

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

Date: \_\_\_\_\_

# Utah's Geologic Timeline

The Earth formed nearly 5 billion years ago! Insects appeared 385 million years ago! It can be extremely challenging to visualize and compare such large numbers, but it's important to understand how the Earth and the things on it have evolved over time. We will create a geologic time that looks at the Earth and Utah specifically, and we will use events scaled proportionately to a normal calendar year to help us visualize this.

Use the following table to fill out the blank calendar below with the events corresponding to each date. Once you complete that, go back and shade over the months and days that are in each of the four geologic eras: every square should be colored in. Make sure to fill out the boxes in the legend so others know which color corresponds to which era.

Millions of Years Before Present	Event	Date and/or time that corresponds to the calendar	Era
4600	Earth forms	January 1	Precambrian
3900	First signs of life appears on Earth (cells)	February 25	
1500	First multi-celled organisms appear on Earth (seaweed and algae)	September 3	
670	Jelly fish show up	November 8	
600	Trilobites swim along the ocean bottom west of Delta, now fossilized in the Wheeler Shale	November 14	
550	The USA is sideways in what is now the southwest Pacific Ocean	November 18	
470	First land plants show up on Earth	November 24	Paleozoic
385	First insects show up on Earth	December 1	
375	First land animals show up on Earth	December 2	
330	First reptiles show up on Earth	December 5	
245	96% of all life on Earth is wiped out	December 12	Mesozoic
228	First dinosaurs appear on Earth (Eoraptor and Saltoposuchus)	December 13	
208	Sand-dune fields blow across Utah, now the buff-red cliffs of Navajo Sandstone	December 15	
152	Dinosaurs roam eastern Utah, bones now fossils in the Morrison Formation	December 19	
115	First flowering plants show up on Earth	December 22	Cenozoic
65	Non-avian dinosaurs wiped out, major coal-forming swamps and marshes in existed in Utah	December 26	
60	Lakes deposited the multi-colored rocks of Bryce Canyon and Cedar Breaks	December 27	
39	First monkeys show up on Earth	December 28	
15	Wasatch fault becomes active	December 30	
4	Oldest human-like ancestors exist on Earth	December 31 17:20:00	
0.2	First modern humans, Homo sapiens, exist on Earth	December 31 23:48:00	
0.03	Lake Bonneville covers much of western and northern Utah	December 31 23:58:13	
0.01	First humans appear in Utah	December 31 23:58:29	
600 years	Most recent volcanic eruption in Utah, now the basalt in the Black Rock Desert west of Fillmore	December 31 23:59:56	
500 years	Most recent large earthquake on the Wasatch fault (~M7, near Nephi)	December 31 23:59:57	
175 years	pioneers reach the Salt Lake Valley	December 31 23:59:59	

<b>Legend</b>			
Precambrian Era	<input type="checkbox"/>	Mesozoic Era	<input type="checkbox"/>
Paleozoic Era	<input type="checkbox"/>	Cenozoic Era	<input type="checkbox"/>

January							February						
			1	2	3	4							1
5	6	7	8	9	10	11	2	3	4	5	6	7	8
12	13	14	15	16	17	18	9	10	11	12	13	14	15
19	20	21	22	23	24	25	16	17	18	19	20	21	22
26	27	28	29	30	31		23	24	25	26	27	28	29

March							April						
1	2	3	4	5	6	7				1	2	3	4
8	9	10	11	12	13	14	5	6	7	8	9	10	11
15	16	17	18	19	20	21	12	13	14	15	16	17	18
22	23	24	25	26	27	28	19	20	21	22	23	24	25
29	30	31					26	27	28	29	30		

May							June							
					1	2			1	2	3	4	5	6
3	4	5	6	7	8	9	7	8	9	10	11	12	13	
10	11	12	13	14	15	16	14	15	16	17	18	19	20	
17	18	19	20	21	22	23	21	22	23	24	25	26	27	
24	25	26	27	28	29	30	28	29	30					
31														

July							August						
			1	2	3	4							1
5	6	7	8	9	10	11	2	3	4	5	6	7	8
12	13	14	15	16	17	18	9	10	11	12	13	14	15
19	20	21	22	23	24	25	16	17	18	19	20	21	22
26	27	28	29	30	31		23	24	25	26	27	28	29
							30	31					

September							October						
		1	2	3	4	5					1	2	3
6	7	8	9	10	11	12	4	5	6	7	8	9	10
13	14	15	16	17	18	19	11	12	13	14	15	16	17
20	21	22	23	24	25	26	18	19	20	21	22	23	24
27	28	29	30				25	26	27	28	29	30	31

November							December						
1	2	3	4	5	6	7			1	2	3	4	5
8	9	10	11	12	13	14	6	7	8	9	10	11	12
15	16	17	18	19	20	21	13	14	15	16	17	18	19
22	23	24	25	26	27	28	20	21	22	23	24	25	26
29	30						27	28	29	30	31		

December 31					
0:00					
1:00					
2:00					
3:00					
4:00					
5:00					
6:00					
7:00					
8:00					
9:00					
10:00					
11:00					
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15:00					
16:00					
17:00					
18:00					
19:00					
20:00					
21:00					
22:00					
23:00	23:10	23:20	23:30	23:40	23:50
					23:51
					23:52
					23:53
					23:54
					23:55
					23:56
					23:57
					23:58
					23:59

## Questions

1. For how long has there been life on Earth?

\_\_\_\_\_

2. For what percent of Earth's history has there been life? Round to nearest percent.

\_\_\_\_\_

3. Which geologic era is the longest? Which is the shortest?

Longest: \_\_\_\_\_

Shortest: \_\_\_\_\_

4. For how many years have humans existed on Earth?

\_\_\_\_\_

5. For how many years have land plants existed on Earth?

\_\_\_\_\_

6. For how many years did non-avian dinosaurs exist on Earth?

\_\_\_\_\_

7. Did humans and dinosaurs exist at the same time? \_\_\_\_\_

8. What is the purpose of creating a geologic timeline?

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9. What surprised you or stood out to you while you did this activity?

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