Week of May 11

- Operations with Scientific Notation
- This stuff is fairly straight forward. It's the final week. Good job. Hopefully you didn't save everything for this week >_< .
- I'm still here if you need help.

Instructions

- On the attached worksheet (same as last week's) Do 18-22Even, and On the new sheet do 8-12Even. As always, answers on the bottom page.

Adjusting Answers

- Sometimes your answer will look like its finished, but will actually need adjustment. There are examples of this in the mult/div section of notes here. I will also put some examples of this after the notes.

Scientific Notation Operations

- Adding/Subtracting: Just put the numbers in standard form then add/sub them. Then put back into scientific notation.
- There is a method for add/sub numbers of different powers, but it is honestly way more work with silly errors being easier to make most of the time. If you want to see the method, its in your book on page 324. For those at home its on the slide after my example if you want.

Add/Sub Example

- $4.1 * 10^5 + 2.7 * 10^6$
- 410000+2700000
- 410000 + 2700000 = 3110000
- $3.11 * 10^6$

- Start
- Into Standard Form
- Perform operation (add)
- Back into Scientific Notation

Add sub method

EXAMPLE 1k **Adding and Subtracting Numbers in Scientific Notation**

Find the sum or difference. Write your answer in scientific notation.

a. $(4.6 \times 10^3) + (8.72 \times 10^3)$

$= (4.6 + 8.72) \times 10^3$ Distributive Property

$= 13.32 \times 10^3$ Add.

$= (1.332 \times 10^1) \times 10^3$ Write 13.32 in scientific notation.

$= 1.332 \times 10^4$ Product of Powers Property

Study Tip

In Example 1(b), you will get the same answer when you start by rewriting 3.5×10^{-2} as 35×10^{-3}.

b. $(3.5 \times 10^{-2}) - (6.6 \times 10^{-3})$

Rewrite 6.6×10^{-3} so that it has the same power of 10 as 3.5×10^{-2}.

$6.6 \times 10^{-3} = 6.6 \times 10^{-1} \times 10^{-2}$ Rewrite 10^{-3} as $10^{-1} \times 10^{-2}$.

$= 0.66 \times 10^{-2}$ Rewrite 6.6×10^{-1} as 0.66.

Subtract the factors.

$(3.5 \times 10^{-2}) - (0.66 \times 10^{-2})$

$= (3.5 - 0.66) \times 10^{-2}$ Distributive Property

$= 2.84 \times 10^{-2}$ Subtract.

Scientific Notation Operations

- Multiplying/Dividing:
- 1st: Multiply and divide the numbers.
- 2nd: mult/div the powers of 10 using exponential properties.
- 3rd: Make sure its in proper scientific notation because sometimes the result isn't.

Mult/Div Example 1

EXAMPLE 2 **Multiplying Numbers in Sci**

Find $(3 \times 10^{-5}) \times (5 \times 10^{-2})$. Writ

$$(3 \times 10^{-5}) \times (5 \times 10^{-2})$$
$$= 3 \times 5 \times 10^{-5} \times 10^{-2}$$
$$= (3 \times 5) \times (10^{-5} \times 10^{-2})$$
$$= 15 \times 10^{-7}$$
$$= 1.5 \times 10^{1} \times 10^{-7}$$
$$= 1.5 \times 10^{-6}$$

Study Tip

You can check your answer using standard form.

$(3 \times 10^{-5}) \times (5 \times 10^{-2})$
$= 0.00003 \times 0.05$
$= 0.0000015$
$= 1.5 \times 10^{-6}$

Note: The last step is actually important if you're trying to be in scientific notation since $15 * 10^{-7}$ isn't in scientific notation by rule. (only one number left of the decimal). Sometimes your answer will already be in scientific notation though so you won't have to do the extra step.

Start
They removed parenthesis since everything is multiplication. (associative property)
Next they rearranged to multiply the numbers together and the power together. (commutative property)
Next they multiplied the numbers using regular multiplication. They also multiplied the powers using the multiplication property of exponents.
Since 15 isn't in scientific notation, they made it $1.5 * 10^{1}$.
Then they multiplied the powers again and got the final answer.

Mult/Div Example 2

3 Dividing Numbers in Scientific

Find $\frac{1.5 \times 10^{-8}}{6 \times 10^{7}}$. Write your answer in s

$$\frac{1.5 \times 10^{-8}}{6 \times 10^{7}} = \frac{1.5}{6} \times \frac{10^{-8}}{10^{7}}$$
$$= 0.25 \times \frac{10^{-8}}{10^{7}}$$
$$= 0.25 \times 10^{-15}$$
$$= 2.5 \times 10^{-1} \times 10^{-15}$$
$$= 2.5 \times 10^{-16}$$

Note: Again making the final answer in scientific notation is important if that's what they asked for. Sometimes your answer will already be in scientific notation though so you won't have to do it.

Start
Notice the regrouped into 2 sets of division to put the numbers and powers with each other. Then, They did the division of number and used the division property of exponents for the powers. $1.5 \div 6 = .25$ and $10^{-8} \div 10^{7} = 10^{-15}$ (since -8 minus 7 is -15)
Then, since .25 isn't in scientific notation, put it into sci-note and got $2.5 * 10^{-1}$
Then $10^{-1} * 10^{-15}$ is 10^{-16}

Adjusting Answers Example

- Lets say you have
- First do the numbers
- Then do the 10 powers
- Put them back together.
- 10.2 breaks sci note form rule so change to be 1.02 and the 10 power **raises** by 1 since we made a big number look smaller.

- $(5.1 * 10^{5})(2 * 10^{3})$
- $5.1 * 2 = 10.2$
- $10^{5} * 10^{3} = 10^{8}$
- $10.2 * 10^{8}$
- $1.02 * 10^{9}$
- because only one number can be left of decimal in Sci Note

Adjusting Answers Example

- Lets say you have
- First do the numbers
- Then do the 10 powers
- Put them back together.
- .5 breaks sci note form rule so change to be 5.0 and the 10 power **lowers** by 1 since we made a small number look bigger.

- $(2 * 10^9) \div (4 * 10^3)$
- $2 \div 4 = .5$
- $10^9 \div 10^3 = 10^6$
- $.5 * 10^6$
- $5.0 * 10^5$
- because there must be exactly one non zero number to the left of decimal.

Name_____

Scientific Notation

Date_____ Period____

Write each number in scientific notation.

1) 0.000000786

2) 3940

3) 4.7

4) 1260000

5) 0.06

6) 175

Write each number in standard notation.

7) 6.17×10^{3}

8) 7×10^{4}

9) 7.31×10^{6}

10) 5.4×10^{-8}

11) 6.7×10^{-3}

12) 9.59×10^{2}

Write each number in scientific notation.

13) 0.2×10^{6}

14) 30×10^{-8}

15) 88.4×10^{3}

16) 28.8×10^{-9}

Simplify. Write each answer in scientific notation.

17) $(5.4 \times 10^{-1})(7 \times 10^{0})$

18) $(5 \times 10^{3})(3.5 \times 10^{-1})$

19) $(6 \times 10^{6})(4 \times 10^{-1})$

20) $(4.11 \times 10^{5})(8.65 \times 10^{-5})$

21) $(7.68 \times 10^{2})(9 \times 10^{6})$

22) $(8.31 \times 10^{-3})(6.6 \times 10^{-6})$

Name_____

Scientific Notation

Date_____ Period____

Write each number in scientific notation.

1) 0.000000786

7.86×10^{-7}

2) 3940

3.94×10^{3}

3) 4.7

4.7×10^{0}

4) 1260000

1.26×10^{6}

5) 0.06

6×10^{-2}

6) 175

1.75×10^{2}

Write each number in standard notation.

7) 6.17×10^{3}

6170

8) 7×10^{4}

70000

9) 7.31×10^{6}

7310000

10) 5.4×10^{-8}

0.000000054

11) 6.7×10^{-3}

0.0067

12) 9.59×10^{2}

959

Write each number in scientific notation.

13) 0.2×10^{6}

2×10^{5}

14) 30×10^{-8}

3×10^{-7}

15) 88.4×10^{3}

8.84×10^{4}

16) 28.8×10^{-9}

2.88×10^{-8}

Simplify. Write each answer in scientific notation.

17) $(5.4 \times 10^{-1})(7 \times 10^{0})$

3.78×10^{0}

18) $(5 \times 10^{3})(3.5 \times 10^{-1})$

1.75×10^{3}

19) $(6 \times 10^{6})(4 \times 10^{-1})$

2.4×10^{6}

20) $(4.11 \times 10^{5})(8.65 \times 10^{-5})$

3.555×10^{1}

21) $(7.68 \times 10^{2})(9 \times 10^{6})$

6.912×10^{9}

22) $(8.31 \times 10^{-3})(6.6 \times 10^{-6})$

5.485×10^{-8}

Name_____

Operations With Scientific Notation

Date_____ Period____

Simplify. Write each answer in scientific notation.

1) $(1.08 \times 10^{-3})(9.3 \times 10^{-3})$

2) $(2 \times 10^{-4})(8.1 \times 10^{-1})$

3) $(2.32 \times 10^{-6})(4 \times 10^{-5})$

4) $(3.48 \times 10^{3})(9.8 \times 10^{4})$

5) $(7.1 \times 10^{-5})(6.7 \times 10^{-6})$

6) $(6 \times 10^{3})(9.91 \times 10^{0})$

7) $\dfrac{7.1 \times 10^{6}}{8.2 \times 10^{1}}$

8) $\dfrac{5.4 \times 10^{-1}}{3.4 \times 10^{1}}$

9) $\dfrac{4 \times 10^{4}}{3.63 \times 10^{-4}}$

10) $\dfrac{9 \times 10^{-5}}{9.24 \times 10^{-6}}$

11) $\dfrac{8.42 \times 10^{3}}{5 \times 10^{2}}$

12) $\dfrac{8.9 \times 10^{6}}{8.4 \times 10^{6}}$

13) $(8.9 \times 10^{5})^{4}$

14) $(4 \times 10^{-5})^{-6}$

15) $(6 \times 10^{-5})^3$

16) $(6.3 \times 10^{2})^{-6}$

17) $(5.21 \times 10^{-5})^2$

18) $(2.4 \times 10^{-5})^4$

19) $\frac{3 \times 10^{-2}}{8 \times 10^{-1}}$

20) $\frac{4.1 \times 10^{4}}{1.28 \times 10^{-5}}$

21) $\frac{1.91 \times 10^{3}}{5 \times 10^{-4}}$

22) $\frac{1.62 \times 10^{-6}}{5.3 \times 10^{6}}$

23) $\frac{3.59 \times 10^{-2}}{2.22 \times 10^{1}}$

24) $(8.8 \times 10^{-5})^{-5}$

25) $\frac{6 \times 10^{-3}}{8.08 \times 10^{-2}}$

26) $(3.5 \times 10^{-2})(9 \times 10^{4})$

27) $(8.8 \times 10^{2})(2.25 \times 10^{-2})$

28) $\frac{1.18 \times 10^{-4}}{3 \times 10^{0}}$

 Name_____

Operations With Scientific Notation

Date_____ Period____

Simplify. Write each answer in scientific notation.

1) $(1.08 \times 10^{-3})(9.3 \times 10^{-3})$

1.004×10^{-5}

2) $(2 \times 10^{-4})(8.1 \times 10^{-1})$

1.62×10^{-4}

3) $(2.32 \times 10^{-6})(4 \times 10^{-5})$

9.28×10^{-11}

4) $(3.48 \times 10^{3})(9.8 \times 10^{4})$

3.41×10^{8}

5) $(7.1 \times 10^{-5})(6.7 \times 10^{-6})$

4.757×10^{-10}

6) $(6 \times 10^{3})(9.91 \times 10^{0})$

5.946×10^{4}

7) $\dfrac{7.1 \times 10^{6}}{8.2 \times 10^{1}}$

8.659×10^{4}

8) $\dfrac{5.4 \times 10^{-1}}{3.4 \times 10^{1}}$

1.588×10^{-2}

9) $\dfrac{4 \times 10^{4}}{3.63 \times 10^{-4}}$

1.102×10^{8}

10) $\dfrac{9 \times 10^{-5}}{9.24 \times 10^{-6}}$

9.74×10^{0}

11) $\dfrac{8.42 \times 10^{3}}{5 \times 10^{2}}$

1.684×10^{1}

12) $\dfrac{8.9 \times 10^{6}}{8.4 \times 10^{6}}$

1.06×10^{0}

13) $(8.9 \times 10^{5})^{4}$

6.274×10^{23}

14) $(4 \times 10^{-5})^{-6}$

2.441×10^{26}

15) $(6 \times 10^{-5})^3$

2.16×10^{-13}

16) $(6.3 \times 10^{2})^{-6}$

1.599×10^{-17}

17) $(5.21 \times 10^{-5})^2$

2.714×10^{-9}

18) $(2.4 \times 10^{-5})^4$

3.318×10^{-19}

19) $\dfrac{3 \times 10^{-2}}{8 \times 10^{-1}}$

3.75×10^{-2}

20) $\dfrac{4.1 \times 10^{4}}{1.28 \times 10^{-5}}$

3.203×10^{9}

21) $\dfrac{1.91 \times 10^{3}}{5 \times 10^{-4}}$

3.82×10^{6}

22) $\dfrac{1.62 \times 10^{-6}}{5.3 \times 10^{6}}$

3.057×10^{-13}

23) $\dfrac{3.59 \times 10^{-2}}{2.22 \times 10^{1}}$

1.617×10^{-3}

24) $(8.8 \times 10^{-5})^{-5}$

1.895×10^{20}

25) $\dfrac{6 \times 10^{-3}}{8.08 \times 10^{-2}}$

7.426×10^{-2}

26) $(3.5 \times 10^{-2})(9 \times 10^{4})$

3.15×10^{3}

27) $(8.8 \times 10^{2})(2.25 \times 10^{-2})$

1.98×10^{1}

28) $\dfrac{1.18 \times 10^{-4}}{3 \times 10^{0}}$

3.933×10^{-5}

Pick 3

ROCKS! Choice Board

Only 3

Create an anchor chart/poster detailing the ROCK CYCLE.	Document examples of weathering, erosion, and deposition where you live.	Write a rap, rhyme, or song that describes WED.
Sediment Story Write a story from the point of view of a piece of sediment as it travels through the rock cycle.	Complete the Weathering & Erosion Warm-Up WKST	If you found a rock you really liked, what could you do to try and identify it? Write a paragraph outlining all the steps in your process.
Complete the Exit Tickets.	Science Quote of the Week	Triple Venn Diagram Rock Types

Name: _____ Date: _____

ADMIT ONE

Exit Ticket

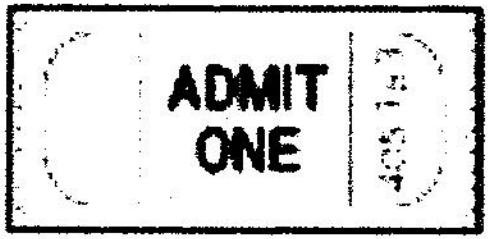
ADMIT ONE

Sort the examples of physical and chemical weathering into the correct category.

- Acid rain
- Frost wedging
- Does not change the composition
- Oxidation
- Abrasion
- Carbonation
- Changes the composition
- Exfoliation
- Root wedging
- Hydrolysis

Physical Weathering	Chemical Weathering

Name: _____ Date: _____



Exit Ticket

Identify the examples as weathering, erosion, or deposition. Write "W" for weathering, "E" for erosion, or "D" for deposition in the blank provided.

1. _____ A river delta forming.

2. _____ Acid rain breaking down limestone.

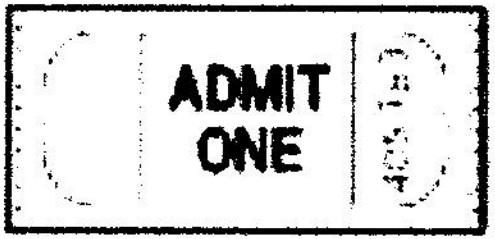
3. _____ Wind and water from a hurricane moving sediment.

4. _____ Waves building up sand on the beach.

5. _____ A landslide rushing down a mountain.

6. _____ A glacier wearing down layers of rock.

Name: _____ Date: _____



Exit Ticket

Fill in the chart below. List the three types of rocks, describe how each type of rock is formed, and identify at least two examples of each rock.

Type of Rock	Formation	Examples

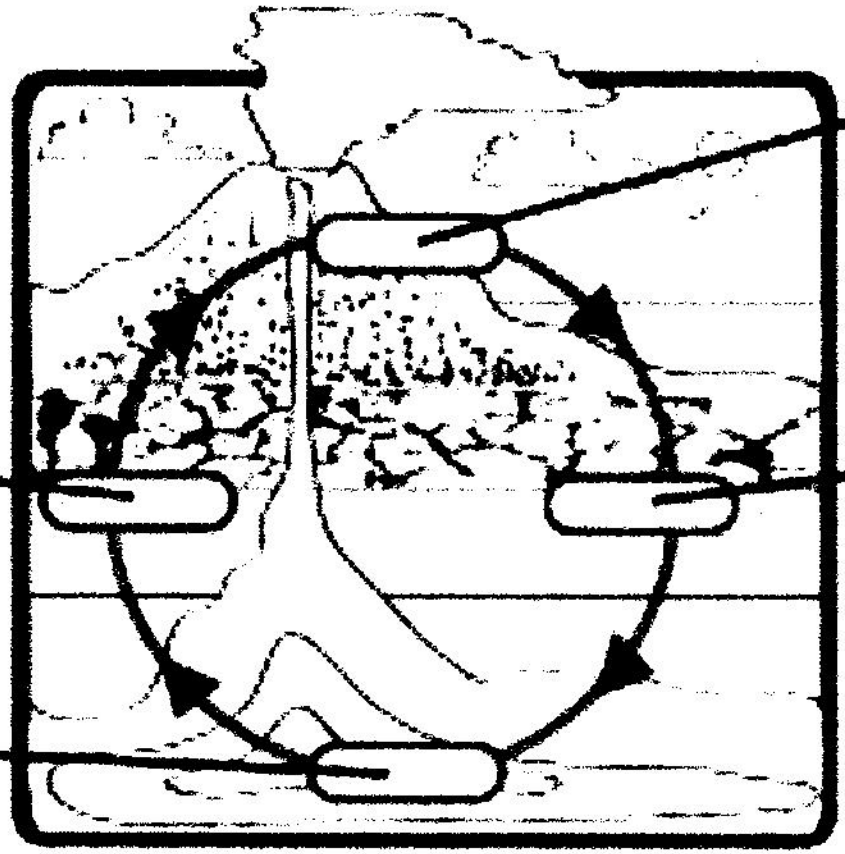
Name: _____ Date: _____

ADMIT ONE

Exit Ticket

ADMIT ONE

Label the types of rocks on the rock cycle diagram below.



Extrusive

_____

Intrusive

_____

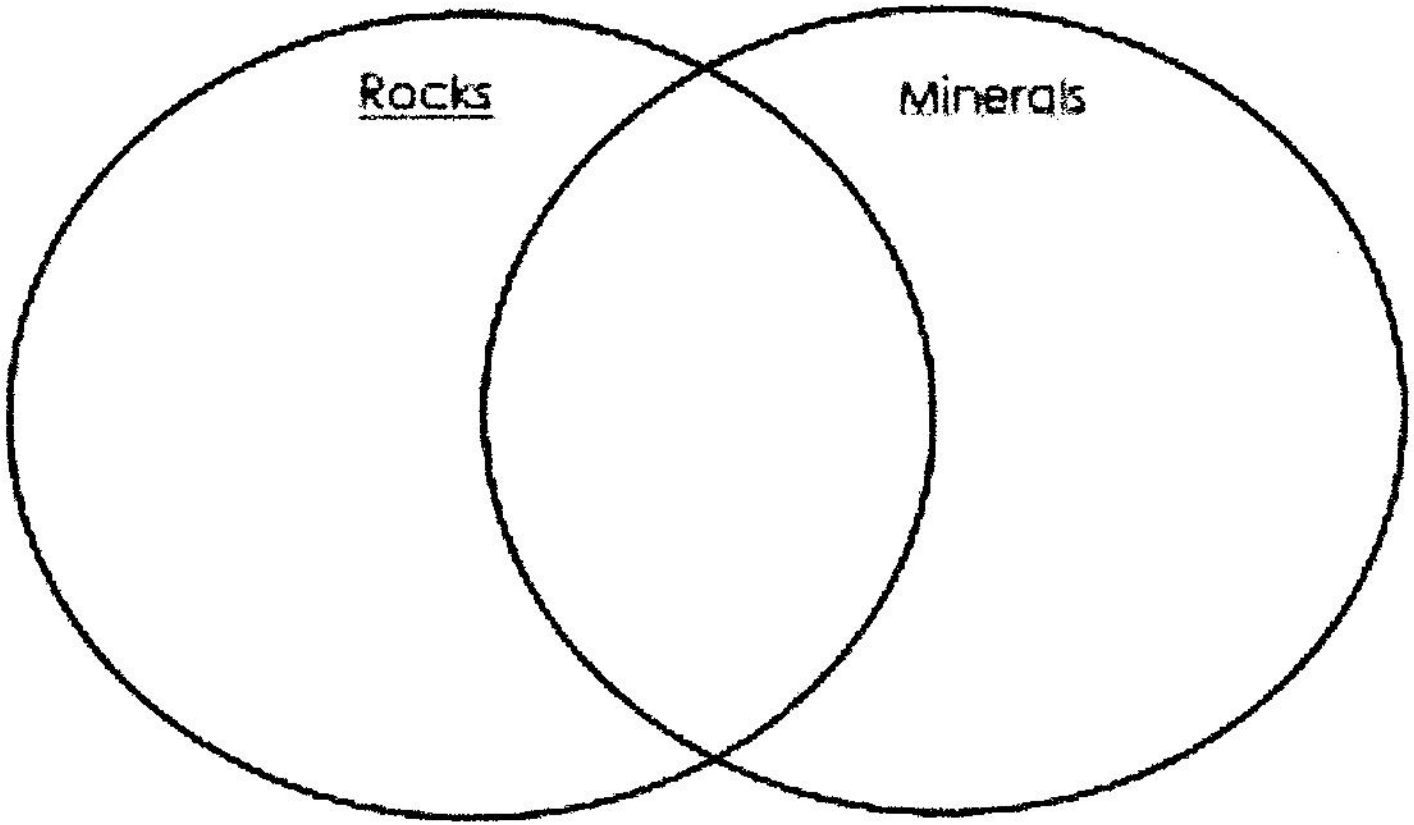
Name: _____ Date: _____

ADMIT ONE

Exit Ticket

ADMIT ONE

Compare and contrast rocks and minerals on the Venn diagram below.



Name: _____ Date: _____

Weathering and Erosion Warm-Up

Day 1

Describe each of the following key vocabulary terms using your own words.

Weathering - _____

Erosion - _____

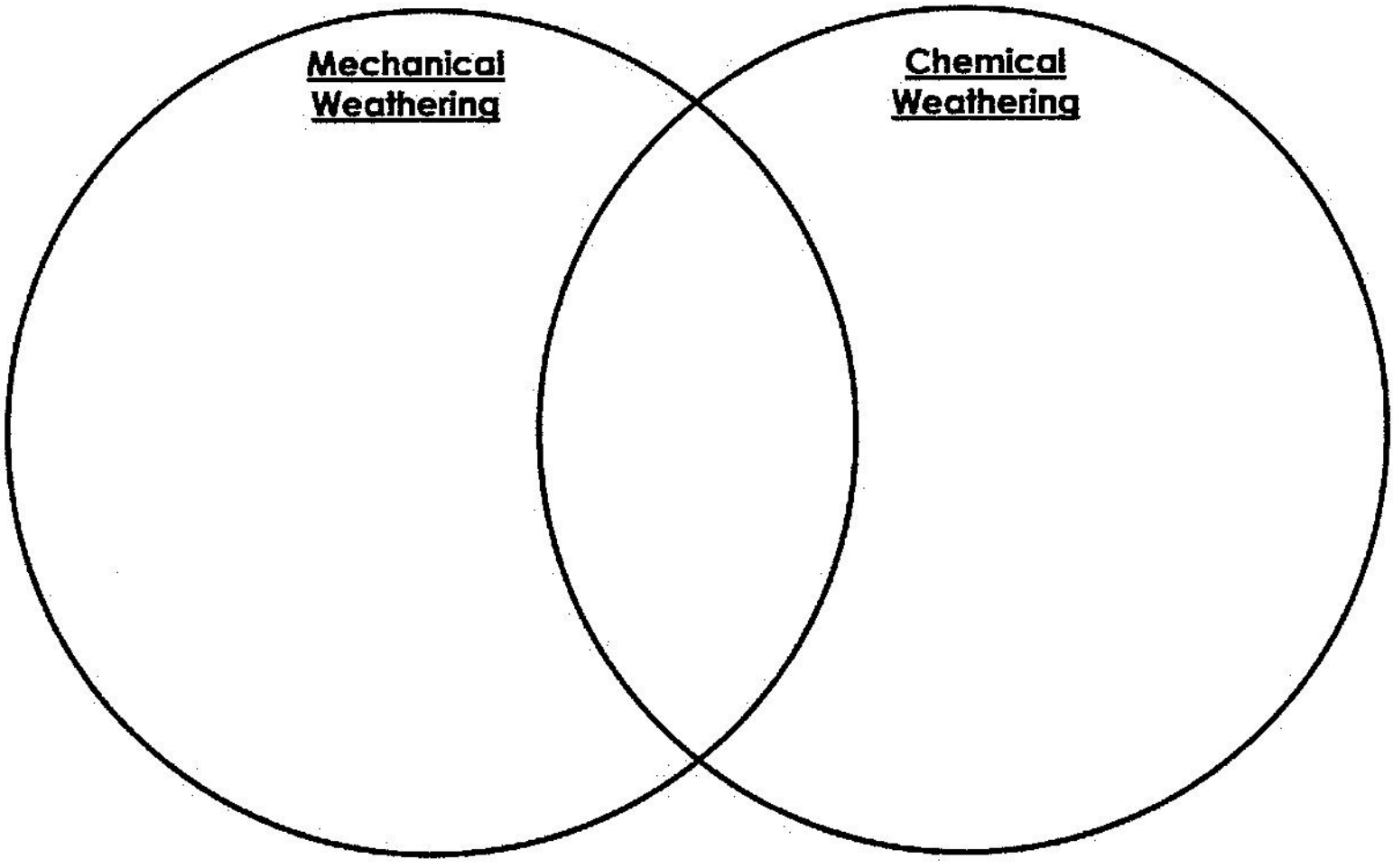
Deposition - _____

Abrasion - _____

Sediment - _____

Day 2

Compare and contrast Mechanical and Chemical Weathering using the Venn Diagram below.



Day 3

Write "W" for Weathering, "E" for Erosion, or "D" for Deposition for the following examples.

1. _____ Water wearing down rock
2. _____ Landslides
3. _____ Waves dropping sand on beach
4. _____ Glaciers scraping against rocks
5. _____ Wind abrasion
6. _____ Sand being moved by wind
7. _____ Rain washing away soil
8. _____ Sediment at bottom of ocean
9. _____ Acid rain dissolving limestone
10. _____ Deltas forming

Day 4

Match each term below to the best answer choice.

1. _____ Mechanical weathering
2. _____ Chemical weathering
3. _____ Acid rain
4. _____ Frost wedging
5. _____ Alluvial fan
6. _____ Runoff

A. a form of chemical weathering
B. rocks physically broken into smaller pieces
C. common deposition feature in deserts
D. breaks down rocks through chemical changes
E. water that does not soak into the ground
F. water seeps into cracks, freezes, and expands

Day 5

Answer the following questions.

1. The process by which fractures in rocks are enlarged due to plant roots is known as-
A. plant fracturing
B. root wedging
C. plant enlarging
D. none of the above

2. The burning of fossil fuels contributes to which of the following?
A. mechanical weathering
B. lower levels of carbon dioxide
C. acid rain
D. all of the above

3. Which of the following is not an agent of weathering?
A. soil
B. glaciers
C. wind
D. precipitation

4. The breakdown of rock material in its current location is known as-
A. erosion
B. weathering
C. deposition
D. landslide

Ledford

Week

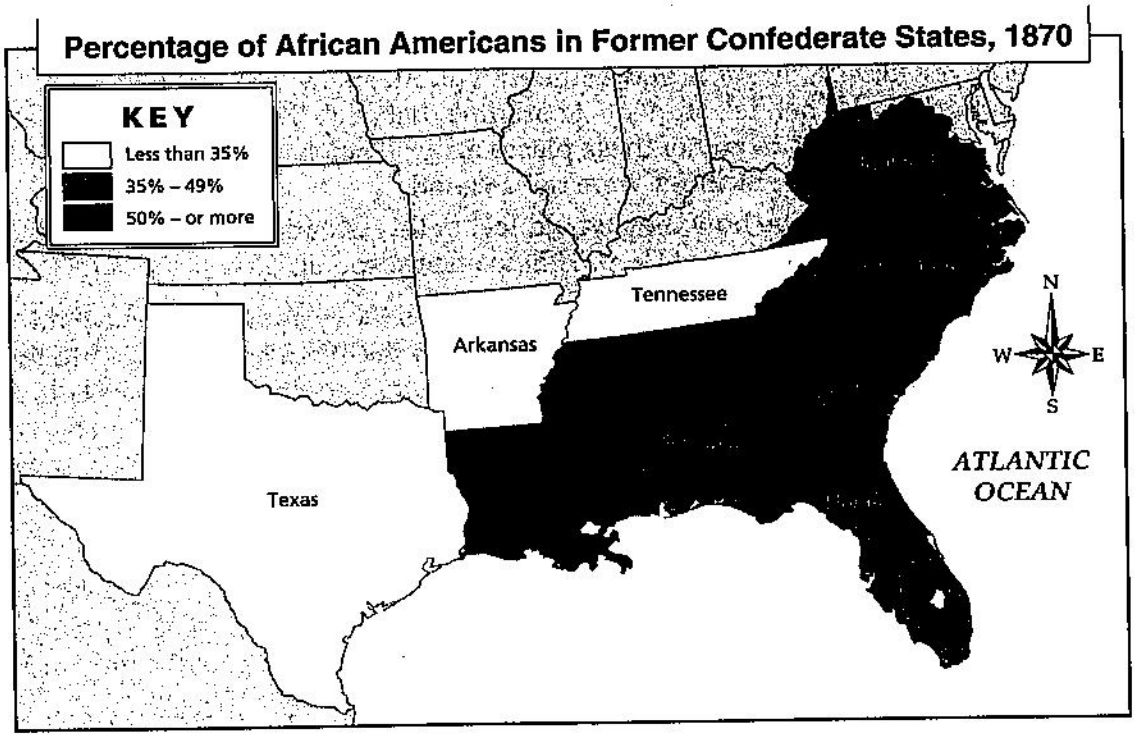
6

Skills for Life

Analyze Thematic Maps

When you study history, thematic maps can help you understand complex themes and patterns. When you are analyzing thematic maps, start by identifying the theme, title, and time period of the map. Then, examine the map key to find the special symbols and colors used on the map. Determine patterns in the factual information shown on the map. Finally, use the information on the map and what you know about the topic to make a generalization about the subject.

Directions: *Look at the map below and then answer the questions.*



1. (a) What is the title of the map? (b) What year is covered in the map? (c) What is the theme of the map?
2. What does the darkest shade on the map mean?
3. (a) Which three former Confederate states had the smallest percentage of African Americans in 1870? (b) Where are those states located in relation to the other former Confederate states?
4. In general, which area of the South had the greatest percentage of African Americans during Reconstruction? Explain why.

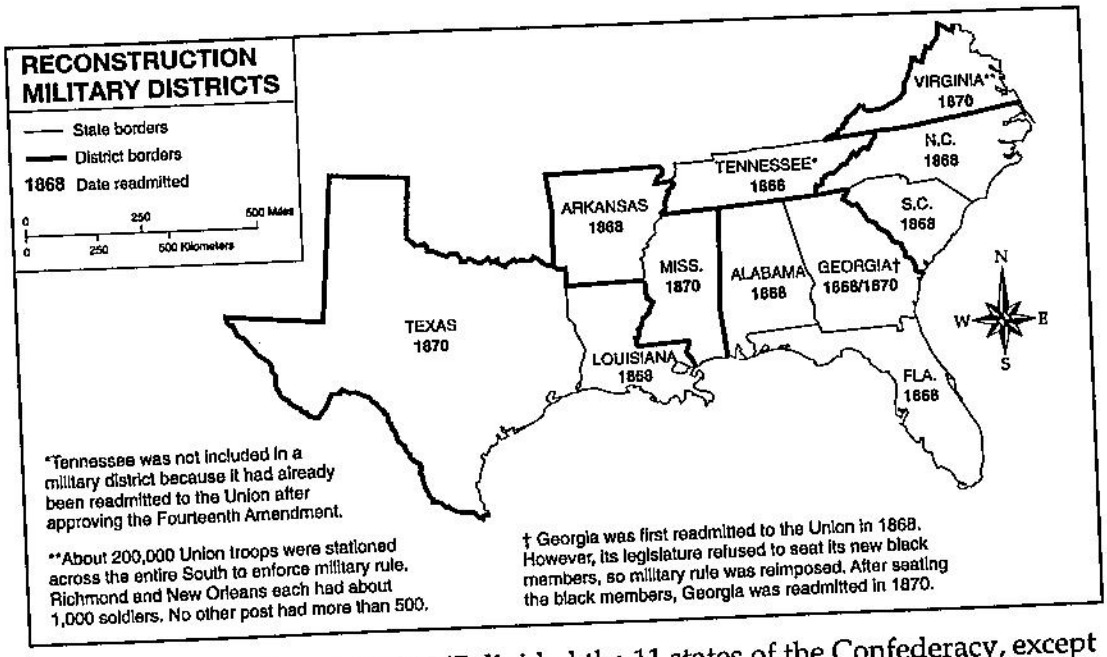
Name _____ Date _____ Class _____

Reconstruction and the New South

Geography and History

Rejoining the Union

Directions: *Study the map and read the passage carefully. Then answer the questions below or on a separate sheet of paper.*



The Reconstruction Act of 1867 divided the 11 states of the Confederacy, except Tennessee, into five military districts. The army had supreme authority over these districts.

Congress required that the southern states in the districts take certain steps before they would be readmitted to the Union. Each state had to write a new constitution that approved the Fourteenth Amendment and granted voting rights to all men. It then had to set up a state government under the new constitution.

The military commanders of the districts set out to register voters. During the first year, 703,000 black men and 627,000 white men were registered. In Alabama, Florida, Louisiana, Mississippi, and South Carolina, black voters were in the majority. In other states, groups of black and white voters joined together to form Radical Republican majorities.

In 1868, the southern states held conventions. The new constitutions they wrote called for civil rights for African Americans and voting rights for all men.

By 1870, all 10 states had satisfied the rules set up by Congress for statehood. The map above shows when each state was readmitted to the Union.

1. Which state was readmitted to the Union first?
2. What conditions did Congress set up in order for southern states to regain statehood?
3. **Analyze Cause and Effect** What caused Georgia to be readmitted to the Union twice?

Student-Choice Menu Boards Middle ELA

By Alyssa Tyra

Name:_____ Date: _____

Student Choice Menu Board
Middle School ELA, Week #6

Select 6 of the 9 tasks here. Use a separate sheet of paper to record your answers. Be sure to include the number of activity you choose.

#1) Where do you stand on school uniforms? Write a paragraph or two making your stance known. Be sure to include claims and counterclaims.	#2) Help your parents with a chore; cooking, cleaning, etc. Write a diary entry describing the event.	#3) Using imagery (the 5 senses) describe your house in 5-7 sentences.
#4) Write a proposal explaining how social media outlets can take steps to prevent bullying.	#5) Choose a book. Read for 30 minutes. Find at least three words you don't know. Use context clues to determine their meaning.	#6) Write your own example of the following types of figurative language: - personification -hyperbole -onomatopoeia -irony
#7) What is one goal you have for your life? What steps will you take to reach that goal? Be specific. Discuss the goal in a paragraph of at least 5-7 sentences.	#8) Read or watch three news stories about COVID-19 and write a summary of your findings.	#9) Write a 5-7 sentence summary of a book you've recently read or one you are reading now.