

# Bellringer D4

- Get out your **guided notes**, prepare for the quiz review!
- Rules:
  - Each table needs at least one device connected to the Kahoot
  - You can help your neighbor during the review
  - Questions are fast; you won't have much time to look for them. Either you know it, or you don't.
  - 80% or higher class average = no quiz required!
  - P.S. After we finish, the rest of today is a **Work Day** for your **WPA Posters!**

# Bellringer D5

- What is geology?
  - “Geo” means rock
  - “ology” refers to “study” or “love of”
  - ...so it’s the love / study of rocks!

# Utah Studies

D5 / Day 5, Ch. 2.1

Utah's Geologic History, Part I

# Time to Exercise!

- Let's all stand up, and **STRETCH** our arms out, left to right. Now, can I get a volunteer?
  - **BTW, do you mind if I draw on your arms? No? Ok!**
- Pretend the left tip of your fingers were the beginning of the Earth, and the right tip is the present day.
- The rest of you, listen, take notes, and feel free to add any of this info to the timeline on the right of your notes!
- Ok; the **first animal life** (small, single cell organisms) began about 4 BYA / billion years ago, on your left elbow here...



# History of the Earth...on You!



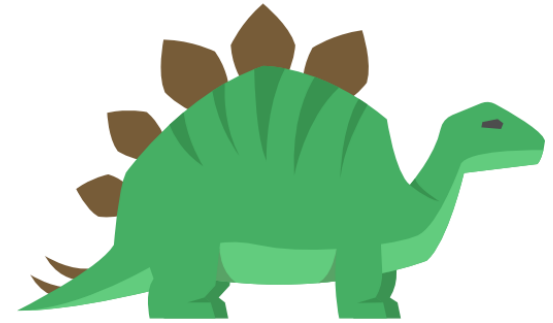
- Alright...now things continue this way for a LONG time...another billion years (3 BYA) before we get some **photosynthetic** life forms (still simple cells), and it isn't until 1.5 billion years ago we get **multicellular creatures**.



- Finally, around 600 MYA (million years ago), in the **Precambrian Era** (everything before the next era, “the beginning”-570 MYA), we start to get some things you can recognize. We get some **clams** in the **Paleozoic Era** (~500-240 MYA), just past your right elbow.
- After another 300 MY, we have the **Mesozoic Era** (~240-65 MYA) which is when the dinosaurs and early mammals arrive on the scene. This begins at the end of your right thumb, if held straight out to the right.

# Utah's Geologic History

- The dinosaurs last up until the last joint of your middle finger. From the last joint to the very tip, that is the era of mammals.
- And humans? We've been around for about as long as a snip of your fingernail...so yeah, not a very long time in the grand scheme of things.
- Thanks by the way for “donating your body to science”, so to speak ;). Well done!



# Geology

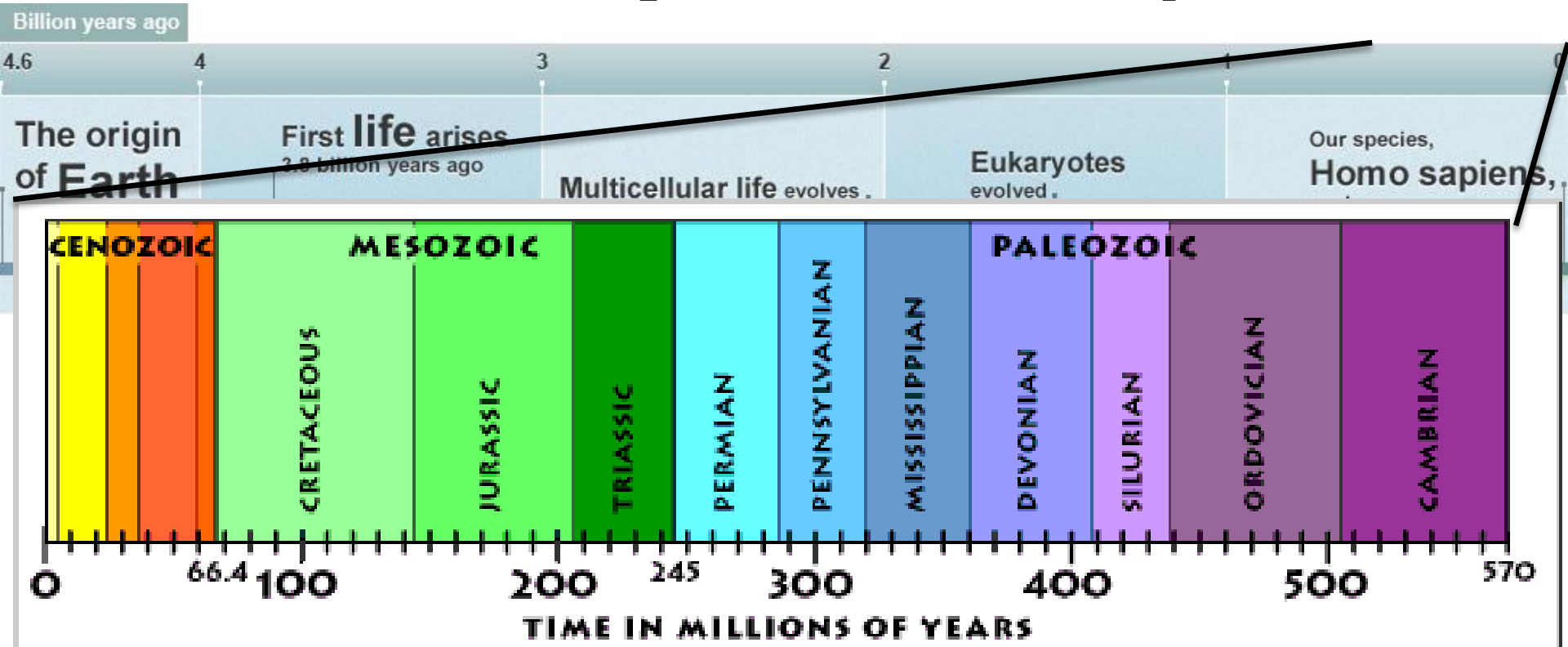


- So how did we learn all of this? Because of **geology** of course! People who study rocks are known as **geologists**. They look at rocks and rock formations today, and try to determine how they were formed long ago.
- In Utah's beautiful canyons, mountains, etc. we see those clues to Utah's past. Wind, water, earthquakes, floods, heat and cold have all shaped our landscape! And these changes still occur today.



# Geologic Eras

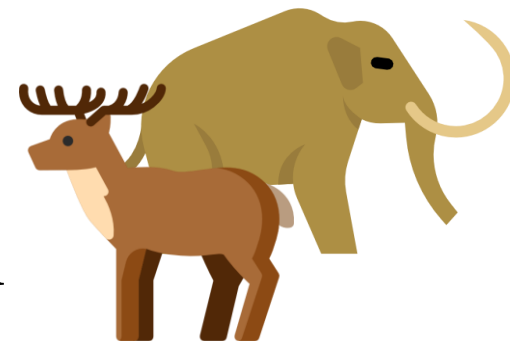
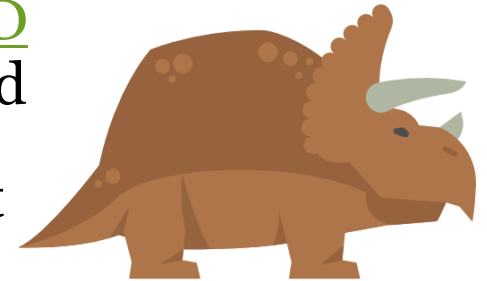
- These large divisions of time are called **eras**. They are based on large geologic events, like the formation of mountains, etc., and the types of animals that lived during those periods. The longest is the **Precambrian**, from 4.6 BYA to 570 MYA. Some rocks on **Antelope Island** are from this period.





# The Three Big Ones

- Next is the **Paleozoic Era** (570 – 243 MYA), which means “**ancient life.**” This was an era of an immense explosion of exotic and strange life forms (like this **trilobite**, Utah’s oldest animal fossils), which when they died later formed **fossil fuels**, like coal, oil, etc. and we have large deposits of these in the Uinta Basin, Carbon County, etc. formed in this period. [VID](#)
- The **Mesozoic Era** (243 – 65 MYA) was ruled by the **dinosaurs**. These large creatures roamed all over the U.S., and many were right here in Utah (ex: Dinosaur National Monument). This is also when the Rocky Mountains began to form. [VID](#)
- The last era, the **Cenozoic Era** (65 MYA – Now) was the time of the **mammals**. During the last several million years, many different **giant** and **small mammals** have existed and then died...and also us, about 1 MYA.



# Ancient Seas & Sand

- During many different periods, Utah has been covered by **shallow seas**. Small bits of material like shells, sand, etc., called **sediment**, drifted to the bottom of the seas.
- These gradually formed deep layers, and as time passed, were heated and pressured together to form thick layers of **limestone** and **sandstone**, sometimes over 1000 feet thick!
- Later, Utah was lifted up, and for thousands of years, the seas dried up, and the land was **dry**, covered with **sand** like the **Sahara Desert**. [Little Sahara VID](#). This sand also later would get **compressed** and **hardened**, and it is all these **sandstone layers** that make up some of Utah's most **beautiful** places today! [Kanaraville UT VID](#)



# Dinosaurs in Utah!

- Checkout the handout ***Dinosaurs*** and read through it at your table. Answer the questions together. Then, pick one of the following sites to learn more about, use a chromebook to do a bit of research, and answer the questions in your guided notes:
- **Dinosaur National Monument:**  
<https://goo.gl/Unu38v>
- **Cleveland-Lloyd Dinosaur Quarry:**  
<https://goo.gl/pxxe3c>
- **Moab's Mill Canyon:**  
<https://goo.gl/CdKGwa>
- **St. George Dinosaur Discovery Site:**  
<https://goo.gl/gDC8NV>