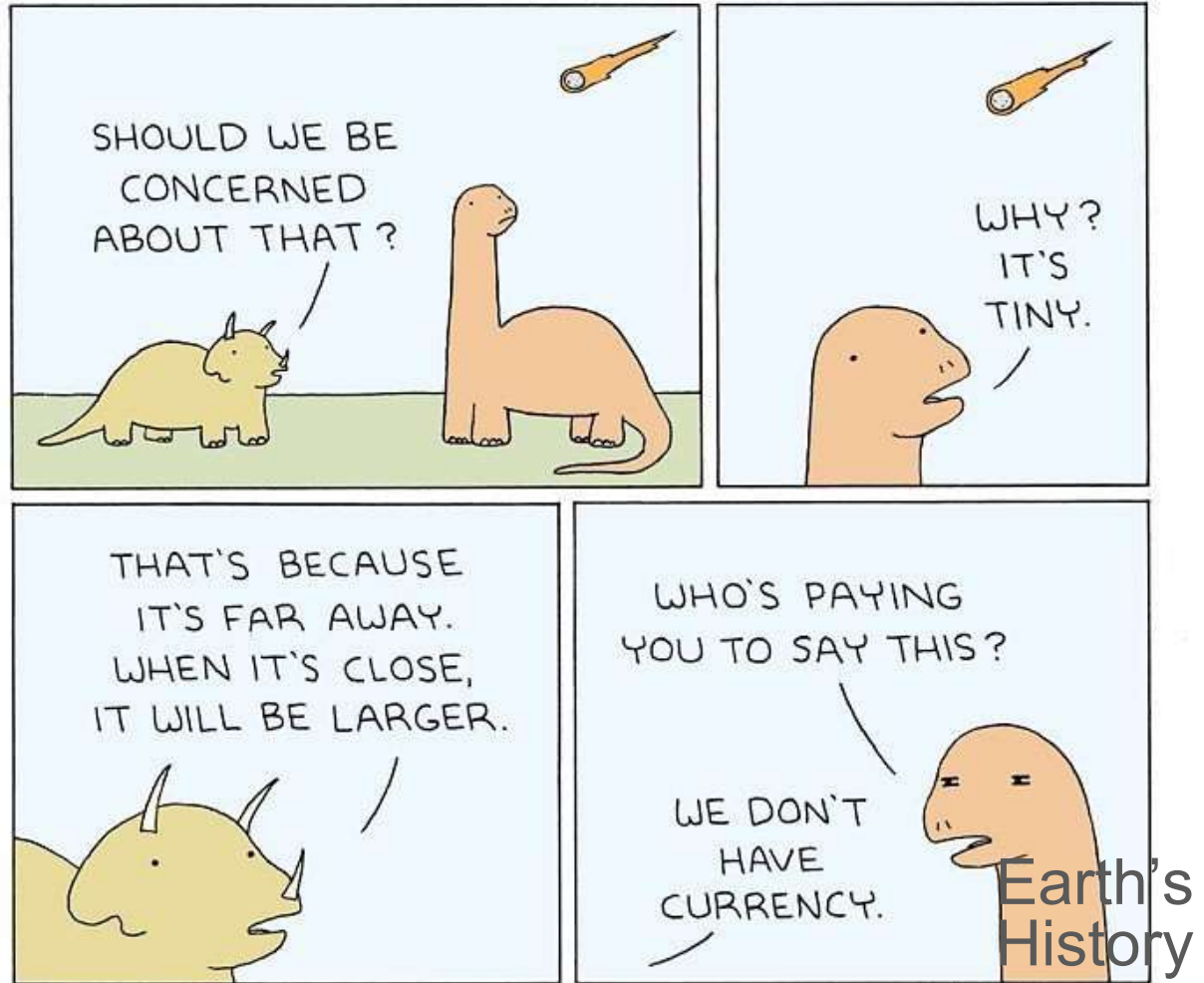


# Earth History





# Make sure you're completing the Guided Notes.



Name: \_\_\_\_\_ Period: \_\_\_\_\_

## Unit Five Guided Notes

Panel 1: A Triceratops and a Stegosaurus are looking at a small meteor in the sky. The Triceratops asks, "SHOULD WE BE CONCERNED ABOUT THAT?"

Panel 2: The Stegosaurus replies, "WHY? IT'S TINY."

Panel 3: The Triceratops explains, "THAT'S BECAUSE IT'S FAR AWAY. WHEN IT'S CLOSE, IT WILL BE LARGER."

Panel 4: The Stegosaurus asks, "WHO'S PAYING YOU TO SAY THIS?" and the Triceratops replies, "WE DON'T HAVE CURRENCY."

poorlydrawnlines.com

## Earth's History

1

Panel 1: A woman in a purple dress is talking to a young boy in a green shirt. She says, "Now remember, Timmy, in case of an emergency, you put your arms over your head. Duck and cover." He asks, "Is that why the dinosaurs died?"

Panel 2: A large green T-Rex is looking up at a large, flaming meteor falling from the sky.

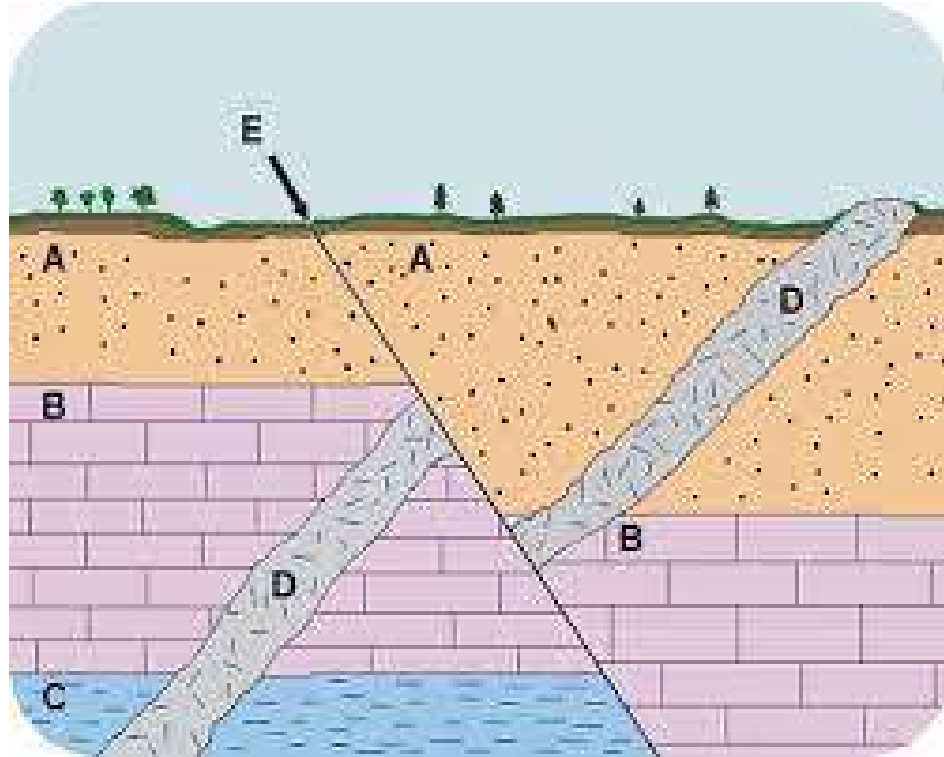
Panel 3: The T-Rex is shown in a close-up, looking up with its mouth open, as if it is screaming or shouting. The sound effect "reaches" is written above its head.

Panel 4: The T-Rex is shown in a close-up, looking up with its mouth open, as if it is screaming or shouting. The sound effect "reaches" is written above its head.

Cyanide and Happiness © Explosm.net



Order the events shown from oldest to youngest to produce the outcrop shown below. Justify your response with evidence from the diagram.





Do Now: Get packet. Put your name on it. Answer the question below at your table.

Order the pictures below from oldest to youngest. Explain how you did it.

**A**



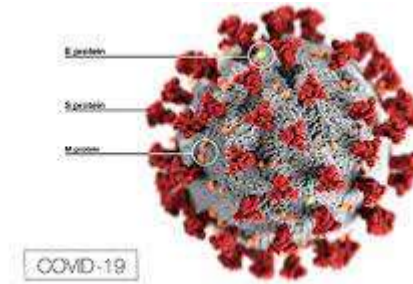
**B**



**C**



**D**





Do Now: Complete the three questions on page 5 of your Guided Notes.

Relative Dating Practice		
Instructions: For each diagram, order the events that created the outcrop from oldest to youngest. Justify your claim with evidence and reasoning.		
	<p>(Oldest)</p> <p>↑</p> <p>↓</p> <p>(Youngest)</p>	<p>Evidence &amp; Reasoning</p>
	<p>(Oldest)</p> <p>↑</p> <p>↓</p> <p>(Youngest)</p>	<p>Evidence &amp; Reasoning</p>
	<p>(Oldest)</p> <p>↑</p> <p>↓</p> <p>(Youngest)</p>	<p>Evidence &amp; Reasoning</p>



# Agenda for 2/9 WED

1. Do Now: Complete page 5
2. [Daily Spelling Bee Game](#)
3. Relative Dating Practice reviewed
4. Relative Dating Blooket stolen from someone.

Let's play!



Relative Dating

2,391 Plays

Edited a year ago

Scaperugs53

## Relative Dating Practice

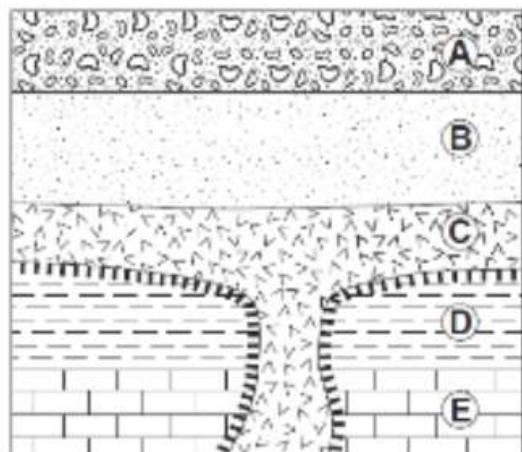
Instructions: For each diagram, order the events that created the outcrop from oldest to youngest. Justify your claim with evidence and reasoning.



	<p>(Oldest)</p> <p>↑</p> <p>↓</p> <p>(Youngest)</p>	<p>Evidence &amp; Reasoning</p>
--	---	---------------------------------

	<p>(Oldest)</p> <p>↑</p> <p>↓</p> <p>(Youngest)</p>	<p>Evidence &amp; Reasoning</p>
--	---	---------------------------------

	<p>(Oldest)</p> <p>↑</p> <p>↓</p> <p>(Youngest)</p>	<p>Evidence &amp; Reasoning</p>
--	---	---------------------------------





Key	
	Contact metamorphism
	Igneous rock

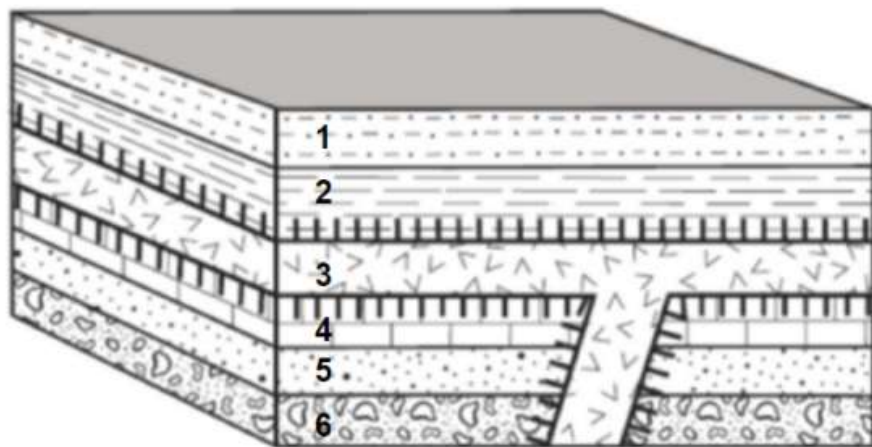
(Oldest)



(Youngest)

Evidence & Reasoning





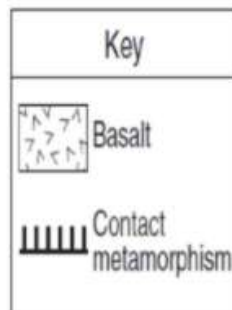
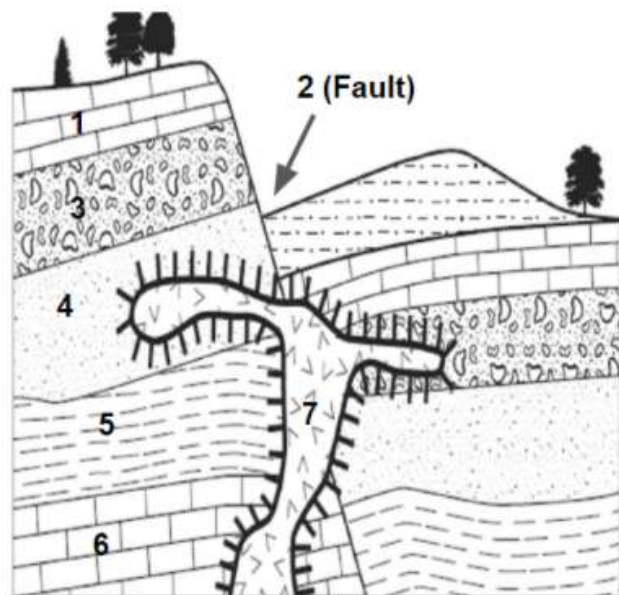
(Oldest)



(Youngest)

Evidence & Reasoning





(Oldest)

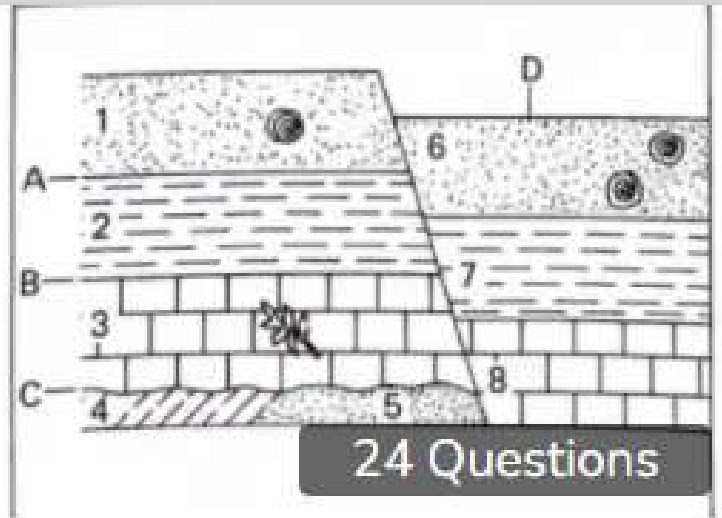


(Youngest)

Evidence & Reasoning



Let's play!



## Relative Dating

2,391 Plays

Edited a year ago

 Scaperpugs53



# At this point you should have your guided notes completed up to page 4-7. Do that if you haven't!

Relative Dating Guided Notes

Catastrophism	Uniformitarianism

Relative Dating is the process of determining the age of rock layers by comparing it to the rock layers around it.

Principle of Relative Dating	Description	Picture
<b>Original Horizontality</b>		
<b>Superposition</b>		
<b>Crosscutting Relationships</b>		
<b>Included Fragments</b>		
<b>Faunal Succession</b>		

3



In the diagrams below, layer 2 is igneous rock. The [diagram] pattern shows contact metamorphism.

**A**

**B**

An igneous intrusion occurs when magma forces its way between two existing rock layers and cools.

An igneous extrusion occurs when molten rock forces its way to the surface.

Outcrop A is an (intrusion or extrusion) \_\_\_\_\_

Order the layers in Outcrop A from oldest to youngest: \_\_\_\_\_

Outcrop B is an (intrusion or extrusion) \_\_\_\_\_

Order the layers in Outcrop B from oldest to youngest: \_\_\_\_\_

**Index Fossils** are the remains of living things that can be used to determine the age of rock layers.

A good Index Fossil:

1. Is easily identified.
2. Existed for a short period of time.
3. Had a wide geographic distribution.

Volcanic Ash is another good indicator of age because it is quickly distributed over a large area.

Use the Geologic History Chart at the end of this packet to determine the age of the following fossils:

Trilobite

Dinosaur

Mammal

Invertebrate

\_\_\_\_\_ M.S.E. \_\_\_\_\_ M.S.E. \_\_\_\_\_ M.S.E. \_\_\_\_\_ M.S.E.

An **unconformity** is a gap (missing sections) in the rock record, often represented by a wavy line. They form by:

Uplift → Weathering → Erosion → Deposition of new layers

Between which two layers does an unconformity exist?

Order the events from oldest to youngest:

\_\_\_\_\_

3

Relative Dating Practice

Instructions: For each diagram, order the events that created the outcrop from oldest to youngest. Justify your claim with evidence and reasoning.

(Oldest)

↑

↓

(Youngest)

Evidence & Reasoning

(Oldest)

↑

↓

(Youngest)

Evidence & Reasoning

(Oldest)

↑

↓

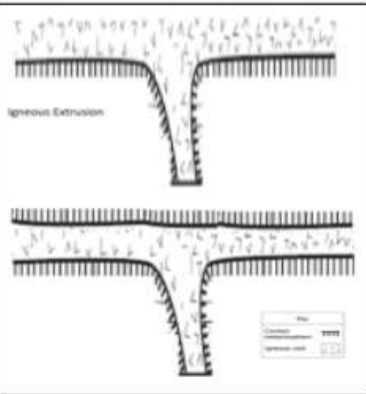
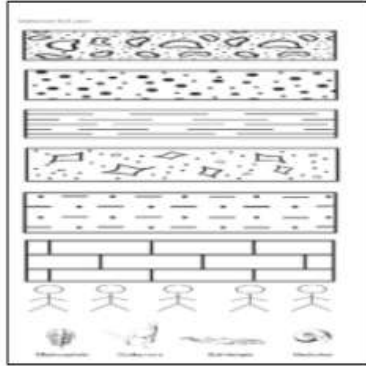
(Youngest)

Evidence & Reasoning

3

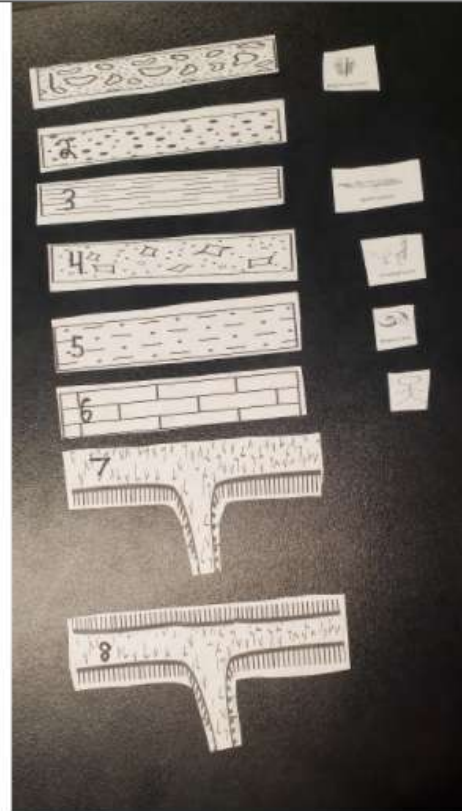


Do Now: Get materials and start cutting. One of each per GROUP!



**Cut and label.**

**Throw away scraps.**





# Agenda for 2/10 or 2/11

1. Do Now:
2. [Daily Spelling Bee Game](#)
3. Kindness Week/Make Good Choices
4. [Make It! Relative Dating Game](#)
5. Intermission
6. Out of the Ashes Video & Quiz



## Make It!

Using the Laws of relative dating to recreate rock outcrops



Out of the Ashes: Dawn of Mammals  
Video Quiz



Go to Google Classroom and Open the [Video quiz](#).  
Preview the questions...the film will start shortly.



## Out of the Ashes: Dawn of Mammals Video Quiz







# Complete the Video Quiz (Google Classroom)



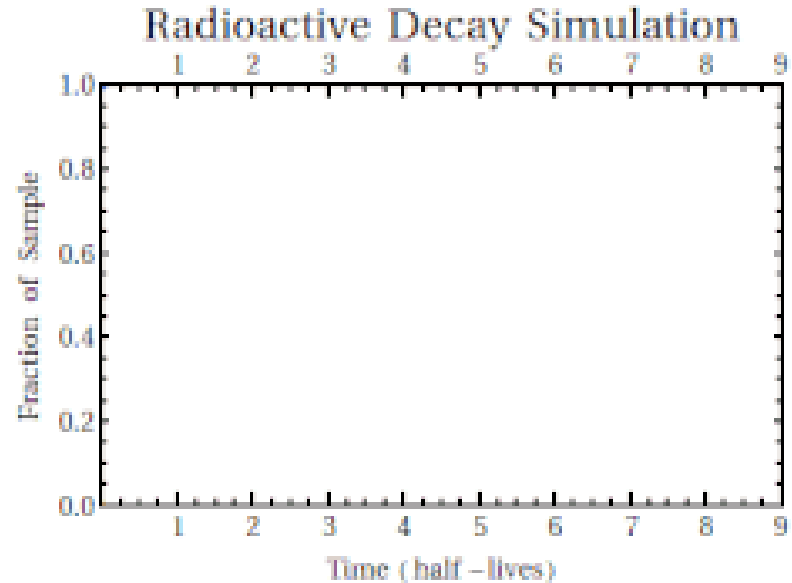
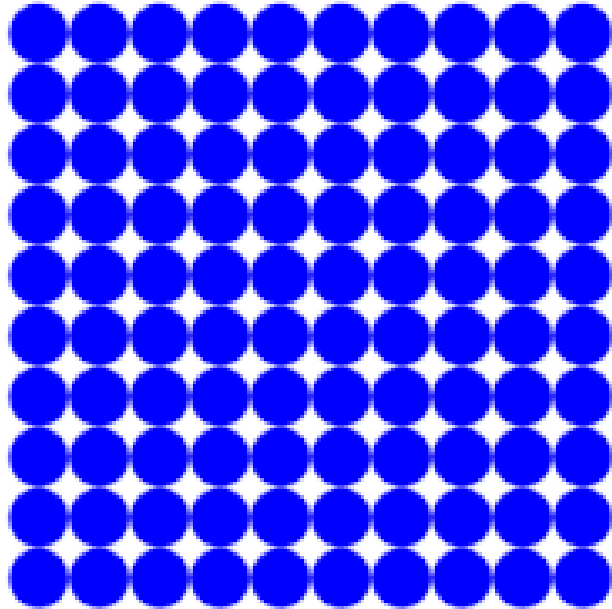
Out of the Ashes: Dawn of Mammals  
Video Quiz





Do Now: Observe the diagram below shows the process of radioactive decay. Describe the process.

Get the handouts!



= radioactive  
and unstable



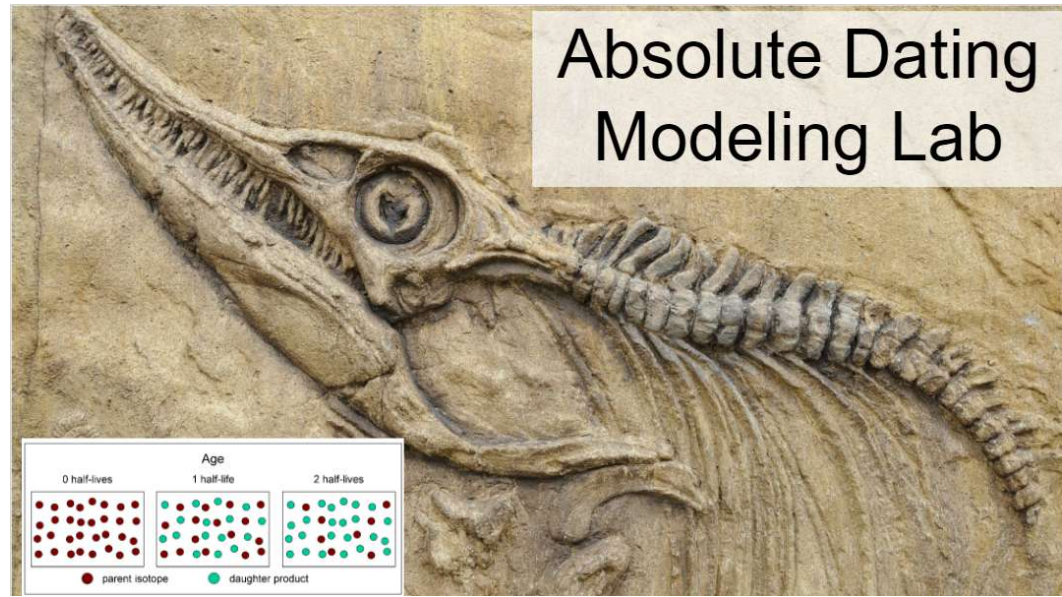
= stable and not  
radioactive





# Agenda for 2/14

1. Do Now: Half Life Diagram
2. [Daily Spelling Bee Game](#)
3. Reminders
4. Valentines Day Interim  
(Minute Earth & Infidelity)
5. [Absolute Dating Modeling](#)
  - a. Modeling
  - b. Graphing
  - c. Discussion Questions





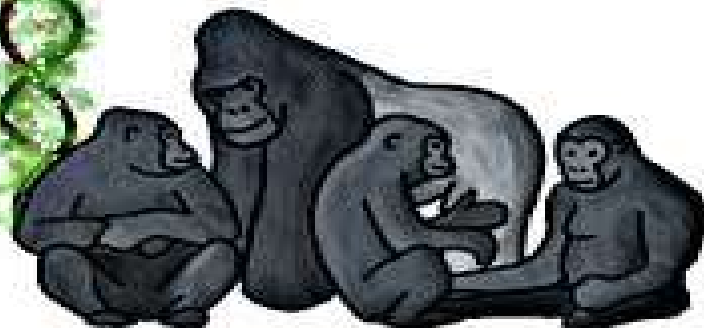
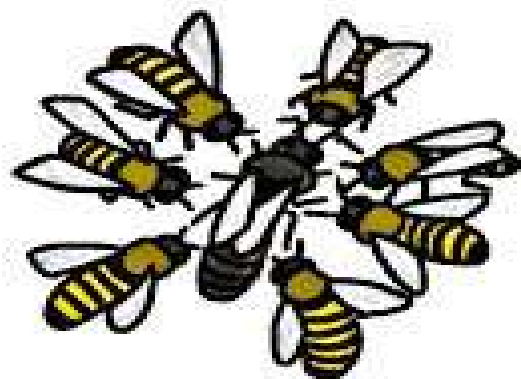
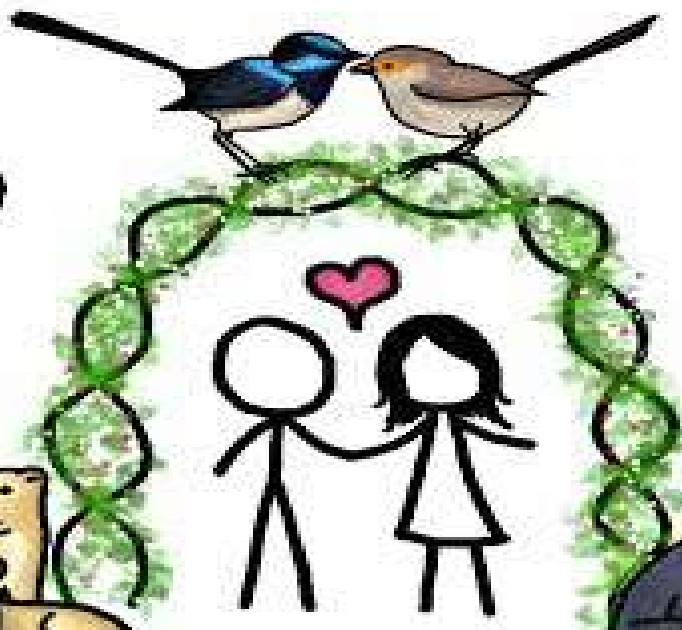
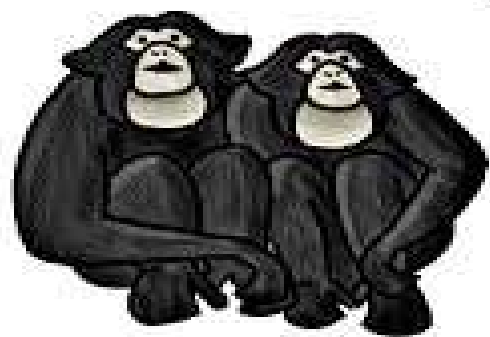
# Happy Valentines Day!

According to this video:

1. What is an evolutionary argument against monogamy?
2. What is an evolutionary argument for monogamy?

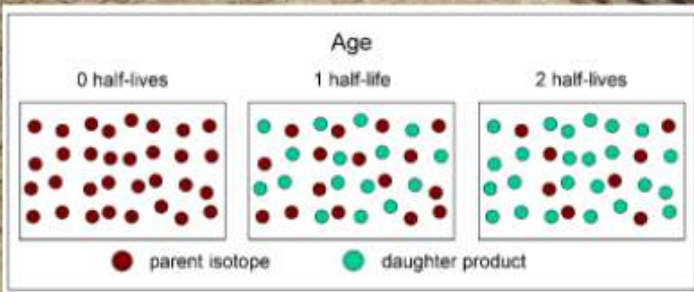








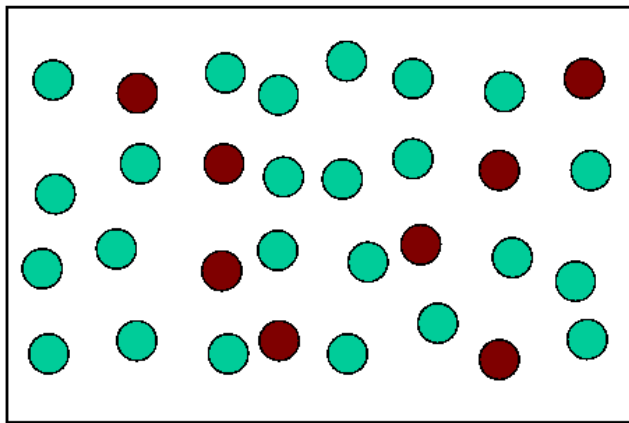
# Absolute Dating Modeling Lab



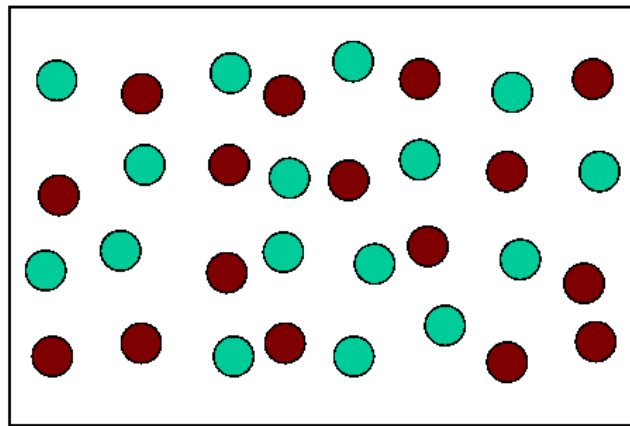


Do Now: Observe the two samples below. Which is older? Cite evidence for your claim.

***Sample A***



***Sample B***



● = Carbon-14

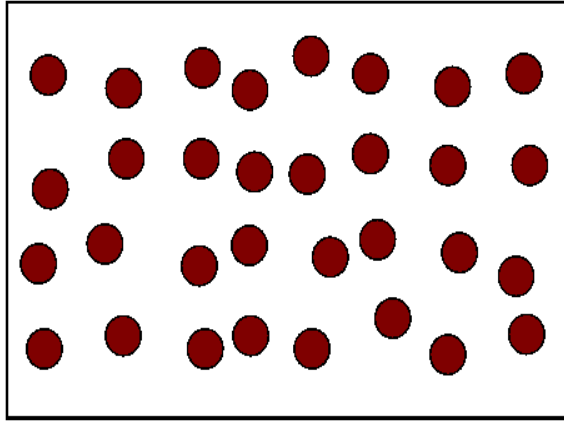
● = Nitrogen-14

*Bonus: How old are each?*

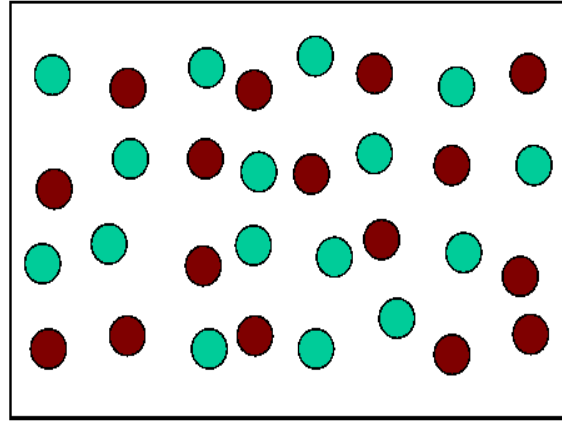




0 half-lives

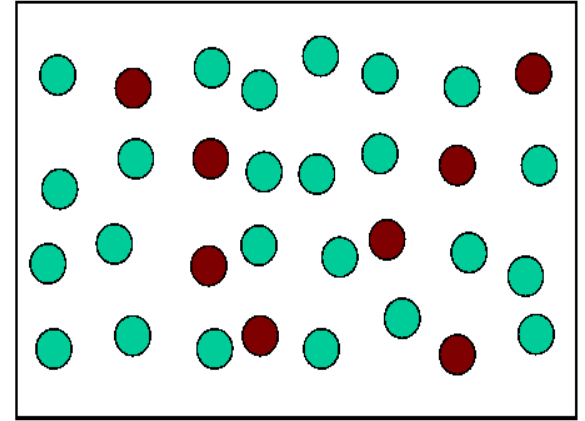


1 half-life



***Sample B***

2 half-lives



***Sample A***

 = Carbon-14

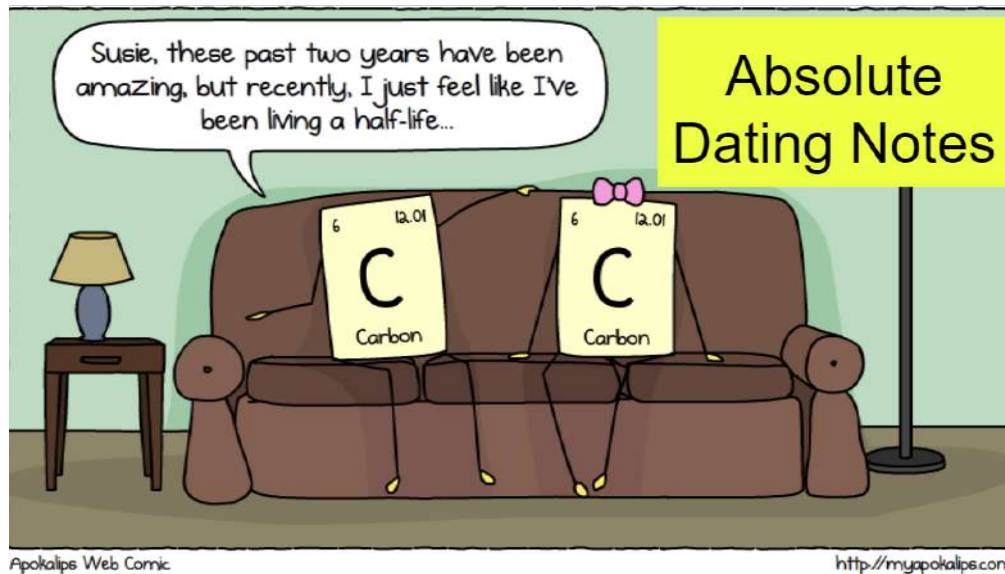
 = Nitrogen-14

*Bonus: How old are each?*



# Agenda for 2/15

1. Do Now:
2. [Daily Spelling Bee Game](#)
3. Complete pages 6 & 7 of the Guided Notes by using the [Absolute Dating Notes Slides](#).
4. Complete page 8 of the Guided Notes (Absolute Dating Practice)



**\*Unit 5 Quiz 1: Relative Dating will be posted this week.\***



**Absolute Dating Practice**

Instructions: Read the paragraph below. For each problem, write your answer in the space provided. Show your work.

Most elements found in nature are stable. They do not change over time. However, some elements are radioactive, meaning they are unstable and change into a different element over time. **Radioactive decay** is the name given to this process. If a sample of a radioactive element is known, scientists can determine how much of the original element remains in a sample. This is done by measuring the amount of the element that has decayed. Scientists can determine the age of a sample by using this information.

To determine the age of a sample using absolute dating, you must know two things. First, you must know the **half-life** of a radioactive isotope. The half-life is the time it takes for half of the sample to decay. Second, you must know the percentage of the original sample that remains in the sample. Knowing the percentage, you can determine how many half-lives the sample has gone through, and determine its age.

**Radioactive Decay Graph**

**Radioactive Decay Table**

Time (years)	Percentage of Original Sample
0	100%
250	50%
500	25%
750	12.5%
1000	6.25%

1. How does the amount of radioactive material change after each half-life?
2. What happens to the radioactive material after a decay? Does it disappear? Explain.
3. If a sample has 100% of its original radioactive material remaining, how many half-lives has it gone through?
4. If a sample has 75% of its original radioactive material remaining, how many half-lives has it gone through?
5. Suppose a sample has 62.5% of its original radioactive material remaining. How old would it be? Explain.

**Radioactive Decay Data**

RADIOACTIVE ISOTOPE	DATE	HALF-LIFE (years)
Carbon-14	$^{14}_6\text{C} \rightarrow ^{14}_7\text{N}$	$5.7 \times 10^3$
Potassium-40	$^{40}_{19}\text{K} \rightarrow ^{40}_{18}\text{Ar}$	$1.3 \times 10^9$
Uranium-238	$^{238}_{92}\text{U} \rightarrow ^{206}_{82}\text{Pb}$	$4.5 \times 10^9$
Radium-226	$^{226}_{88}\text{Ra} \rightarrow ^{222}_{86}\text{Rn}$	$1.6 \times 10^3$

Radioactive decay is the process by which an unstable atomic nucleus loses energy by emitting radiation. The rate at which this happens is called the half-life. The half-life of a radioactive isotope is the time it takes for half of the sample to decay. The half-life of a radioactive isotope is a constant value that does not change over time. The half-life of a radioactive isotope is a measure of the stability of the nucleus. The half-life of a radioactive isotope is a measure of the time it takes for the nucleus to decay. The half-life of a radioactive isotope is a measure of the time it takes for the nucleus to lose energy. The half-life of a radioactive isotope is a measure of the time it takes for the nucleus to become stable. The half-life of a radioactive isotope is a measure of the time it takes for the nucleus to become a different element. The half-life of a radioactive isotope is a measure of the time it takes for the nucleus to become a different isotope. The half-life of a radioactive isotope is a measure of the time it takes for the nucleus to become a different atom. The half-life of a radioactive isotope is a measure of the time it takes for the nucleus to become a different molecule. The half-life of a radioactive isotope is a measure of the time it takes for the nucleus to become a different compound. The half-life of a radioactive isotope is a measure of the time it takes for the nucleus to become a different substance. The half-life of a radioactive isotope is a measure of the time it takes for the nucleus to become a different material. The half-life of a radioactive isotope is a measure of the time it takes for the nucleus to become a different object. The half-life of a radioactive isotope is a measure of the time it takes for the nucleus to become a different entity. The half-life of a radioactive isotope is a measure of the time it takes for the nucleus to become a different being. The half-life of a radioactive isotope is a measure of the time it takes for the nucleus to become a different creature. The half-life of a radioactive isotope is a measure of the time it takes for the nucleus to become a different organism. The half-life of a radioactive isotope is a measure of the time it takes for the nucleus to become a different life form. The half-life of a radioactive isotope is a measure of the time it takes for the nucleus to become a different species. The half-life of a radioactive isotope is a measure of the time it takes for the nucleus to become a different genus. The half-life of a radioactive isotope is a measure of the time it takes for the nucleus to become a different family. The half-life of a radioactive isotope is a measure of the time it takes for the nucleus to become a different order. The half-life of a radioactive isotope is a measure of the time it takes for the nucleus to become a different class. The half-life of a radioactive isotope is a measure of the time it takes for the nucleus to become a different phylum. The half-life of a radioactive isotope is a measure of the time it takes for the nucleus to become a different kingdom. The half-life of a radioactive isotope is a measure of the time it takes for the nucleus to become a different domain. The half-life of a radioactive isotope is a measure of the time it takes for the nucleus to become a different universe. The half-life of a radioactive isotope is a measure of the time it takes for the nucleus to become a different multiverse. The half-life of a radioactive isotope is a measure of the time it takes for the nucleus to become a different dimension. The half-life of a radioactive isotope is a measure of the time it takes for the nucleus to become a different plane of existence. The half-life of a radioactive isotope is a measure of the time it takes for the nucleus to become a different realm. The half-life of a radioactive isotope is a measure of the time it takes for the nucleus to become a different world. The half-life of a radioactive isotope is a measure of the time it takes for the nucleus to become a different universe.

**Absolute Dating Practice**

1. The diagram below represents a sample of a radioactive isotope. Which diagram best represents the percentage of this radioactive isotope sample that will remain after 2 half-lives?

Explain your response below.

2. The graph below shows the radioactive decay of a 100-gram sample of a radioactive isotope. According to the graph, what is the half-life of this isotope?

Explain:

For the following questions, refer to the Radioactive Decay Data Chart on page 7.

3. If Carbon-14 goes through 2 half-lives...

- a. How many half-lives have gone by?
- b. What percentage of the original mass will remain?
- c. What happened to the rest of the Carbon?

4. If you begin with a 400-gram sample of Radium-226 and only 100 grams remain...

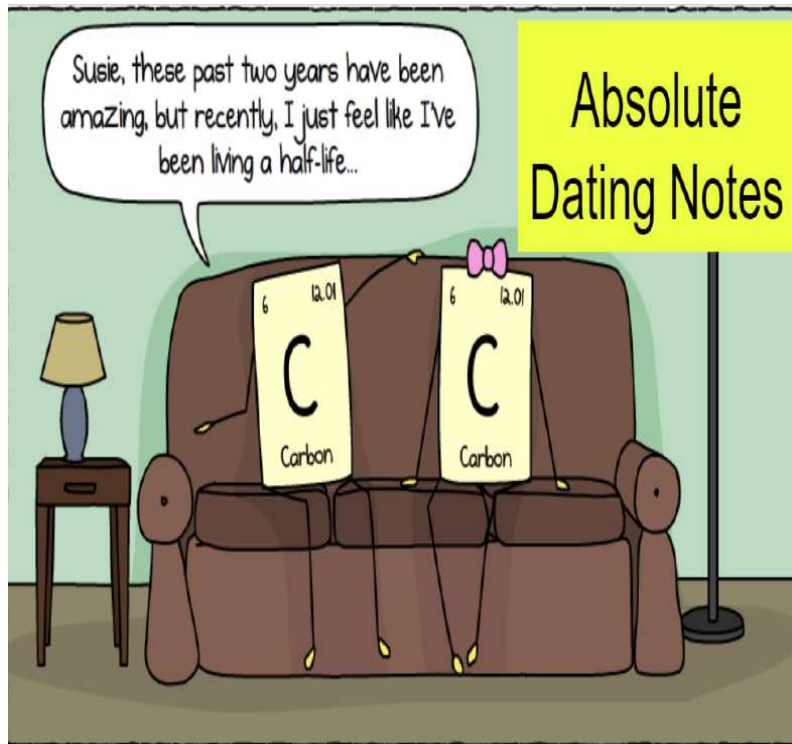
- a. How many half-lives have gone by?
- b. How old is the sample?

5. Which radioactive isotope would be best used in dating the following items:

- a. A buried tree stump:
- b. The oldest known rocks on Earth:



# This period: Use the Absolute Dating Notes Slides ([link](#)) to complete pages 6-8 of your Guided Notes.



**Absolute Dating (Guiding Activity)**

Instructions: Read the paragraph below. Pay close notice to underlines in the reading. They answer the questions that follow.

Minerals found in rocks are stable; they do not change over time. However, some elements are radioactive, meaning they are unstable and change into a different element over time. Radioactive decay is the transformation of unstable elements. Because unstable atoms happen very rarely, scientists use radioactive elements like clocks to measure the passage of time. By seeing how much of a particular element is in an object, and how much it has decayed, scientists can determine how old (or close to) it is for the object. This process is called absolute dating or radiometric dating.

To determine the age of a certain using absolute dating, you must know two things. First, you must know the half-life of a radioactive sample. The half-life is the time it takes a radioactive sample to decay 50%. Next, you must know the percentage of a radioactive material remaining in a sample. Knowing this percentage, you can determine how many half-lives the sample has gone through, and determine its age.

**Radioactive Decay Graph**

Number of Half-Lives

Percentage of Original Material Remaining

100% 50% 25% 12.5% 6.25% 3.125% 1.5625% 0.78125% 0.390625% 0.1953125% 0.09765625%

0 1 2 3 4 5 6 7 8 9 10

1. How does the amount of radioactive material change after each half-life?

2. What happens to the radioactive material after 5 half-lives (50% of original)?

3. If a sample has 25% of its original radioactive material remaining, how many half-lives has it gone through?

4. If a sample has 12.5% of its original radioactive material remaining, how many half-lives has it gone through?

5. Suppose a sample has 12.5% of its original Carbon-14 remaining. How old is it? Explain.

**Radioactive Decay Data**

The Radioactive Decay Data Table provides information about four radioactive isotopes used to date fossils and rock layers. Learn about the ages of these isotopes.

RADIOACTIVE ISOTOPE	DISINTEGRATION	HALF-LIFE (years)
Carbon-14	$^{14}_6\text{C} \rightarrow ^{14}_7\text{N}$	$5.7 \times 10^3$
Potassium-40	$^{40}_{19}\text{K} \rightarrow ^{40}_{18}\text{Ar}$	$1.3 \times 10^9$
Uranium-238	$^{238}_{92}\text{U} \rightarrow ^{206}_{82}\text{Pb}$	$4.5 \times 10^9$
Rubidium-87	$^{87}_{37}\text{Rb} \rightarrow ^{87}_{38}\text{Sr}$	$4.8 \times 10^{10}$

Notice that the disintegration column shows what the isotopes decay into. Carbon-14, for example, will become nitrogen-14 ( $^{14}_7\text{N}$ ). Also, notice that the half-life is given in scientific notation, an abbreviated way of writing a large number. If you were to calculate the half-life for Carbon-14, it would look like this:

$5.7 \times 10^3$  years =  $5.7 \times 1,000$  years = 5,700 years

The age of a sample can be determined by using the following steps:

1. Determine the half-life of the isotope.
2. Determine the percentage of the original material remaining in the sample.
3. Calculate the number of half-lives that have passed.
4. Calculate the age of the sample.

**Calculating the age of a sample**

Age = The number of half-lives  $\times$  the length of one half-life, and  $\text{Percent} = \frac{\text{Radioactive}}{\text{Total}} \times 100\%$

Let's look at an example. Suppose you find a bone and want to determine its age. When it was living, that bone had 100 grams of Carbon-14 in it. Now it has 25 grams left. How old is it? (Remember, one half-life of Carbon-14 is 5,700 years.)

Age = The number of half-lives  $\times$  the length of one half-life

100%  $\rightarrow$  25% = 2 half-lives (100%  $\rightarrow$  50%  $\rightarrow$  25%)

Age = 2 half-lives  $\times$  5,700 years per half-life = 11,400 years

1. A fossil is found to have 12.5% of its original Carbon-14 remaining. Determine its age. Show all work.

**Absolute Dating Practice**

1. The diagram below represents a sample of a radioactive isotope.

Which diagram best represents the percentage of this radioactive isotope sample that will remain after 2 half-lives?

1) 1/4 2) 1/2 3) 3/4 4) 1/8

2. The graph below shows the radioactive decay of a 50-gram sample of a radioactive isotope.

According to the graph, what is the half-life of this isotope?

Explanation:

For the following questions, refer to the Radioactive Decay Data Chart on page 7.

3. If Carbon-14 goes through 2 half-lives...

- a. How many years have gone by?
- b. What percentage of the original mass will remain?
- c. What happened to the rest of the Carbon?

4. If you begin with a 400 gram sample of Rubidium-87 and only 100 grams remain...

- a. How many half-lives have gone by?
- b. How old is the sample?

5. Which radioactive isotope would be best used in dating the following items:

- a. A buried tree stump?
- b. The oldest known rocks on Earth?

**Access these slides through the Google Classroom...ask if you need help.**





Do Now: Use the Whiteboard to create a question related to one of the skills listed below.

Other tables will try to answer your question.

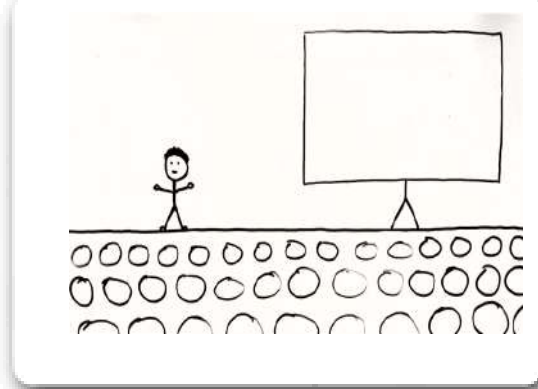
~~Stump the class and earn a point for your team.~~

1..Describe the concept of Uniformitarianism and contrast it with the concept of catastrophism.

2. Apply the principles of relative dating listed below to determine the order of events evident in a rock outcrop.

- Principle of Original Horizontality
- Principle of Superposition
- Principle of Crosscutting Relationships
- Principle of Included Fragments
- Principle of Faunal Succession

3. Identify whether a fossil would be a good index fossil based on the three qualities of index fossils.

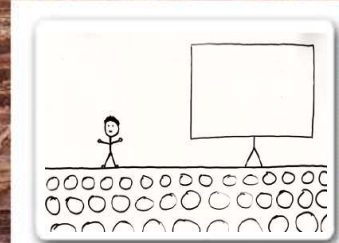




# Agenda for 2/16

1. Do Now: Create a Question
2. [Daily Spelling Bee Game](#)
3. [Write It on the Whiteboard: Relative Dating](#)

Write It on the  
Whiteboard Game:  
Relative Dating

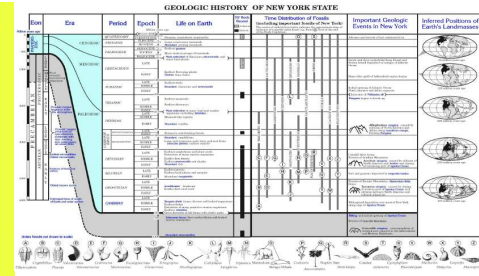


**\*Unit 5 Quiz 1:  
Relative Dating will  
be posted this week  
during Block.\***





Do Now: Use the chart on the last two pages of your guided notes to complete the sentences below.



The Phanerozoic \_\_\_\_\_ is made up of three eras: the \_\_\_\_\_,

the \_\_\_\_\_, and the \_\_\_\_\_.

Dinosaurs first appeared during the \_\_\_\_\_ period.

The last ice age occurred during the \_\_\_\_\_ epoch.





# Agenda for 2/17 or 2/18

1. Do Now:
2. Daily Spelling Bee Game
3. Video: Geologic Time Scale
4. Exploring the Anthropocene Activity
5. Intermission
6. Unit 5 Quiz 1: Relative Dating



**The Anthropocene: Human Impact on the Environment**  
Howard Hughes Medical Institute

**Impacts**

- Atmosphere
- Biodiversity
- Cities
- Coastal Habitats
- Farms
- Fossils
- Invasive Species
- Mining
- Oceans
- Water Use

**Epochs**

- Anthropocene
- Holocene
- Pleistocene

**Introduction**

Human activities are reshaping planet Earth in profound ways. Some activities, such as building dams, cutting forests, and converting natural lands into agricultural lands, directly affect the environment. But other effects of human activities are indirect, such as climate change resulting from greenhouse gas emissions, biodiversity loss resulting from taking over wild habitats, and altered coastal environments through increased agricultural runoff.

These changes have led scientists to propose a new geologic epoch named the Anthropocene, marked by extensive human impacts on the environment.

Every geologic epoch has distinguishing characteristics that often show up in the fossil record. What will characterize the fossil record of the Anthropocene? Our actions could determine whether the epoch is ultimately marked by diminishing biodiversity or even a mass extinction.

Use this interactive to explore key human impacts on the environment and what effects they have had over time. (For instructions on how to use the interactive, press on the "Help" tab.)



## Unit 5 Quiz 1: Relative Dating

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\* Required



Today you will be doing an activity exploring the Anthropocene epoch...but before you do that you should probably know a little bit about the geologic time scale. Let's watch a brief video on the next slide.







ROAR



# THE GEOLOGIC TIME SCALE

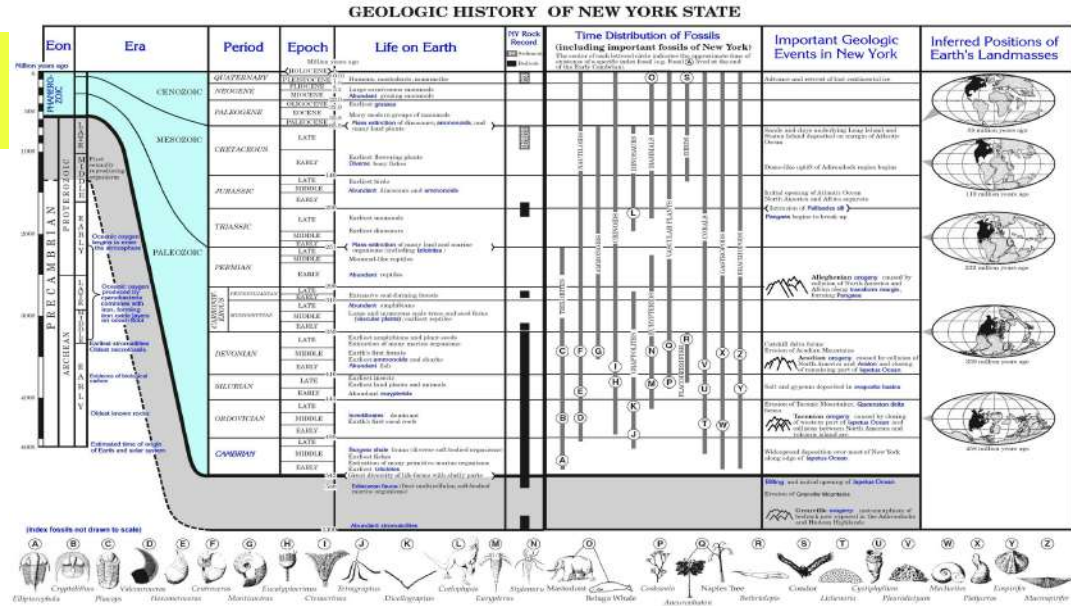


Let's review these!

The Phanerozoic Eon is made up of three eras: the Paleozoic, the Mesozoic, and the Cenozoic.

Dinosaurs first appeared during the Triassic period.

The last ice age occurred during the Pleistocene epoch.





# Complete the Exploring the Anthropocene Activity (Google Classroom)

## Anthropocene: Human Impact on the Environment

**Introduction:** In this activity by the Howard Hughes Medical Institute, you will learn about how humans are affecting global ecosystems. You will examine data that scientists use to determine whether we are entering a new geological time called the Anthropocene.

### Directions:

- Read the introduction talk on the right side of the screen.

In general, what is the Anthropocene epoch marked by?

- Fill in the table by clicking the links on the left side of the screen. (summarize)

Anthropocene	Begins with:  Characterized by:
Holocene	Begins with:  Characterized by:
Pleistocene	Begins with:  Characterized by:

- Click the box and add the checkmark next to the 'EPoCHS' link. This adds labels to the illustration showing all 3 epochs.

What looks different about the top rock layer, compared to the two below?  
(NOT color or thickness)

- Now you are going to explore the various 'Impacts'. Feel free to observe as many as you like. Choose 3 to record some notes about in the table.

## The Anthropocene: Human Impact on the Environment

Howard Hughes Medical Institute

### Impacts

Atmosphere  
Biodiversity  
Cities  
Coastal Habitats  
Farms  
Forests  
Invasive Species  
Mining  
Oceans  
Water Use

### Epochs

Anthropocene  
Holocene  
Pleistocene

Introduction

### Introduction

Human activities are reshaping planet Earth in profound ways. Some activities, such as building dams, cutting forests, and converting natural lands into agricultural lands, directly affect the environment. But other effects of human activities are indirect, such as climate change resulting from greenhouse gas emissions, biodiversity loss resulting from taking over wild habitats, and altered coastal environments through increased agricultural runoff.

These changes have led scientists to propose a new geologic epoch named the Anthropocene, marked by extensive human impacts on the environment.

Every geologic epoch has distinguishing characteristics that often show up in the fossil record. What will characterize the fossil record of the Anthropocene? Our actions could determine whether the epoch is ultimately marked by diminishing biodiversity or even a mass extinction.

Use this interactive to explore key human impacts on the environment and what effects they have had over time. (For instructions on how to use the interactive, press on the "Help" tab.)



This period, complete the Unit 5 Quiz 1: Relative Dating



## Unit 5 Quiz 1: Relative Dating

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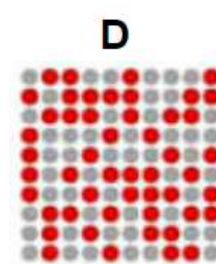
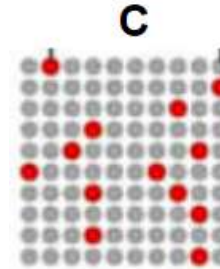
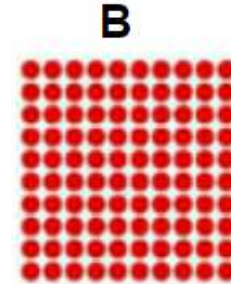
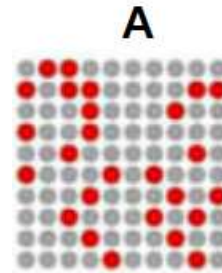
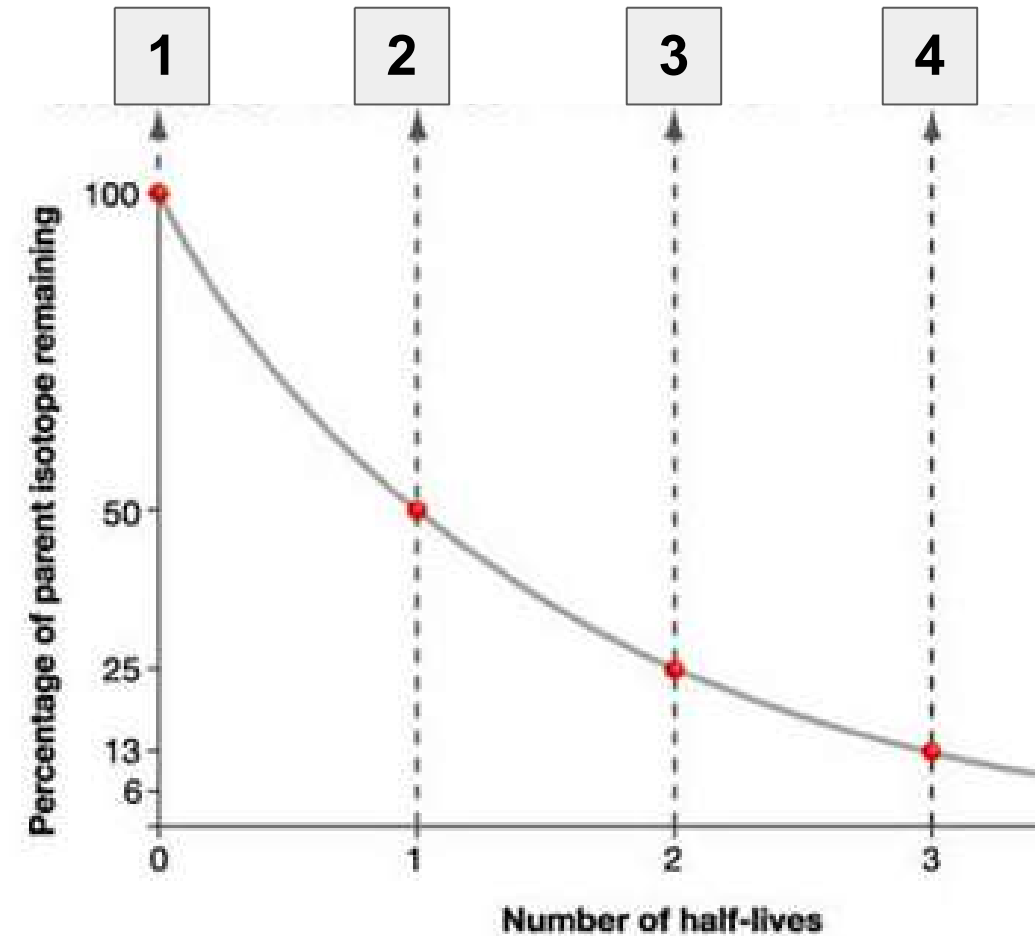
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\* Required



Do Now: Match the pictures with their place on the graph.

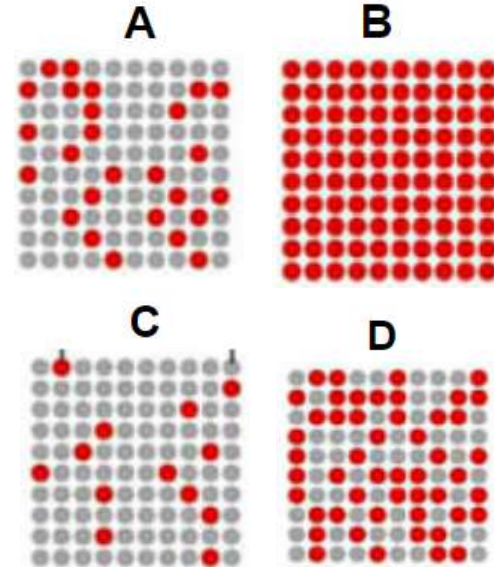
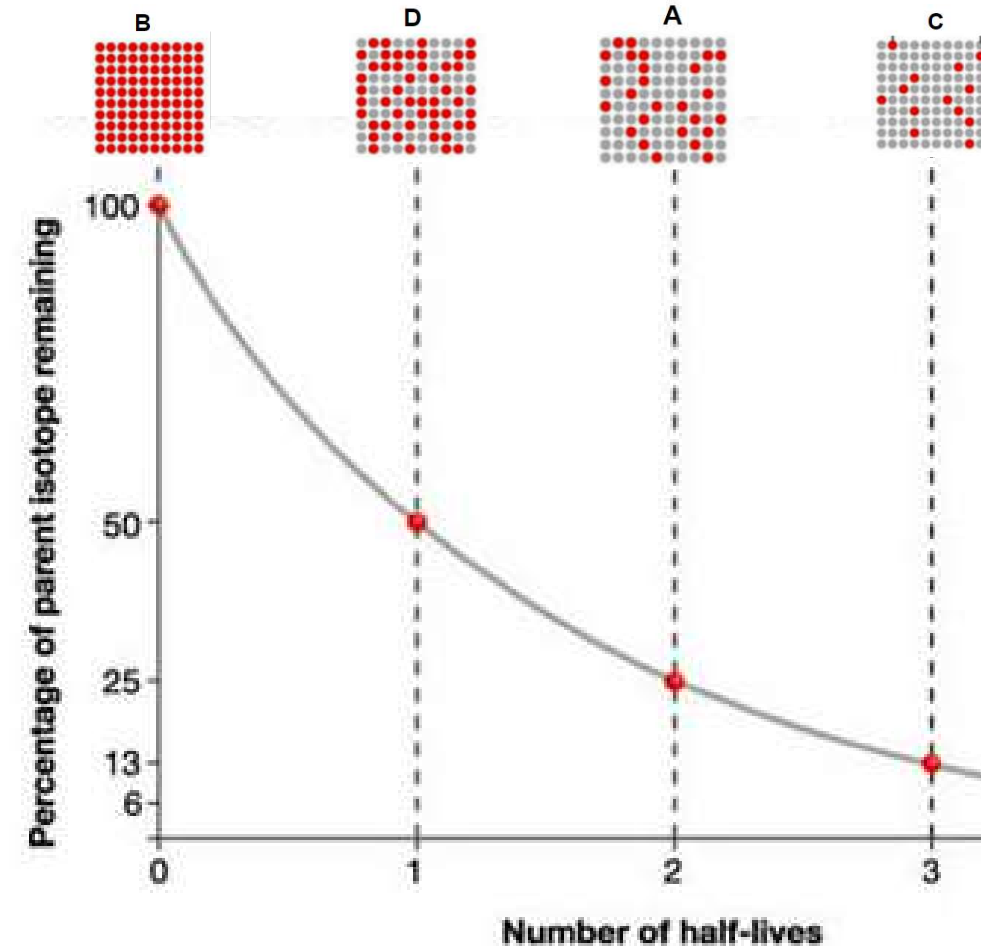
● = radioactive  
● = decay product





Match the pictures with their place on the graph.

● = radioactive  
● = decay product



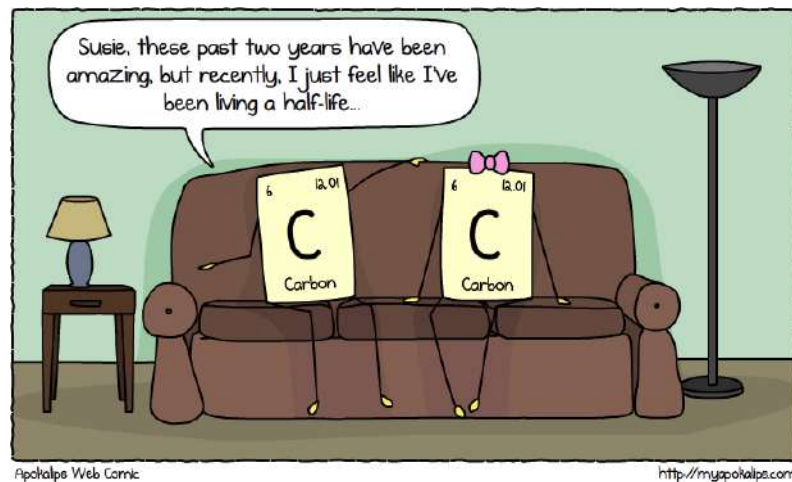


# Agenda for 2/22

1. Do Now: Absolute Dating Matching
2. [Daily Spelling Bee Game](#)
3. Regarding Tomorrow...
4. Absolute Dating Practice Reviewed  
(Page 11 of the Guided Notes)
5. Absolute dating Blooket Review

\*Unit 5 Quiz 1 will be graded tomorrow.\*

\*Unit 5 Quiz 2: Absolute Dating posted  
this week during Block period.\*





# Let's review the Absolute Dating Practice on page 11...


Absolute Dating Practice

1. The diagram below represents a sample of a radioactive isotope.

Which diagram best represents the percentage of this radioactive isotope sample that will remain after 2 half-lives?


Explain your response below.


Sample before decay





Key

- Radioactive isotope
- Decay product

(1) 

(2) 

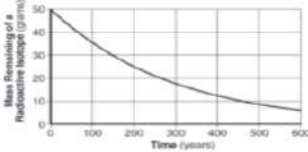
(3) 

(4) 

2. The graph below shows the radioactive decay of a 50-gram sample of a radioactive isotope.

According to the graph, what is the half-life of this isotope?

\_\_\_\_\_ Explanation:



Time (years)	Mass Remaining (grams)
0	50
100	40
200	30
300	20
400	15
600	10

For the following questions, refer to the Radioactive Decay Data Chart on page 7.

3. If Carbon-14 goes through 2 half-lives...

- How many years have gone by? \_\_\_\_\_
- What percentage of the original mass will remain? \_\_\_\_\_
- What happened to the rest of the Carbon? \_\_\_\_\_

4. If you begin with a 400 gram sample of Rubidium-87 and only 100 grams remain...

- How many half-lives have gone by? \_\_\_\_\_
- How old is the sample? \_\_\_\_\_

5. Which radioactive isotope would be best used in dating the following items:

- A buried tree stump: \_\_\_\_\_
- The oldest known rocks on Earth: \_\_\_\_\_

8

*FYI:*

*This week's  
quiz will be on  
this topic.*

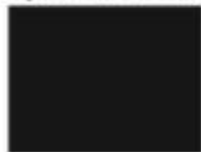




## Absolute Dating Practice

1. The diagram below represents a sample of a radioactive isotope.

Which diagram best represents the percentage of this radioactive isotope sample that will remain after 2 half-lives?

Sample before decay



Key	
	Radioactive isotope
	Decay product

Explain your response below.



(1)



(2)



(3)



(4)

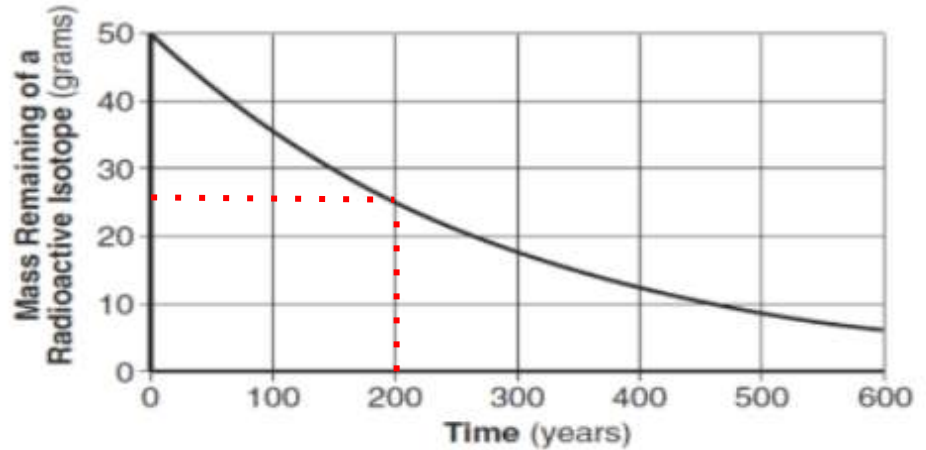
**After 2 half lives, there will be 25% of the radioactive sample left.**



2. The graph below shows the radioactive decay of a 50-gram sample of a radioactive isotope.

According to the graph, what is the half-life of this isotope?

**200 years** Explanation:



**A half life is the time it takes for a radioactive sample to decay by 50%.**



For the following questions, refer to the Radioactive Decay Data Chart on page 7.

3. If Carbon-14 goes through 2 half-lives...

a. How many years have gone by? **11,400 years**

b. What percentage of the original mass will remain? **25%**

c. What happened to the rest of the Carbon? **It became Nitrogen-14**

Radioactive Decay Data

RADIOACTIVE ISOTOPE	DISINTEGRATION	HALF-LIFE (years)
Carbon-14	$^{14}\text{C} \rightarrow ^{14}\text{N}$	$5.7 \times 10^3$
Potassium-40	$^{40}\text{K} \rightarrow ^{40}\text{Ar}$ $^{40}\text{K} \rightarrow ^{40}\text{Ca}$	$1.3 \times 10^9$
Uranium-238	$^{238}\text{U} \rightarrow ^{206}\text{Pb}$	$4.5 \times 10^9$
Rubidium-87	$^{87}\text{Rb} \rightarrow ^{87}\text{Sr}$	$4.9 \times 10^{10}$



4. If you begin with a 400 gram sample of Rubidium-87 and only 100 grams remain...

a. How many half-lives have gone by? **2 half lives**

b. How old is the sample?  **$9.8 \times 10^{10}$  years**

### Radioactive Decay Data

RADIOACTIVE ISOTOPE	DISINTEGRATION	HALF-LIFE (years)
Carbon-14	$^{14}\text{C} \rightarrow ^{14}\text{N}$	$5.7 \times 10^3$
Potassium-40	$^{40}\text{K} \begin{matrix} \nearrow ^{40}\text{Ar} \\ \searrow ^{40}\text{Ca} \end{matrix}$	$1.3 \times 10^9$
Uranium-238	$^{238}\text{U} \rightarrow ^{206}\text{Pb}$	$4.5 \times 10^9$
Rubidium-87	$^{87}\text{Rb} \rightarrow ^{87}\text{Sr}$	$4.9 \times 10^{10}$



5. . Which radioactive isotope would be best used in dating the following items:

a. A buried tree stump: **C-14 (because of its short half life and organic material)**

b. The oldest known rocks on Earth: **Uranium-238 (long half life)**

Radioactive Decay Data

RADIOACTIVE ISOTOPE	DISINTEGRATION	HALF-LIFE (years)
Carbon-14	$^{14}\text{C} \rightarrow ^{14}\text{N}$	$5.7 \times 10^3$
Potassium-40	$^{40}\text{K} \begin{cases} \rightarrow ^{40}\text{Ar} \\ \rightarrow ^{40}\text{Ca} \end{cases}$	$1.3 \times 10^9$
Uranium-238	$^{238}\text{U} \rightarrow ^{206}\text{Pb}$	$4.5 \times 10^9$
Rubidium-87	$^{87}\text{Rb} \rightarrow ^{87}\text{Sr}$	$4.9 \times 10^{10}$



Let's play!





# I hoped you learned something...don't forget:

- Unit 5 Quiz 1: Relative Dating is posted. Grades will go in this week.
- Unit 5 Quiz 2: Absolute Dating will be posted this week. Questions will be similar to today's game. Make sure you have completed up to page 8 of the Guided Notes.



## Unit 5 Quiz 1: Relative Dating

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Your email will be recorded when you submit this form

\* Required



## Unit 5 Quiz 2: Absolute Dating

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\* Required



# Agenda for 2/23

Today in class, you can do the following:

1. Do/Redo Unit 5 Quiz 1: Relative Dating
2. Do/Redo Unit 4 Quiz 1: Weathering & Friends
3. Do/Redo Weathering Scavenger Hunt
4. Do/Redo Out of the Ashes Quiz (Period 2 & 6 only)

\*Links can be found in Google Classroom

\*Check your email for “Missing Assignments email from your teacher.\*



## Unit 5: Earth's History

- |   |               |
|---|---------------|
| Unit 5 Quiz 1: Relative Dating                  | Posted Feb 18 |
| Anthropocene Activity                           | Due Feb 18    |
| Out of the Ashes Video Quiz                     | Posted Feb 11 |
| Unit 5 Guided Notes and Link to the Unit 5 S... | Posted Feb 8  |

## Unit 4: Weathering & Friends

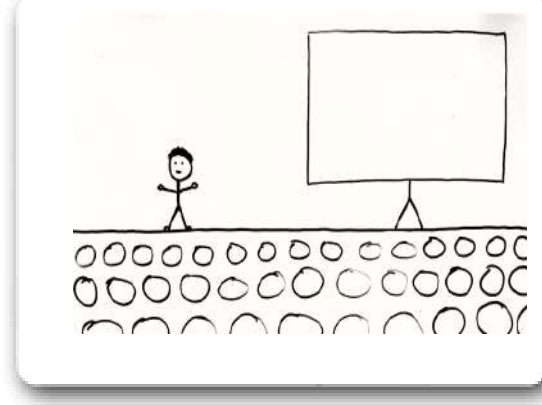
- |                                       |            |
|---------------------------------------|------------|
| Weathering and Friends Scavenger Hunt | Due Jan 31 |
| Unit 4 Quiz 1: Weathering & Friends   | Due Jan 30 |



Do Now: Use the Whiteboard to create a question related to one of the skills listed below.

Other tables will try to answer your question.

Stump the class and earn a point for your team.



**Use absolute dating (radiometric dating) to determine the age of a rock sample.**





# Agenda for 2/24

1. Do Now:
2. [Daily Spelling Bee Game](#)
3. [Write It on the Whiteboard: Absolute Dating](#)
4. In Class Break
5. Unit 5 Quiz 2: Absolute Dating posted

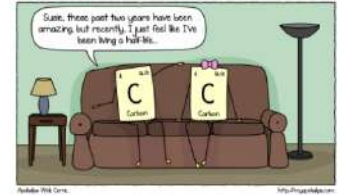
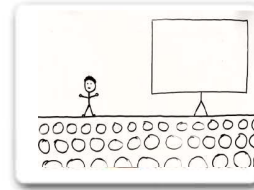
**Unit 5 Quiz 1 has been graded.**

**Email if you do it late.**

**Unit 5 Test next week**



## Write It on the Whiteboard Game: Absolute Dating



Unit 5 Quiz 2: Absolute Dating



# This period, complete the Unit 5 Quiz 2: Absolute Dating

- Use your notes to complete the quiz.
- Scores will be released at the end of the day.
- Grades will be put into Infinite Campus next week.
- You only need to email me if you do/redo this assignment AFTER grades have been posted into Infinite Campus.

MISSING grades will go in for students who don't complete the



## Unit 5 Quiz 2: Absolute Dating

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Your email will be recorded when you submit this form

\* Required





# Stuff you can be working on now...

Unit 5 Quiz 2: Absolute Dating

Unit 5 Quiz 1: Relative Dating

Out of the Ashes Video Quiz

Unit 4 Quiz: Weathering & Friends

Weathering Scavenger Hunt

Access on Google Classroom



Unit 5 Quiz 2: Absolute Dating



Unit 5 Quiz 1: Relative Dating



Unit 4 Quiz 1: Weathering & Friends

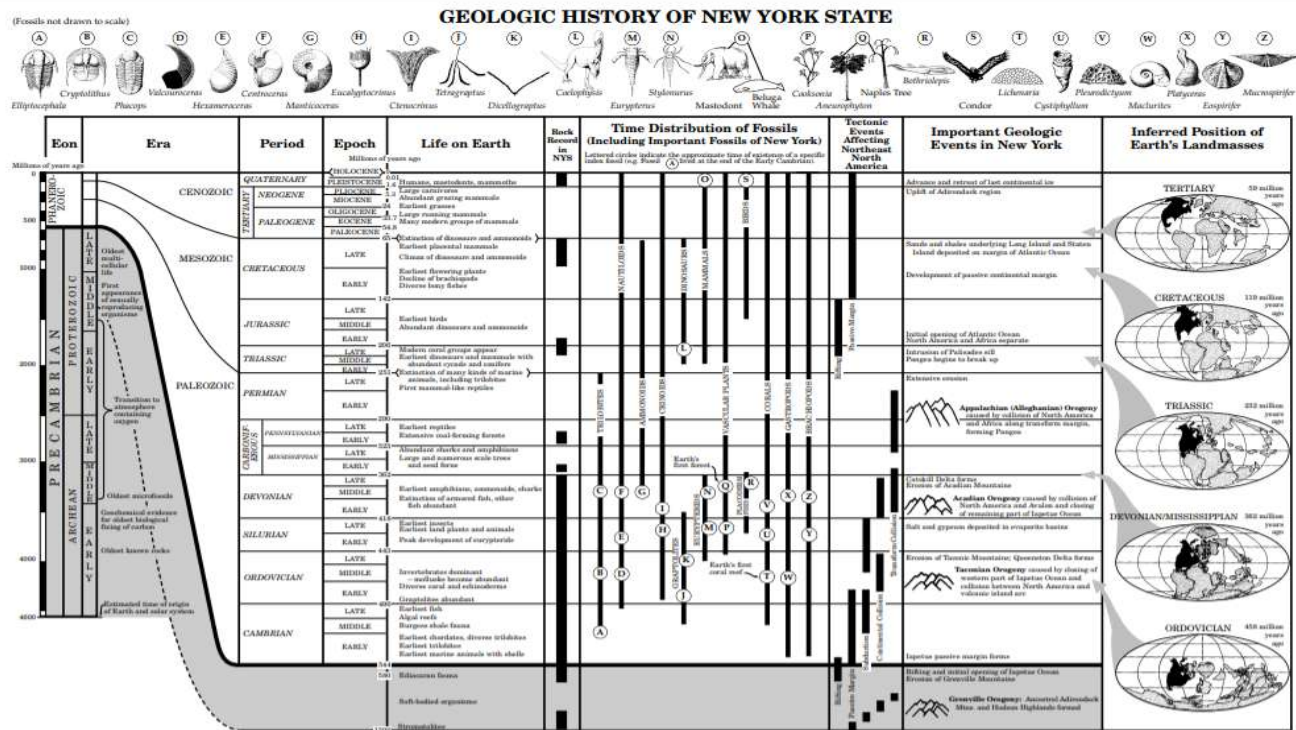


Out of the Ashes: Dawn of Mammals  
Video Quiz





# Do Now: Open your guided notes to pages 12 & 13.



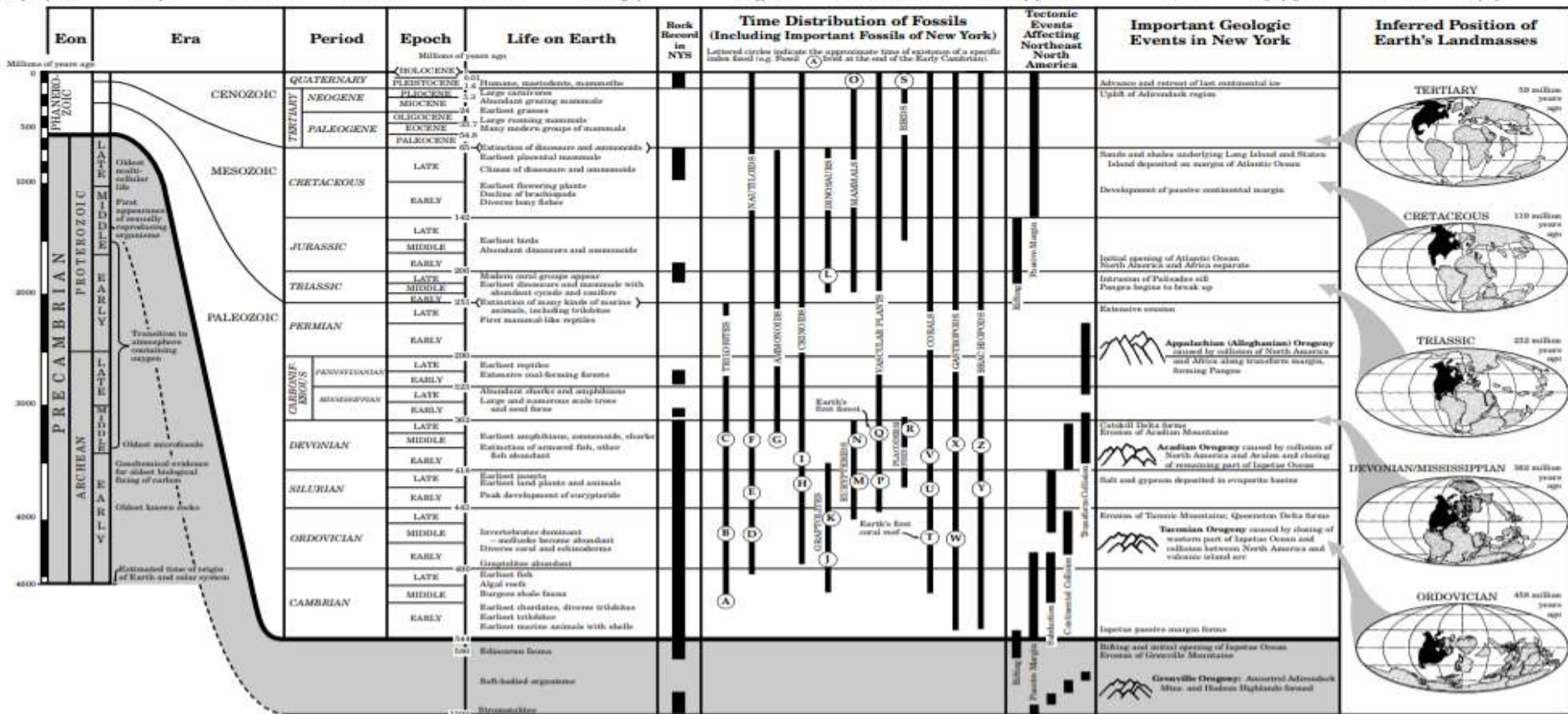
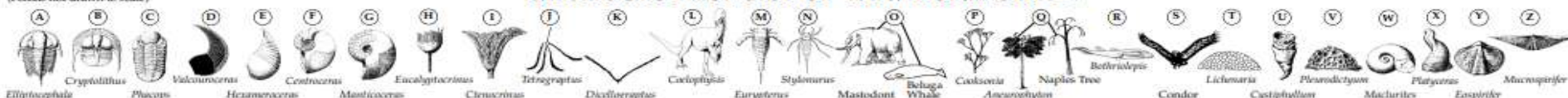
At your table, create Two truths and a lie based on this chart. USE THE WHITEBOARD.



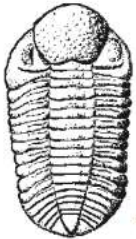

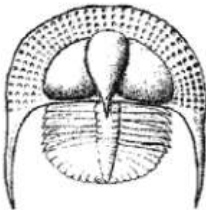


(Fossils not drawn to scale)

## GEOLOGIC HISTORY OF NEW YORK STATE

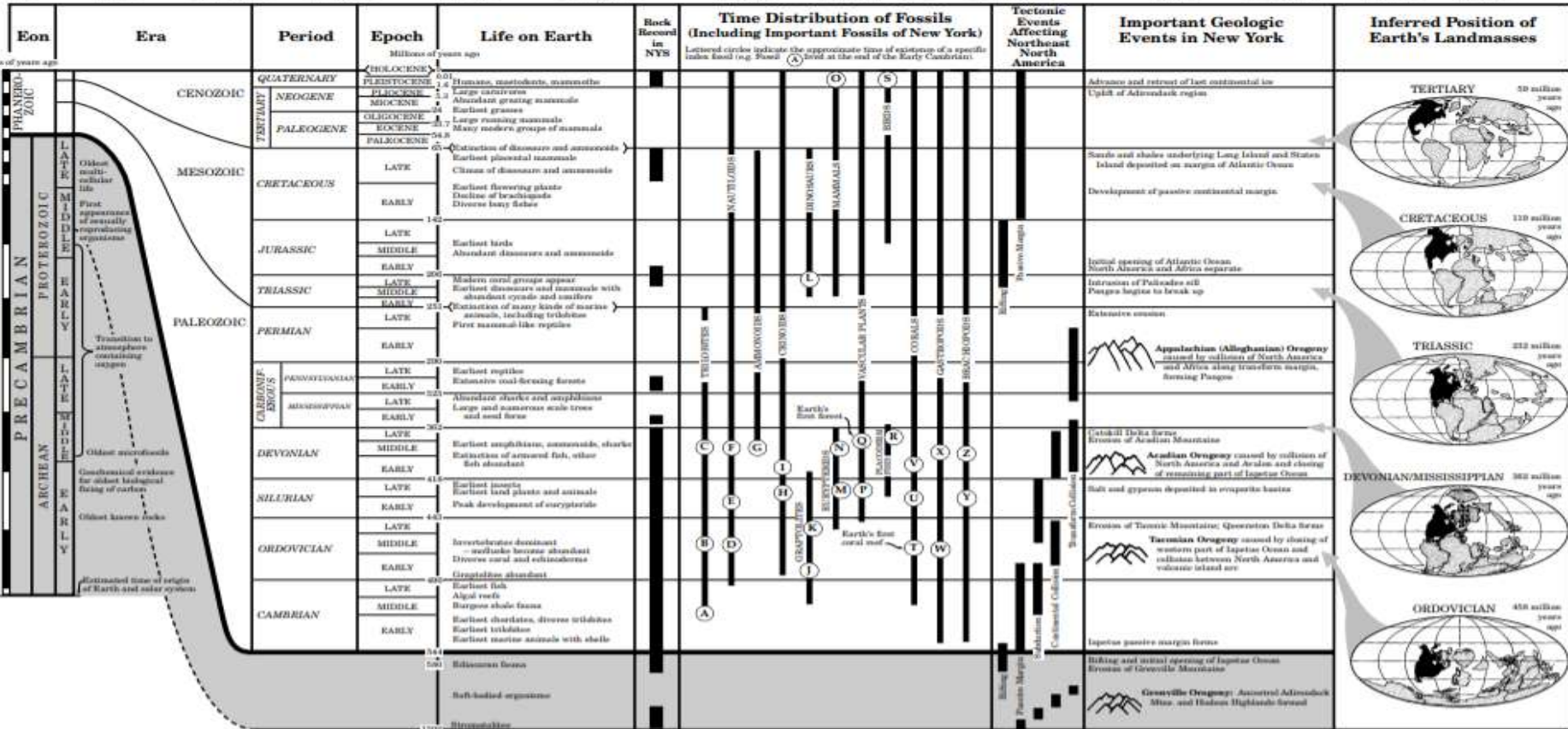




#	Statement	Truth or Lie
1	This is a trilobite 	Truth
2	This is a trilobite 	Lie
3	This is a trilobite 	Truth



# GEOLOGIC HISTORY OF NEW YORK STATE





#	Statement	Truth or Lie
1	An epoch is longer than an eon.	Lie
2	An Era is longer than a period.	Truth
3	The Paleozoic Era was longer than the Mesozoic Era.	Truth



# Agenda for 2/28

1. Do Now: Two Truths and a Lie Game
2. [Daily Spelling Bee](#)
3. Video: Geologic Time on a Football Field.
4. Geologic History Scavenger Hunt
  - a. Complete pages 9 & 10 of the Guided Notes using the chart on pages 12 & 13.



**Unit 5 Quiz 2 grades go in today.**

**Unit 5 Test Wednesday!**



**This period: Complete pages 9 & 10 of the Guided Notes using the chart on pages 12 & 13.**

**Geologic History Scavenger Hunt**

The Earth has been around for 4.5 billion years. Use the chart on the left page to answer the questions below and complete pages 9 & 10 of the Guided Notes.

Part 1: A map of time... Complete this paragraph by filling in the blanks:

The Geologic History chart is divided into different time intervals. The largest time interval is the \_\_\_\_\_, which includes the Precambrian and the Phanerozoic. The largest time interval within the Phanerozoic era was formerly the \_\_\_\_\_, the \_\_\_\_\_, and the \_\_\_\_\_. Each era is then divided into \_\_\_\_\_, which are again divided into \_\_\_\_\_. Which time interval is older? Circle the one that is older and then write approximately when the older one began.

Which is older? Circle it.	When did the older one begin? (200M)
Precambrian period or Phanerozoic period	
Phanerozoic period or Precambrian period	
Phanerozoic period or Precambrian period	

Part 2: Life happens... For each of the events listed, tell which time period it occurred in and give a brief description.

Event	Time period	Age (approx.)
First eukaryotic plants		
First eukaryotic animals		
The first life		
The first mammal		
The first dinosaur		

Let one major event pertaining to life on Earth that occurred during each of the following periods.

Period	Event
Precambrian	
Phanerozoic	
Life	
Life	
Life	

Part 3: Something else... What are three things that you can learn from this chart? Be specific and do not repeat information from the previous parts.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

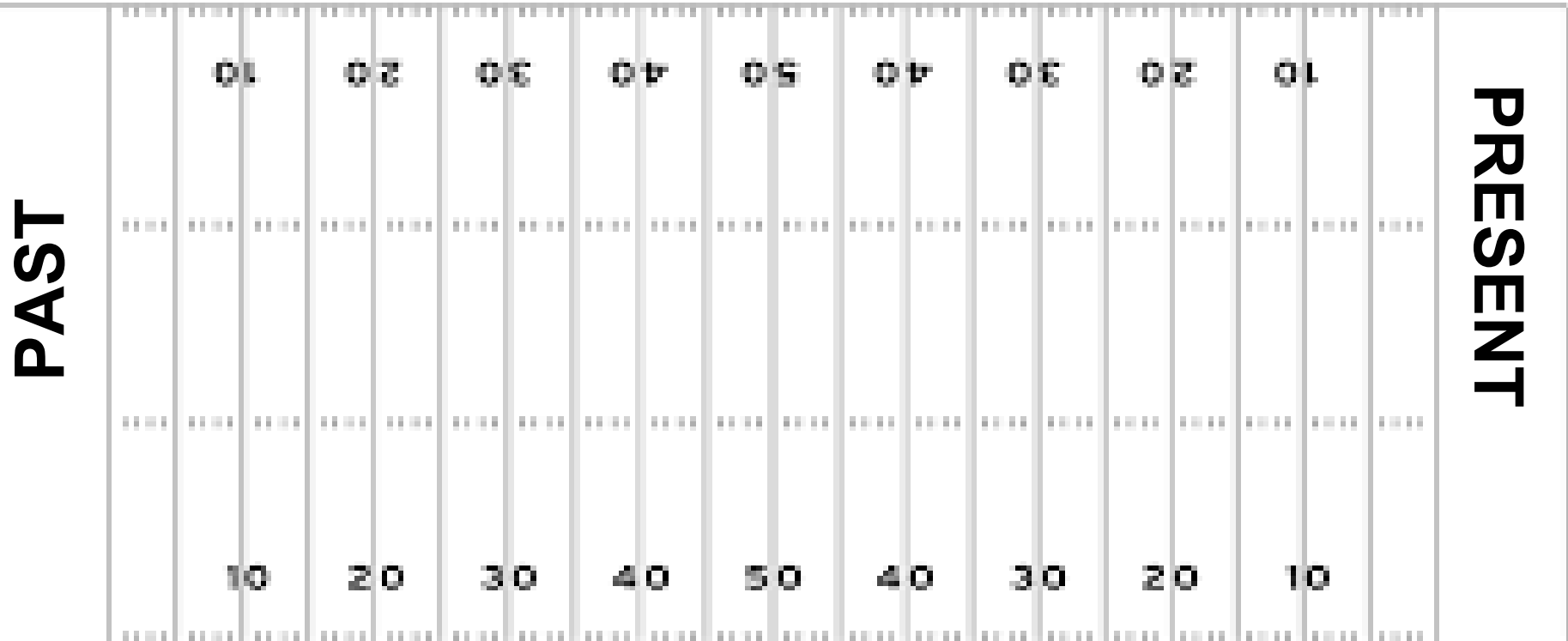
**Geologic History of Earth Timeline**

*Ask for help if you need it.*

*Show me completed work.*



Draw a football field on your whiteboard. Label one end zone "PAST" and the other "PRESENT". This will represent the entire history of the Earth.





Predict where these Earth events would take place on the field. Write the letters in.

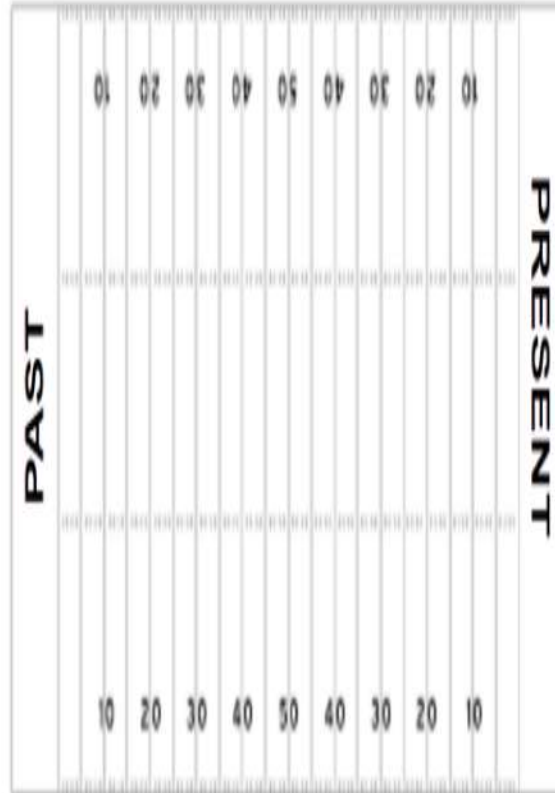
Letter	Event
A	First life on Earth
B	First Multicellular Organism
C	Start of Photosynthesis
D	First Dinosaur
E	First Human





As we watch this film, see how accurate your predictions were.

Letter	Event
A	First life on Earth
B	First Multicellular Organism
C	Start of Photosynthesis
D	First Dinosaur
E	First Human





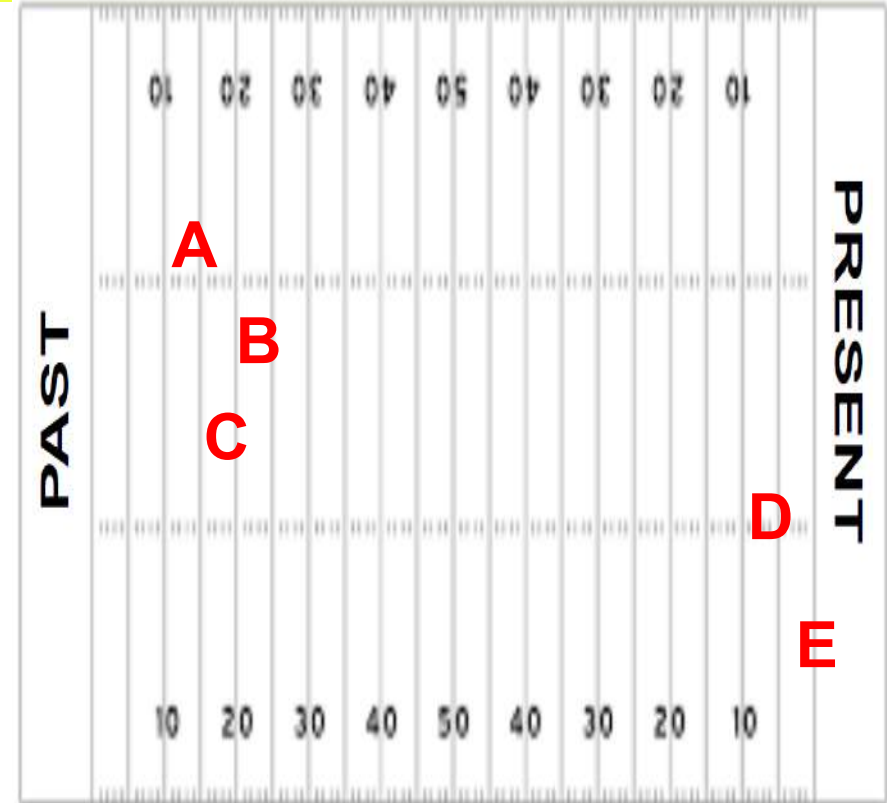
# EARTH'S HISTORY





# Earth's History on a Football Field Predictions reviewed

Letter	Event
A	First life on Earth
B	First Multicellular Organism
C	Start of Photosynthesis
D	First Dinosaur
E	First Human





# This period: Complete pages 9 & 10 of the Guided Notes using the chart on pages 12 & 13.

## Geologic History Scavenger Hunt

The Earth has been around for 4.5 billion years. Use the chart on the last pages to answer the questions below, and hopefully learn a bit about what has happened.

Part 1: A matter of time...Complete this paragraph by filling in the blanks:

The Geologic History chart is divided into different time intervals. The largest time interval is the \_\_\_\_\_, which include the Phanerozoic and the Precambrian. This largest time interval is then further divided into eras, namely the \_\_\_\_\_, the \_\_\_\_\_, and the \_\_\_\_\_. Each era is then divided into \_\_\_\_\_, which are again divided into \_\_\_\_\_.

Which time interval is older? Circle the one that is older and then write approximately when the older one began.

Which is older? (Circle it)	When did the older one begin? (MYA)
Devonian period or Ordovician Period	
Triassic or Jurassic Period	
Mesozoic Era or the Silurian Period	
Early Proterozoic Eon or Devonian Period	




Part 2: Life happens...for each of the events listed, tell which time period it occurred in and age (mya).




Event	Time period	Age (mya)
Earliest flowering plants		
Mass extinction of dinosaurs		
The first fish		
The first mammal		
The first human		

List one major event pertaining to life on Earth that occurred during each of the following epochs.

Epoch	Event
Pleistocene	
Late Mississippian	
Late Cambrian	
The first mammal	
Early Cretaceous	

Part 3: Indexing... List the names of the following index fossils in order from oldest to youngest.





  
  


Oldest

↓

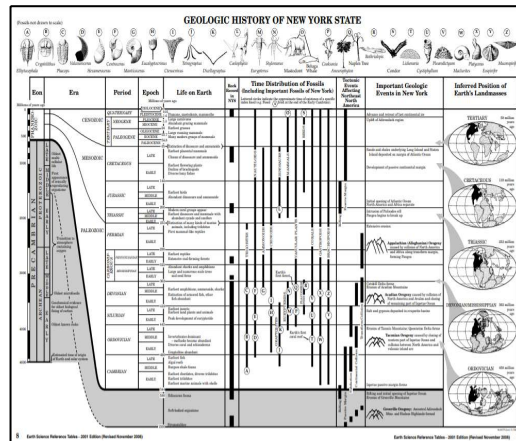
Youngest


List the age of the following index fossils in millions of years (mya) and the group of organisms that it belongs to (as listed vertically on the black lines).

	Age: _____	Type: _____		Age: _____	Type: _____
	Age: _____	Type: _____		Age: _____	Type: _____

Part 4: Something else. What are three things that you can learn from this chart? Be specific and do not repeat information from the previous parts.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_



Ask for help if you need it.

Show me completed work.



# Stuff you can be working on now...that is making up your grade

Unit 5 Quiz 2: Absolute Dating

Unit 5 Quiz 1: Relative Dating

Out of the Ashes Video Quiz

Unit 4 Quiz: Weathering & Friends

Weathering Scavenger Hunt

Access on Google Classroom



Unit 5 Quiz 2: Absolute Dating



Unit 5 Quiz 1: Relative Dating



Unit 4 Quiz 1: Weathering & Friends



Out of the Ashes: Dawn of Mammals  
Video Quiz





Do Now!

Get a [Bingo Card](#) from the Google Classroom

At your table create a sentence using two or more of the Bingo words.

Your sentence should show that you know the meanings of the words you have used.

Be prepared to share out!

## Unit 5 Bingo: Earth's History

Principle of Included Fragments	absolute dating	intrusion	uniformitarianism
half life	unconformity	Principle of Superposition	Principle of Faunal Succession
catastrophism	faulting	Principle of Crosscutting Relationships	index fossil
extrusion	folding	Principle of Original Horizontality	relative dating

myfreebingocards.com





# Mr. Sullivan's Examples

*Crosscutting states that intrusions and faults are younger than the rock that they cut through.*

*Absolute Dating uses the half life of radioactive material to determine the age of a rock sample.*



# Agenda for 3/1

1. Do Now:
2. [Daily Spelling Bee](#)
3. [Unit 5 Earth's History Bingo](#)
4. How to answer Geologic History Questions
5. Geologic History Blooket



## Unit 5 Test Tomorrow! Study!

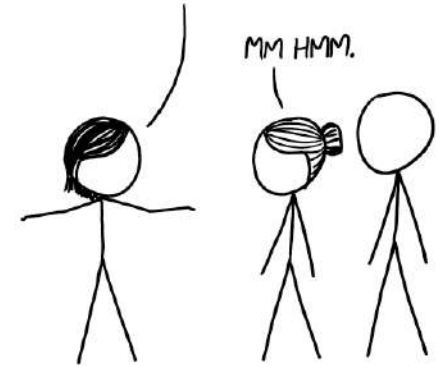


IMAGINE EARTH'S HISTORY AS A FOOTBALL FIELD, FROM THE PLANET'S FORMATION AT ONE END TO TODAY AT THE OTHER.

COMPLEX LIFE WOULD BE LARGELY LIMITED TO THE FINAL TEN YARDS. DINOSAURS APPEAR AT THE FIVE-YARD LINE, THE AGE OF MAMMALS HAPPENS IN THE LAST 1½ YARDS, AND HUMANS ARISE IN THE FINAL FEW MILLIMETERS.

ALL OF WRITTEN HISTORY WOULD FIT IN A STRIP NARROWER THAN A SINGLE HAIR.

"TWO WEEKS" WOULD BE TOO SMALL TO SEE EVEN WITH A POWERFUL MICROSCOPE.

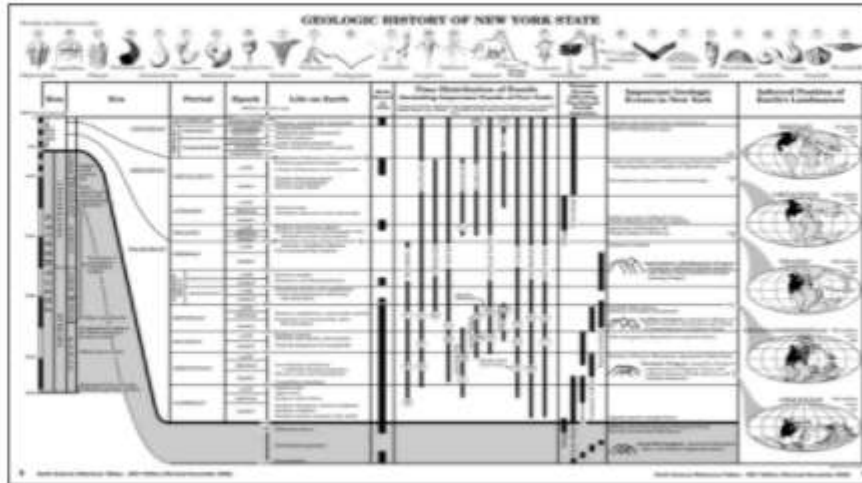


GEOLOGISTS ALWAYS TRY THIS WHEN THEY'RE LATE TURNING SOMETHING IN.



Let's look at some example Geologic History Problems to see how we can use the chart to answer these correctly.

Use this chart!

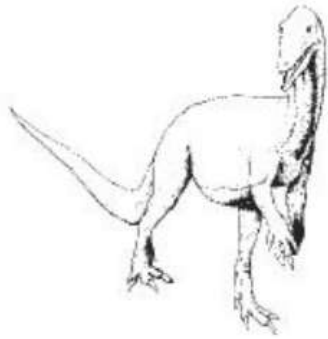




# Which of these fossils is the oldest?



Elliptocephala  
( 1 )



Coelophysis  
( 2 )



Bothriolepis  
( 3 )

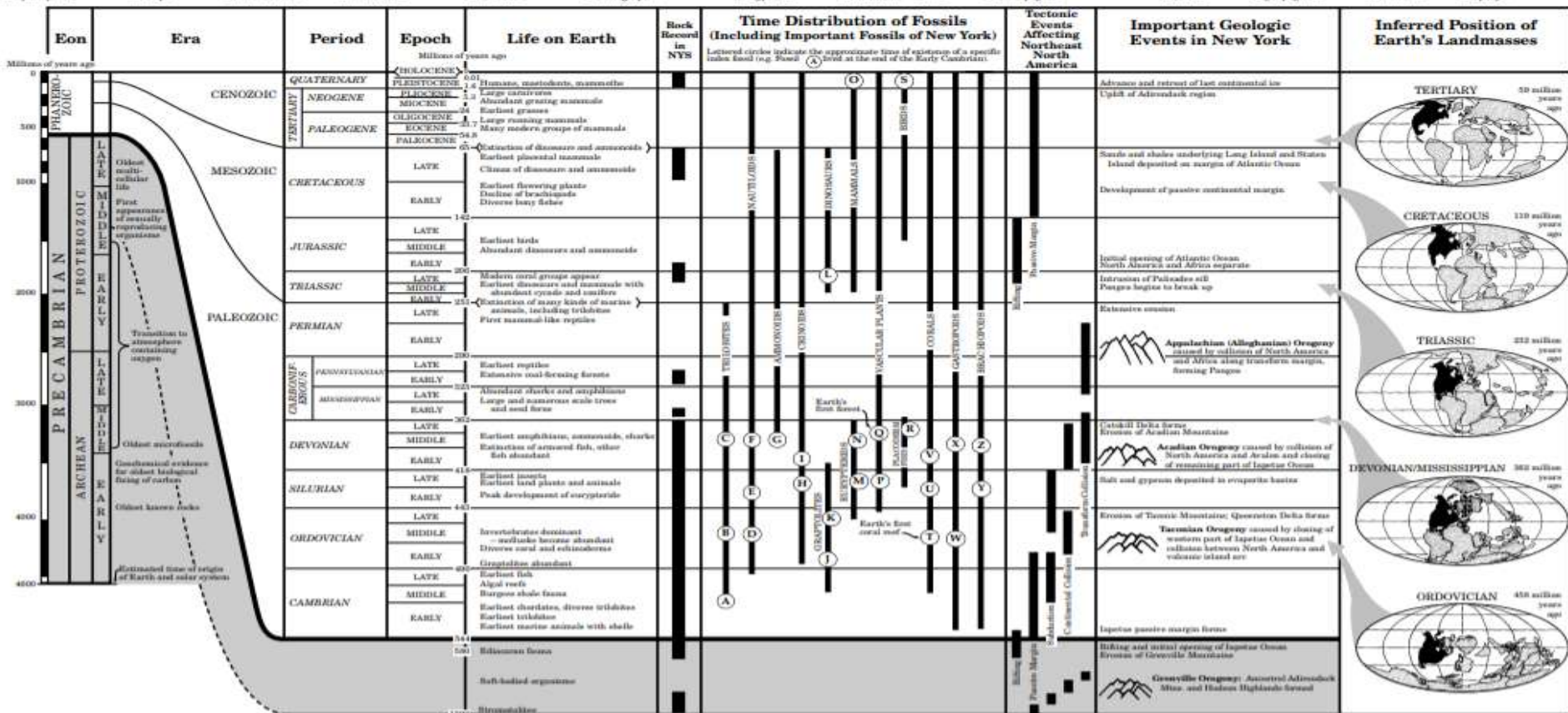
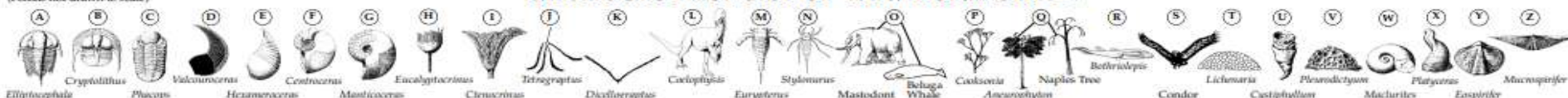


Maclurites  
( 4 )



(Fossils not drawn to scale)

## GEOLOGIC HISTORY OF NEW YORK STATE





During which geologic time period did the earliest reptiles and great coal-forming forests exist?

(1) Devonian

(2) Quaternary

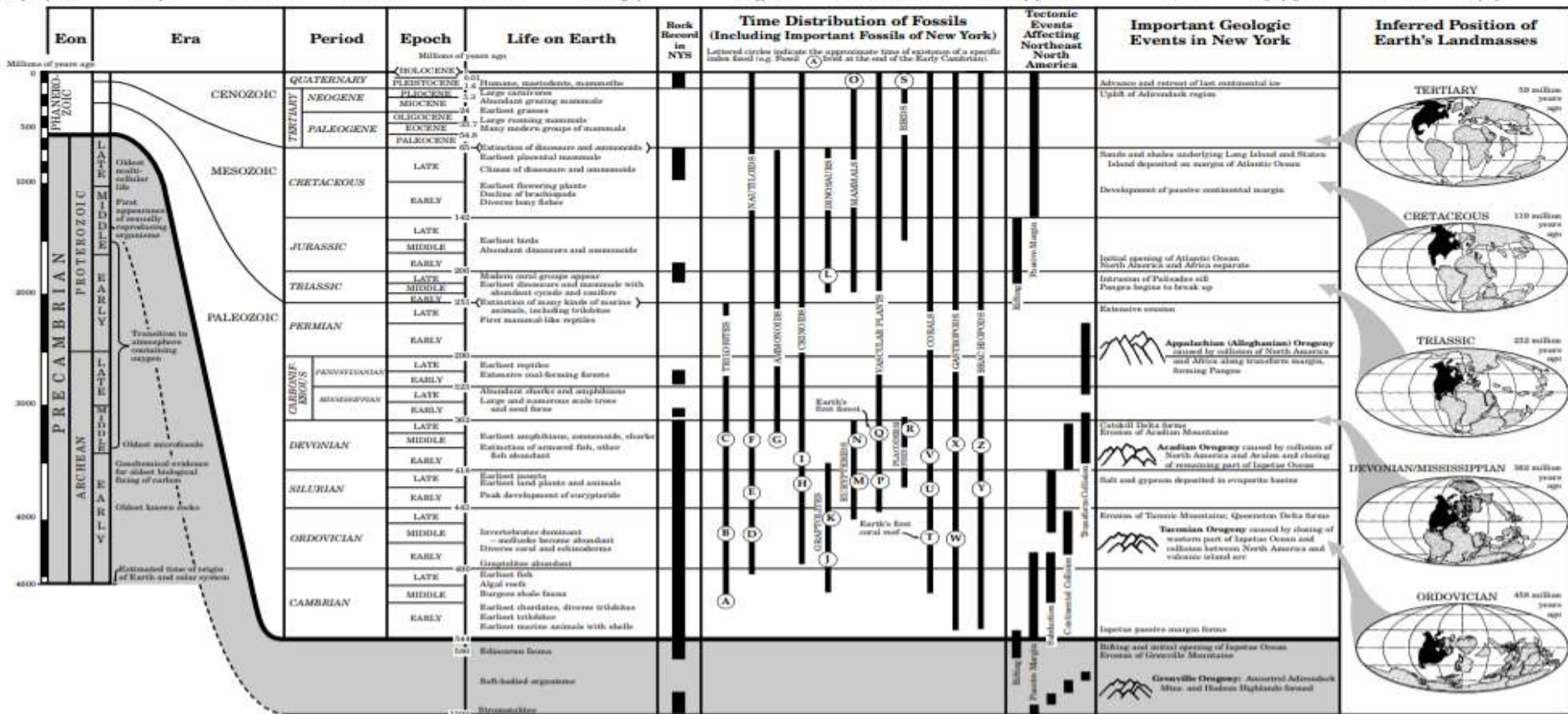
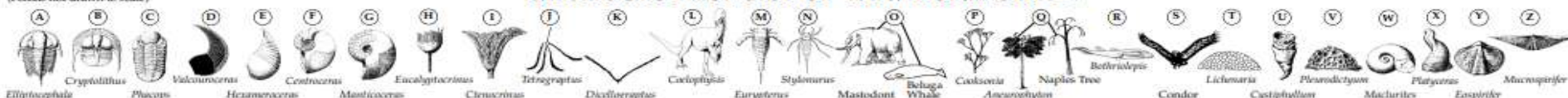
(3) Mississippian

(4) Pennsylvanian



(Fossils not drawn to scale)

## GEOLOGIC HISTORY OF NEW YORK STATE





During which geologic time span could this “game” have occurred?

- (1) Pleistocene Epoch
- (2) Pennsylvanian Epoch
- (3) Precambrian Era
- (4) Paleozoic Era

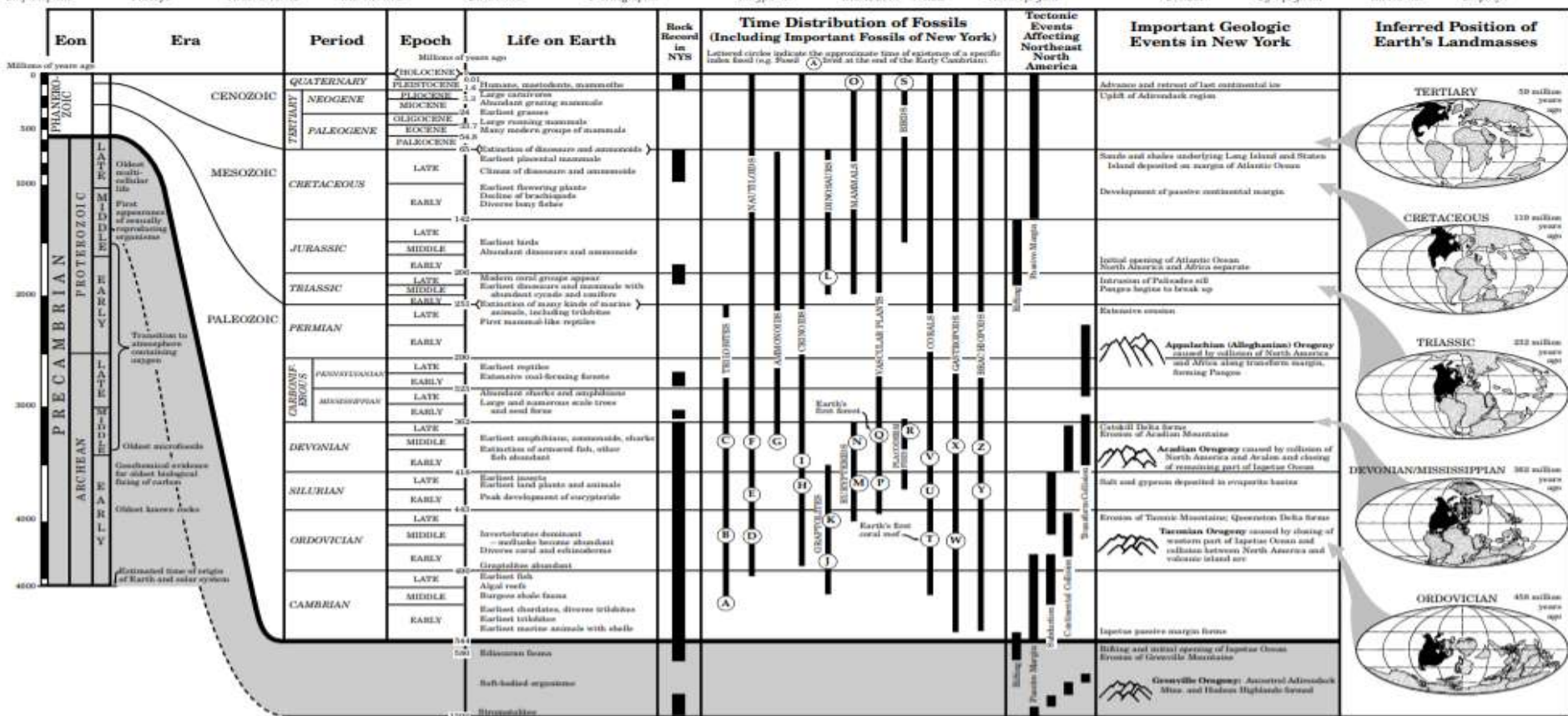
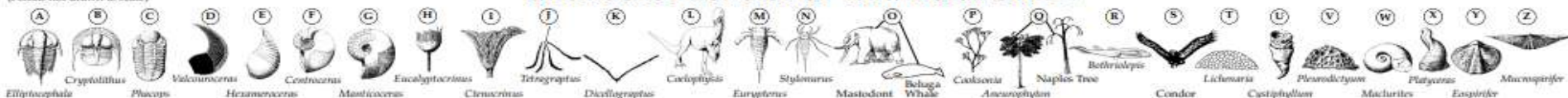


The primitive game of "Pull the mammoth's tail and run"



(Fossils not drawn to scale)

## GEOLOGIC HISTORY OF NEW YORK STATE





Which fossil would most likely be found in the same siltstone layer as the *Cryptolithus* fossil?



(1)



(3)



(2)

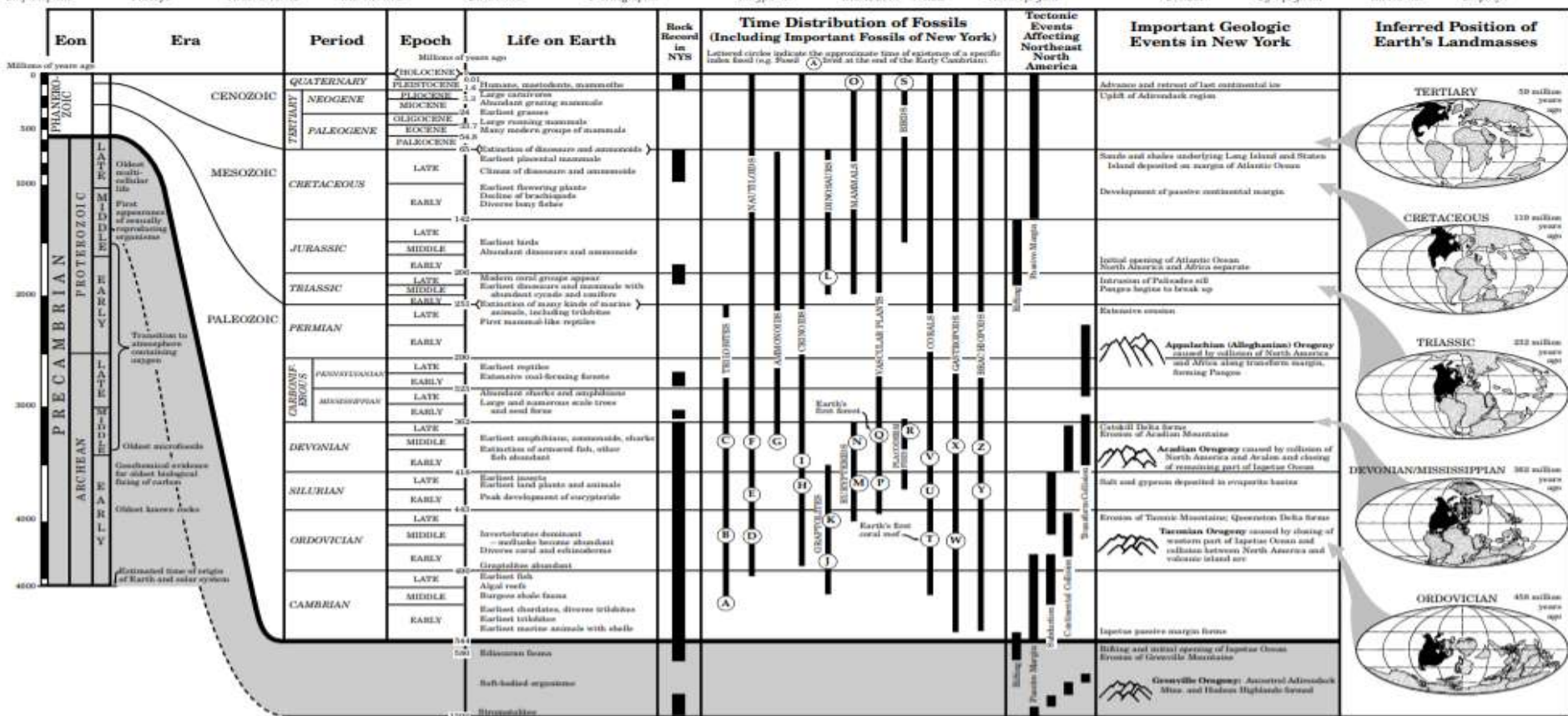
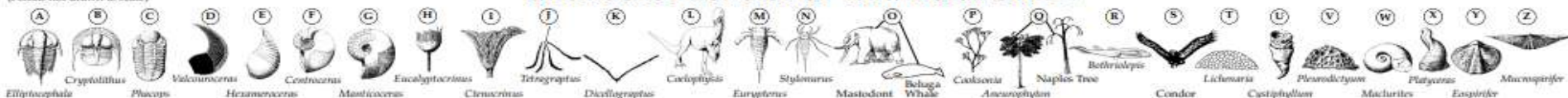


(4)



(Fossils not drawn to scale)

## GEOLOGIC HISTORY OF NEW YORK STATE

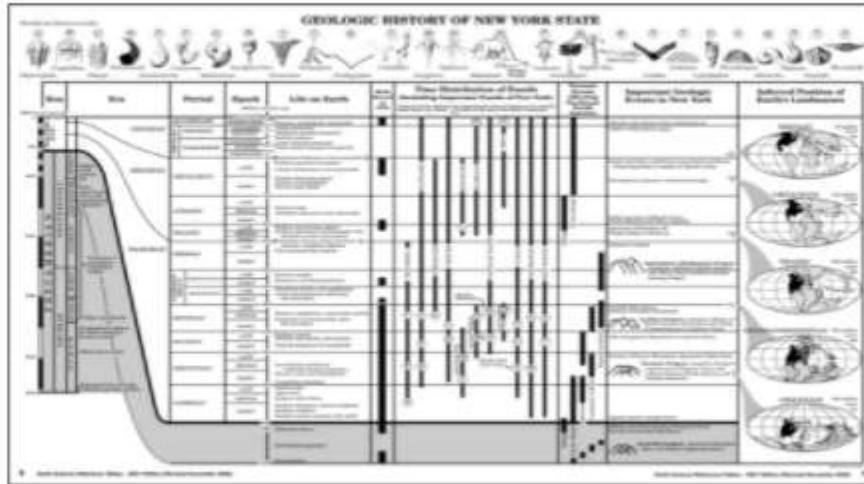




# Let's play!



Use this chart!

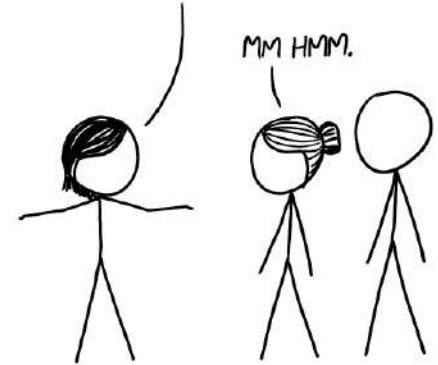


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GEOLOGISTS ALWAYS TRY THIS WHEN THEY'RE LATE TURNING SOMETHING IN.



# Stuff you can be working on now...

Unit 5 Quiz 2: Absolute Dating

Unit 5 Quiz 1: Relative Dating

Out of the Ashes Video Quiz

Unit 4 Quiz: Weathering & Friends

Weathering Scavenger Hunt

Access on Google Classroom



Unit 5 Quiz 2: Absolute Dating



Unit 5 Quiz 1: Relative Dating



Unit 4 Quiz 1: Weathering & Friends



Out of the Ashes: Dawn of Mammals  
Video Quiz



**Unit 5 Test is  
tomorrow!**

**Study!**



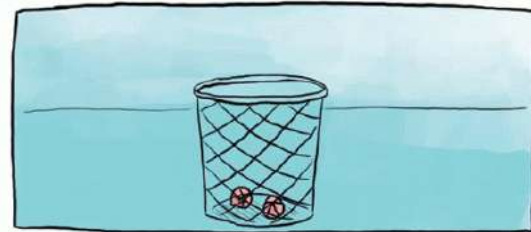


# Clean up! Have a great day!

1. Wipe your table and chair with the wipe.
2. Throw out the wipe when you leave.

Period 6, stack the chairs in the front of the room.

**Take trash bag out and put it outside in front of the classroom!**





## Unit 5 Test

- 1 student per table. Clear your desks
- All answers on the answer sheet.
- No Talking, No phones, No Leaving
- Reference Chart provided
- Turn in when finished & work on something quietly...not on phone





## Tech Challenge Club

- Sign Up today in Room 101 or 103 after 5th period
- Thursdays After School
- Team Engineering Challenge: Convert stored energy to Kinetic Energy and include Sound Energy
- Like Destination Imagination (Student-Built, student-created, student-presented)
- Open to 8th and 9th grade.

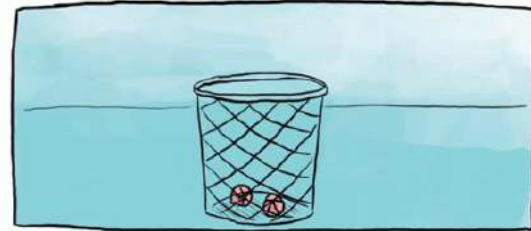


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# Agenda for 3/3 or 3/4

1. Paleoclimate HHMI Activity
2. In-Class Break
3. Science of Climate Change Film and Video Quiz
4. Work on Missing Assignments (If Time Allows)



Paleoclimate Activity: Use the [Interactive](#) (linked in the Google Classroom) to complete the worksheet.



## Paleoclimate: A History of Change



Scientists study paleoclimate to learn about Earth's history and to understand current climate change, including the biological implications.

[Click here to see Key Concepts](#)

### 2008 and Later: Paleoclimate: A History of Change

Student Worksheet

ABOUT THIS INTERACTIVE

Students will explore and analyze various paleoclimate data and broader forces impact on climate change. Students will describe methods to analyze impacts of climate change.

THE INTERACTIVE

Use the [Interactive](#) to explore the history of climate change and answer the following questions.

1. List three greenhouse gases.
2. Which is the most important of these gases in terms of amplification of climate effects?
3. Describe how these gases act as a "thermal blanket".
4. The rising greenhouse effect has been a source of natural changes. Earth's climate has warmed and cooled. Explain how it is today, including times when there were ice ages and times when the world was generally clearly ice-free.
5. Based on this statement, what changes in Earth's climate have occurred? If you answer yes, please explain your answer with facts and evidence. If you answer no, please explain why you think so.
6. What are the main forces that affect Earth's climate?
7. Why have the warmest periods of the last 1000 years been the warmest? Explain how the knowledge of past past connections between atmospheric and climate can inform us about recent day climate change.
8. Explain how the ability to reconstruct the past of the last million years helps us to understand the "normal" variation in Earth's atmosphere.
9. Changes in atmospheric and oceanic chemistry changes that impact climate. How do changes in Earth's climate impact temperature?

[www.hhmi.org](#) [National Science Foundation](#)



## The Science of Climate Change Video Quiz



Paleoclimate Activity: Use the [Interactive](#) (linked in the Google Classroom) to complete the worksheet.



# Paleoclimate: A History of Change



Scientists study paleoclimate to learn about Earth's history and to understand current climate change, including the biological implications.



Click here to see Key Concepts



Click and Learn  
**Paleoclimate: A History of Change**

Student Worksheet

## ABOUT THIS WORKSHEET

Students will examine and analyze factors controlling Earth's climate and describe human impact on climate change. Students will describe methods to mitigate impacts of climate change.

## PROCEDURE

Use the [Paleoclimate: A History of Change](#) Click & Learn to answer the following questions:

1. List three greenhouse gases:
2. Which is the most important of these gases in terms of amplification of climate effects?
3. Describe how these gases act like a "thermal blanket."

"The story of Earth's climate has been a story of massive changes. Earth has been much warmer and much colder than it is today, including times when there were no ice caps and times when the entire planet was nearly frozen over."

4. Based on this statement, should changes in Earth's climate cause anxiety? If you answer yes, please support your opinion with factual information. If you answer no, please explain why we should not worry.
5. What are the main factors that affect Earth's climate?
6. We know from the relative amounts of  $^{18}\text{O}$  and  $^{16}\text{O}$  that global temperatures and global climate have changed over time. Why is it important for scientists to be able to explain how they know that climate has changed over time and that they are able to repeat experiments that support this information?
7. Atmospheric changes in Earth's history have caused large temperature changes through time. Explain how knowledge of these past connections between atmosphere and climate can inform us about modern-day climate change.
8. Explain how the ability to describe the pattern of ice ages over the past million years helps us to assess what is a "normal" variation in Earth's atmosphere.
9. Changes in atmosphere are not the only changes that impact climate. How can changes in Earth's orbit impact temperature?



**Remain seated and  
keep the volume down**

**INTERMISSION**



Go to Google Classroom and Open the Video quiz.  
Preview the questions...the film will start shortly.



# THE SCIENCE OF CLIMATE CHANGE

## The Science of Climate Change Video Quiz



The image is a composite graphic. The top half shows a lush green forest with various types of trees. The bottom half shows a flooded forest, with the same trees submerged in water, creating a reflection-like effect. The text "THE SCIENCE OF CLIMATE CHANGE" is centered over the middle of the image, spanning across both the green and flooded sections.

# THE SCIENCE OF CLIMATE CHANGE



# Complete the Video Quiz (Google Classroom)



## THE SCIENCE OF CLIMATE CHANGE

The Science of Climate Change Video  
Quiz





# Stuff you can be working on now...that is making up your grade

Science of Climate Change  
Video Quiz

Unit 5 Quiz 2: Absolute Dating

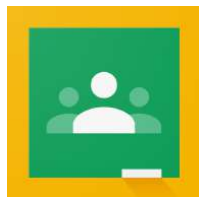
Unit 5 Quiz 1: Relative Dating

Out of the Ashes Video Quiz

Unit 4 Quiz: Weathering &  
Friends

Weathering Scavenger Hunt

Access on Google Classroom



Unit 5 Quiz 2: Absolute Dating



Unit 5 Quiz 1: Relative Dating



Unit 4 Quiz 1: Weathering & Friends



Out of the Ashes: Dawn of Mammals  
Video Quiz



The Science of Climate Change Video  
Quiz

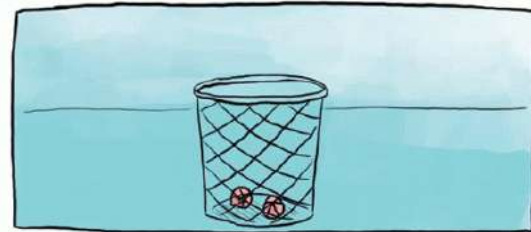


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# Agenda for 3/7

1. Review Unit Test Retake Procedure.
2. Work on Missing assignments

\*I am going to replay the video from last week for those who missed it...or didn't complete the quiz.

Semester 1  
of the Spring  
is ending  
soon!

## Unit Test Reassessment Procedure

If you wish to reassess a Unit Test, here is the procedure:



1. Make sure that you have completed the reassessment requirements, namely:
  - a. You have completed any graded assignments for the Unit with passing scores.
  - b. You have completed the unit's guided notes.
  - c. You have completed at least 45 minutes of additional studying. Document it on the [Retake form](#) (Give me editing access to the form)
2. Send me an email with your retake form attached and schedule a time (zero period, lunch or homeroom) to take the retake.

## Stuff you can be working on now...that is making up your grade

Science of Climate Change  
Video Quizz

Unit 5 Quiz 2: Absolute Dating

Unit 5 Quiz 1: Relative Dating

Out of the Ashes Video Quiz

Unit 4 Quiz: Weathering &  
Friends

Weathering Scavenger Hunt

Access on Google Classroom





# Test Makeup Procedure (Under Classwork tab in Google Classroom...scroll to the bottom.)

## Class Resources



### Unit Test Reassessment Procedure

Posted Jan 26

If you wish to retake a test, here is the procedure for that.



**Unit Test Reassessment ...**  
Google Docs

[View material](#)



## Unit Test Reassessment Procedure

If you wish to reassess a Unit Test, here is the procedure:



1. Make sure that you have completed the reassessment requirements, namely:
  - a. You have completed any graded assignments for the Unit with passing scores.
  - b. You have completed the unit's guided notes.
  - c. You have completed at least 45 minutes of additional studying. Document it on the [Retake form](#) (Give me editing access to the form)
2. Send me an email with your retake form attached and schedule a time (zero period, lunch or homeroom) to take the retake.



Name \_\_\_\_\_ Period \_\_\_\_ Test to Retake \_\_\_\_\_

Reassessment Requirements: Answer the questions “Yes” or “No”. When you’ve answered all questions with a “Yes” email your teacher with this form attached and schedule a time to retake the test. Please include the date and time (Before School, lunch, or homeroom) when you wish to take the test.

Requirement	Yes or No
1. I have completed any graded assignment from this unit with a passing score.	
2. I have completed my guided notes from this Unit and will show them to my teacher before I take the retake.	
3. I have completed an additional 45 minutes of studying for this test and have documented it in the table below.	

Additional Studying Record	
Time Spent (minutes)	What I did (Reviewed specific concepts, redid Kahoot Reviews, Redid Review Games, etc)



# Stuff you can be working on now...that is making up your grade

Science of Climate Change  
Video Quiz

Unit 5 Quiz 2: Absolute Dating

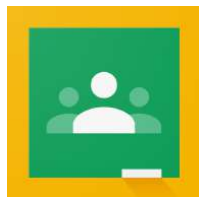
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Unit 5 Quiz 2: Absolute Dating



Unit 5 Quiz 1: Relative Dating



Unit 4 Quiz 1: Weathering & Friends



Out of the Ashes: Dawn of Mammals  
Video Quiz



The Science of Climate Change Video  
Quiz



The background of the slide is a composite image. The upper portion shows a dense, green forest of tall trees, possibly evergreens, under a hazy, grey sky. The lower portion is a reflection of the forest above, but the colors are shifted to a warm, orange-brown hue, suggesting a sunset or a different environmental condition. The text "THE SCIENCE OF CLIMATE CHANGE" is centered over the image in a bold, black, sans-serif font.

# THE SCIENCE OF CLIMATE CHANGE