Events in the History of the Universe Worksheet

What happens if you condense the entire history of the universe into the span of one year? If the universe was born on New Year's Day, and today is December 31st of that year, what happened over the course of those 12 months?

Follow these steps to build a scaled timeline for the history of the universe.

1. These are some important events in the history of the universe. Number them in the order that they occurred.

   6 Earth's atmosphere begins to accumulate oxygen
   3 Formation of our solar system
   10 Early human ancestors (australopithecines) appear
   9 The K-T event/extinction of the dinosaurs
   1 The Big Bang
   5 Primitive life on Earth appears
   2 Formation of galaxies
   11 Modern humans (*Homo sapiens*) appear
   14 Your birth
   8 First dinosaurs appear
   4 Formation of the Moon
   7 Sudden flourishing of animal life (Cambrian explosion)
   12 First astronomical observations (in ancient China)
   13 Galileo finds evidence that Earth is not the center of the universe

2. Match these approximate ages to the events from step 1.

14 billion years ago	Earth's atmosphere begins to accumulate oxygen
13 billion years ago	Formation of our solar system
4.6 billion years ago	Early human ancestors (australopithecines) appear
4.4 billion years ago	The K-T event/extinction of the dinosaurs
4 billion years ago	The Big Bang
2 billion years ago	Primitive life on Earth appears
540 million years ago	Formation of galaxies
245 million years ago	Modern humans (*Homo sapiens*) appear
65 million years ago	Your birth
5 million years ago	First dinosaurs appear
200,000 years ago	Formation of the Moon
5,000 years ago	Sudden flourishing of animal life (Cambrian explosion)
400 years ago	First astronomical observations (in ancient China)
[your age] years ago	Galileo finds evidence that Earth is not the center of the universe

(Note to teacher: Do not distribute this page until students have completed steps 1 and 2.)

3. If the universe is about 14 billion years old, then on our scale, 1 month is equal to a little more than 1 billion years.

   How many years does one day represent?

   How many years does one hour represent?

   How many years does one minute represent?

   How many years does one second represent?

   Complete this table. Then use it to help place the events in their proper place on a 12-month calendar.

Event	Actual Date	Date on 12-month calendar
The Big Bang	14 billion years ago	January 1st
Formation of galaxies	13 billion years ago	January 26th
Formation of our solar system	4.6 billion years ago	October 3rd
Formation of the Moon	4.4 billion years ago	October 8th
Primitive life on Earth appears	4 billion years ago	October 19th
Earth's atmosphere begins to accumulate oxygen	2 billion years ago	November 9th
Sudden flourishing of animal life (Cambrian explosion)	540 million years ago	December 17th
First dinosaurs appear	245 million years ago	December 26th
The K-T event/extinction of the dinosaurs	65 million years ago	December 29th
Early human ancestors (australopithecines) appear	5 million years ago	December 31st 9:00pm
Modern humans (*Homo sapiens*) appear	200,000 years ago	December 31st 11:53pm
First astronomical observations (in ancient China)	5,000 years ago	December 31st, 11:59.51 p
Galileo finds evidence that Earth is not the center of the universe	400 years ago	December 31st 11:59:59.1
Your birth	_____ years ago	Just before 12:00 midnight 11:59.59.96

4. Now mark these events on your 12-month calendar or create your own timeline of events. llustrate what you know about each event.