



# TUCKER'S DINOSAUR CLUB

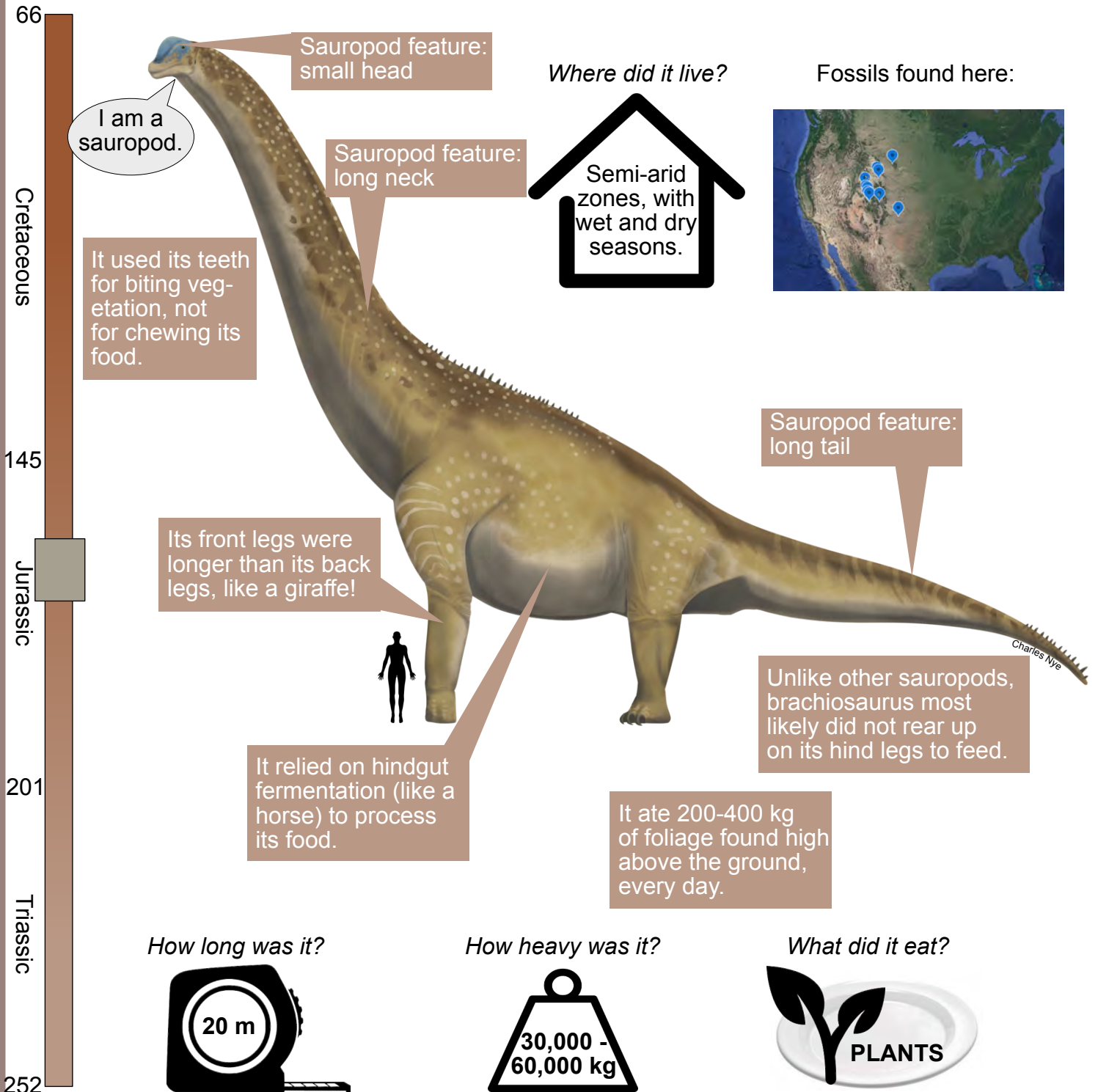


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# BRACHIOSAURUS

means arm lizard





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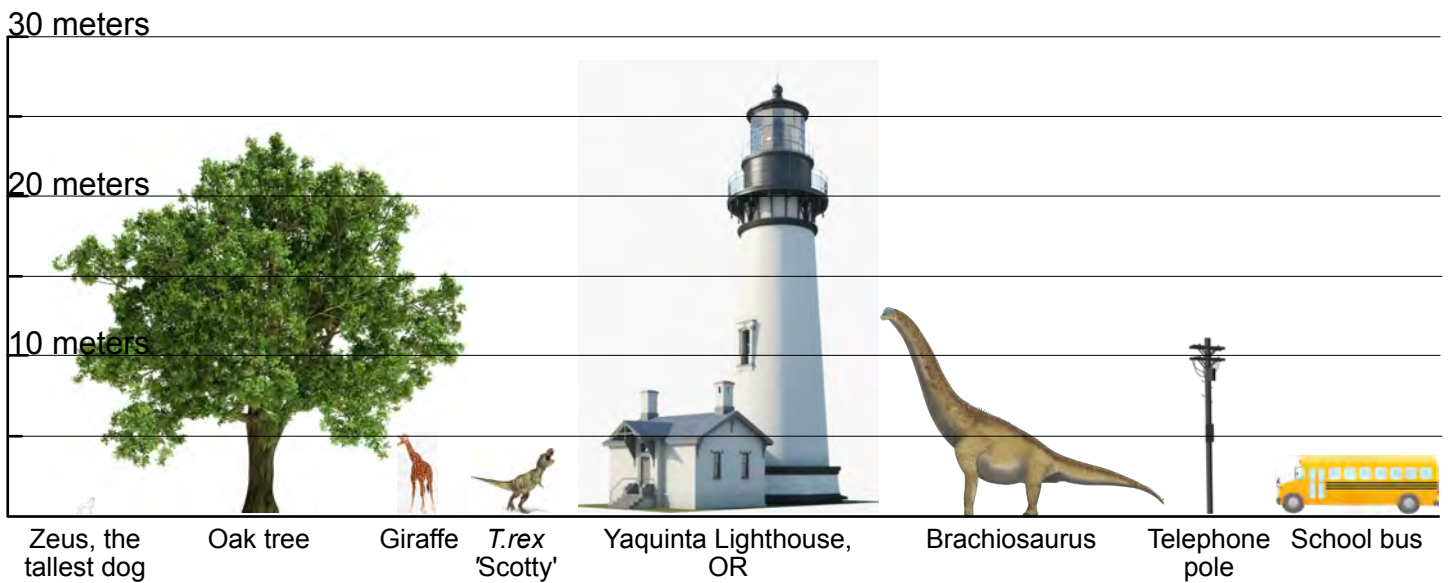


## Great heights!

Brachiosaurus is estimated to be 9.5 to 13 meters (31 - 43 ft) tall. But how tall is that really?!

Look at the pictures on the graph below. Read the height of each and report it at the bottom of the page.

Did you know that the douglas fir trees around the Rice Museum of Rocks and Minerals are between 60 and 75 meters tall?



'Zeus' the Great Dane, the world's tallest dog is \_\_\_\_\_ meters tall.

An oak tree grows to an average height of \_\_\_\_\_ meters tall.

'Forest' the world's tallest giraffe is just over \_\_\_\_\_ meters tall.

'Scotty' the largest *T.rex* discovered is estimated to be \_\_\_\_\_ meters tall.

Yaquina Head Lighthouse, Oregon's tallest lighthouse is \_\_\_\_\_ meters tall.

The brachiosaurus is estimated to be up to 13 meters tall.

A telephone pole is usually around \_\_\_\_\_ meters tall.

A standard school bus is just over \_\_\_\_\_ meters tall.



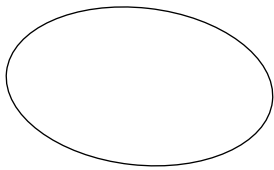
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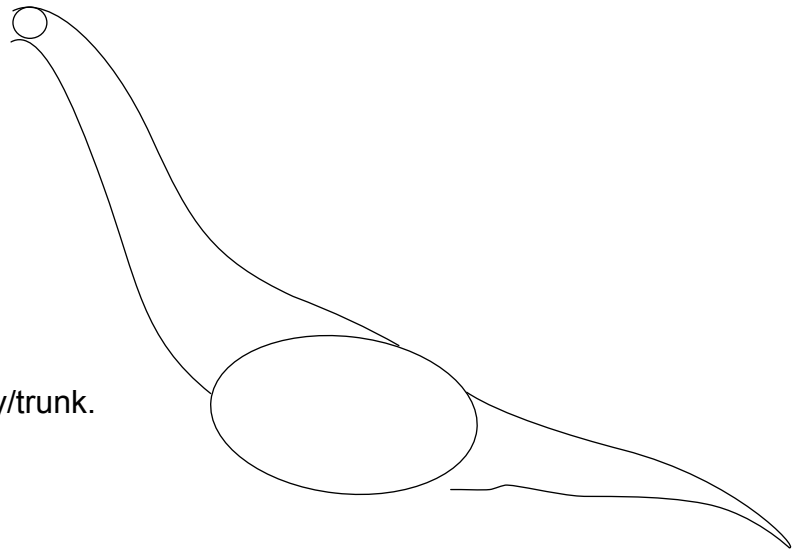
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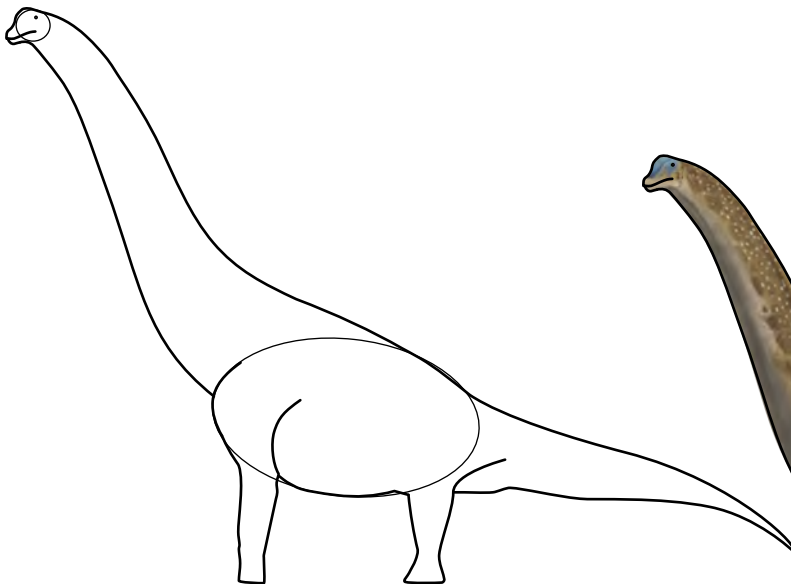
How to draw a brachiosaurus



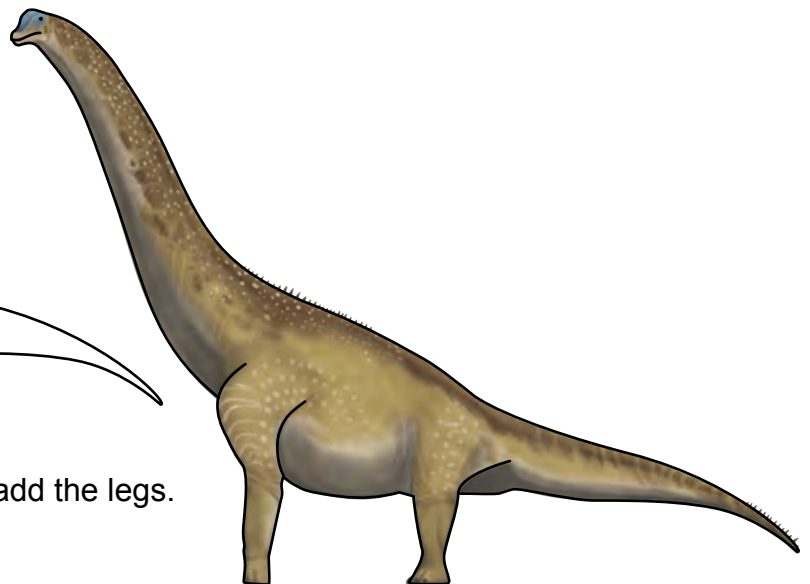
1. Draw circles for the head and the body/trunk.



2. Add the neck and tail.



3. Draw the head around the circle and add the legs.



4. Erase the outline circles and color.



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## Word search with a twist

This word search has a twist. You will need to fill in the 10 missing words from the paragraph about brachiosaurus to make your own word bank and complete the word search! To help, we have given you the first letter of each missing word.

The b \_\_\_\_\_ was a d \_\_\_\_\_  
that lived during the J \_\_\_\_\_ period, about 150 million years ago. It was a  
s \_\_\_\_\_, with a l \_\_\_\_\_ tail and neck. It was a  
h \_\_\_\_\_, eating only p \_\_\_\_\_, and no meat. It used its  
t \_\_\_\_\_ to strip vegetation from trees rather than chew it. Brachiosaurus was one  
of the t \_\_\_\_\_ dinosaurs, about twice as tall as a giraffe. The first brachiosaurus  
f \_\_\_\_\_ was found in was found in Grand River Valley in western Colorado in  
1900, in the Morrison Formation.

N	G	Z	D	I	N	O	S	A	U	R	U	I	X
A	Y	A	A	W	I	W	B	A	H	X	S	J	J
G	F	D	Z	G	W	G	R	E	E	N	A	U	D
F	O	S	S	I	L	K	A	O	R	A	U	R	U
T	A	L	L	E	S	T	C	J	B	M	R	A	F
I	T	X	I	V	X	Y	H	T	I	A	O	S	Z
I	X	P	G	V	O	Z	I	E	V	O	P	S	I
V	J	L	Q	I	U	D	O	E	O	G	O	I	T
G	A	A	G	J	Z	I	S	T	R	O	D	C	L
N	L	N	J	H	N	Z	A	H	E	P	C	D	V
G	Z	T	M	X	E	S	U	M	O	S	W	I	J
W	E	S	T	W	V	T	R	L	T	R	C	R	Q
L	O	N	G	Y	M	X	U	P	D	C	M	X	D
F	C	X	H	D	J	H	S	Q	A	O	D	E	N



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## Dizzy drinking

Have you ever stood up too quickly and got dizzy? Imagine if you had to bend your head down to your toes to drink some water. Now imagine you had to bend and raise your neck the length of a five-story building to drink!!! Well, that's what Brachiosaurus had to do. But how did it not get dizzy?

Paleontologists don't have much evidence to understand how Brachiosaurus and other sauropods drank without fainting. Instead they compare these tall, long-necked dinosaurs with modern tall, long-necked animals, namely giraffes.



Giraffes need to have high enough blood pressure to pump blood all the way up to their heads. This means they have a very large heart (11 kg / 25 pounds) to pump their blood. Giraffes also have special valves in their carotid arteries (tubes that carry blood from the heart to the brain, neck and face) to stop blood from sliding back down. Finally, giraffes have a network of blood vessels at the base of their brain that controls blood pressure to their brain.

Another adaptation that Brachiosaurus and giraffes might share is not needing to drink frequently. Giraffes only need to drink every few days as they get water from the plants they eat. Brachiosaurus might also have received enough water from their plant diet to avoid needing to drink daily.

Answer the following questions after reading about dizzy drinking.

1. What animal do paleontologists compare Brachiosaurus to when trying to understand how they used to drink? \_\_\_\_\_

2. Name two ways giraffes bodies have adapted to avoid getting dizzy when drinking. \_\_\_\_\_

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3. How could Brachiosaurus avoid needing to drink every day? \_\_\_\_\_

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## Dinosaur Eggs

All dinosaur babies came from eggs. It seems reasonable to think that large dinosaurs like Brachiosaurus laid the largest eggs, but a dinosaur's egg size doesn't tell us about the adult's size.

Brachiosaurus and other sauropods usually weighed about 5 kg (11 pounds) when they hatched. That's about as heavy as a house cat. So Brachiosaurus did not start out very big, instead it grew really fast!

Don't forget to see  
the nest of fossilized  
dinosaur eggs at the Rice  
Museum of Rocks and  
Minerals!

Share the eggs equally between the nests.

Draw the correct number of eggs in each nest. In the circles, write how many eggs are in each nest.



Put half of the eggs in one nest.

Draw the correct number of eggs in the nest. In the circle, write how many eggs are in the nest.



Put one quarter ( $1/4$ ) of the eggs in each nest.

Draw the correct number of eggs in each nest. In the circles, write how many eggs are in each nest.





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What do you call a brachiosaurus who is a noisy sleeper?

Answer the riddle by solving the math questions and using the letter key below.

①  $18 - 9 =$

②  $21 - 14 =$

③  $41 + 30 =$

④  $23 + 26 =$

⑤  $11 + 34 =$

⑥  $58 + 13 =$

⑦  $57 - 8 =$

⑧  $30 + 30 =$

⑨  $23 - 6 =$

Letter key:

A ..... 5	I ..... 7	Q ..... 51	Y ..... 92
B ..... 18	J ..... 39	R ..... 60	Z ..... 23
C ..... 13	K ..... 32	S ..... 45	
D ..... 9	L ..... 22	T ..... 19	
E ..... 17	M ..... 52	U ..... 58	
F ..... 41	N ..... 71	V ..... 36	
G ..... 24	O ..... 49	W ..... 76	
H ..... 61	P ..... 34	X ..... 44	

①

②

③

④

⑤

⑥

⑦

⑧

⑨



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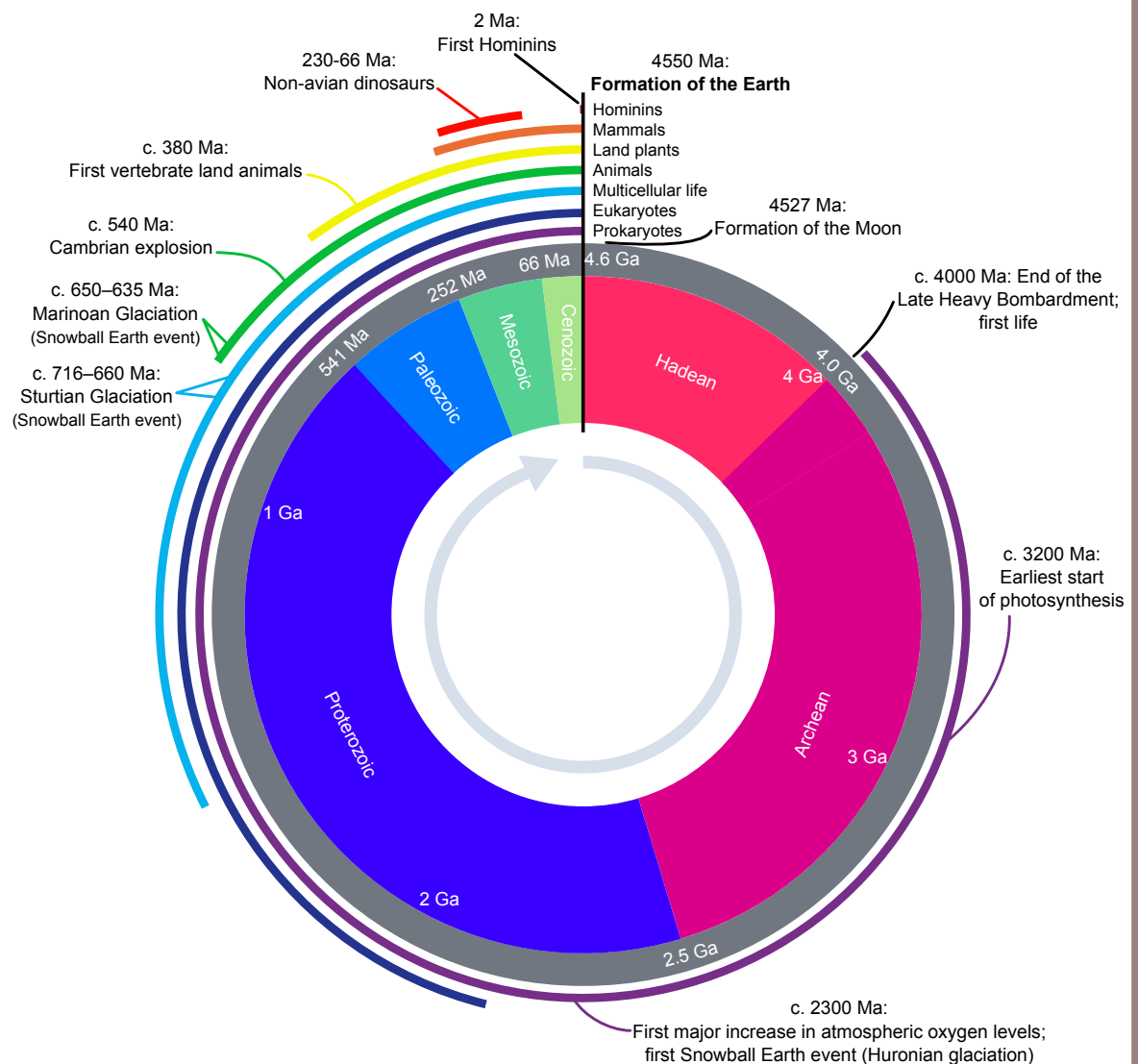


## Deep Time

EON/ERA	PERIOD	Ma		
Phanerozoic	Cenozoic	Quaternary	0.011 - 0.2	
		Tertiary	Neogene	2.4 - 23.0
				3.6 - 5.3
				11.2 - 16.4
				23.0 - 28.5
				34.0 - 41.3
	Mesozoic	Cretaceous	99.6 - 145	
		Jurassic	161 - 200	
		Triassic	228 - 245	
		Paleozoic	Permian	251 - 260
				271 - 299
			Pennsylvanian	306 - 311
			Mississippian	318 - 345
			Devonian	359 - 385
			397 - 416	
			419 - 423	
			428 - 444	
			444 - 488	
			501 - 513	
Precambrian	Proterozoic	Late Neoproterozoic	1000 - 542	
		Middle Mesoproterozoic	1600 - 2500	
		Early Paleoproterozoic	2500 - 3200	
	Archean	Late	3200 - 4000	
		Early	4000 - 4600	

The earth is 4.6 billion years old. That's 4,600,000,000 years! That can be a hard concept to wrap your head around! A lot has happened in that time. In fact, Earth's history is marked by a series of transformations, mass extinctions, and geologic changes. Geologists and paleontologists refer to geologic time as deep time.

There are many ways to represent the enormity of deep time. A popular way is to use a 24-hour clock to represent all 4.6 billion years. In this example each minute represents about 3 million years. So if all of Earth's deep history were squashed into one 24 hour day, the age of dinosaurs, the Mesozoic, would not start until 10:56 PM!







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### What you'll need:

Roll of toilet paper

Fine tipped pen/  
marker



Get a roll of toilet paper and in one long continuous sheet, count out 46 sheets before tearing it off the roll. You are going to use this long 46-sheet roll to represent Earth's deep history. Each sheet in your long long roll represents 100 million years.

At one end of the roll mark the edge 0. This represents now. At the other end mark the 4600 million years ago (4.6 billion). That represents the Earth's formation.

Think of your toilet paper roll as a giant number line. Using the lists in the boxes below, write some important events in Earth history on your toilet paper roll in the correct places based on when they happened.

Instead of writing million years ago, you can write mya for short!

### Major geologic events:

Formation of the great oceans 4,200 mya

Continents begin shifting 3,100 mya

Rodinia supercontinent breaks up 700 mya

Gondwana forms 500 mya

Formation of Pangaea supercontinent 280 mya

Pangaea supercontinent breaks up 200 mya

Global ice ages begin 2 mya

### Major extinctions:

End Ordovician 443 mya

Late Devonian 364 mya

End Permian 250 mya

Late Triassic 206 mya

End Cretaceous 65 mya

### Life transformations:

First evidence of life 3,850 mya

Cambrian Explosion 530 mya

First land plants and fish 480 mya

First mammals and dinosaurs 220 mya

First birds 150 mya

First hominids 5.2 mya

Modern humans 0.1 mya

