes how a mineral feels and luster describes how a mineral reflects light.
- Cleavage and fracture describe how minerals break.

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

- New concept information can be added to the billboard
- An answer can be added to a question on a 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: Problem-Solving Lab, p. 88 of the text

Procedure: Students use Appendix H of the text to complete the mineral identification chart.

Discussion: Discuss the usefulness of such a table when trying to identify an unknown mineral.

Key question: How can the table be used to compare and contrast various minerals?

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' or everyday world.

EARTH SCIENCE Lesson Plan

Quarter 1, Week 7, Day 5



Outcomes for Today

Standards Focus: 9.a

PREPARE

1. Background knowledge necessary for today's reading.

Minerals are used in the production and manufacturing of everyday products and equipment. However, the Earth's supply of minerals is not unlimited. Recycling of materials can help extend our supplies, but does not guarantee that supplies will not eventually be exhausted.

2. Vocabulary Word Wall.

Introduce 3-5 important words from today's reading

specific gravity **gem** **ore**

- 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. 4.2, pp. 88-91

RESPOND

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

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

Students might mention:

- Some minerals have special properties that can also be used for identification.
- A mineral is an ore if it contains a useful substance that can be mined.
- Gems are rare and valuable minerals used for jewelry.

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

- New concept information can be added to the billboard
- An answer can be added to a question on a 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: The Price of Diamonds, text p. 91

Procedure: Students calculate what the price of common items would be compared to the carat weight of diamonds

Discussion: Diamonds and graphite have the same chemical formulas, yet their physical properties are very different.

Key question: Why is there set price for a diamond?

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' or everyday world.