

SCALE – TIMELINES

Preparation

- Scale — Timelines Part I Worksheet
- Big History Project Timeline

Purpose

Timelines are used as analytical tools in history, and they will be used in this way throughout the course. However, before beginning the analysis process, students have to know how to read timelines. The Big History timeline is more detailed and complicated than the average timeline, and if you help your students learn how it works and what it represents, you'll provide them with some of the knowledge they need to both analyze and construct timelines. In this activity, students gain a deeper understanding of the important role scale plays in timelines by reviewing some of their key features.

Process

Part I Creating Timelines

Break the class into four groups. If your class is large, you may decide to break them into more groups and give some groups the same timeline to create. Give each group the blank timeline from the Scale — Timelines Part I Worksheet. Assign a timeline to each group (see below for descriptions of Timelines A, B, C, and D).

Each group must place the events listed on their timeline. They should start by placing a start and end date on their timeline. Then, they should place the other two events at approximately the right place (in relation to the start and end dates) on the timeline. For an added bonus, students should add markings to the timeline that evenly break up the time period covered (for example, every year, every million years, or every billion years). Finally, students should decide on a name for their timeline, one that connects all of the events.

Timeline A

- Big Bang (13.8 billion years ago)
- The first stars light up (13.6 billion years ago)
- The formation of our Sun (4.5 billion years ago)
- Early humans appear (1 million years ago)

Timeline B

- Birth years of students in the group
- When they started school
- When they went to junior high
- When they're supposed to graduate from high school

Timeline C

- Birth of Krishna (3228 BCE)
- Fall of the Western Roman Empire (476)
- Start of WWII (1939)
- The first time humans landed on the moon (1969)

Timeline D

- Birth of Newton (1642)
- Newton finishes his undergraduate studies at Cambridge University (1665)
- Newton publishes *Mathematical Principles of Natural Philosophy* (1687)
- Death of Newton (1726)

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Once the timelines are completed, post them somewhere in the room so that the class can see them next to each other. Then, ask students the following questions.

1. How did each group come up with a name for their events?

Tell them that the process of naming and grouping events in time is called “periodization.” This is just an introduction to the term. They’ll learn more about periodization in later units.

2. In what directions do the timelines read?

Most or all of your students probably constructed a timeline that reads from left to right. Let them know that while this reflects the convention we see in most timelines, some cultures read them from right to left, and some timelines are meant to be read vertically.

3. On what scale are these timelines?

Discuss the point that while all of the lines are the same sizes, the scales are actually very different for each timeline. Note in particular that Timeline A represents roughly 14 billion years while Timeline B might represent only 14 years.

4. Without making the actual line any longer, how could they put all of these timelines together into one in such a way that it’s still possible to see all of the events and periods of time?

Students may not come up with a lot of answers for this—it’s a hard question. Note that if you were to place Timeline B on Timeline A, it would be far too small to read. In fact, all of the other timelines would be too small to read on Timeline A.

Part II The Big History Project Timelines

Now, let’s take a look at the Big History Project Timeline. This is a much bigger and much more complicated timeline than the ones the class just created. For now, students should pay attention to the scale of the timeline. If possible, give the students a couple of minutes to explore the timeline on their own. If not, lead the class through an exploration. Try to look at one detail or event in each section of the timeline. Next, ask the students what they notice about scale. You might have them discuss the following questions in pairs or small groups and then come together as a class to review.

- Is the scale consistent throughout?

Students should note (or you should point out) that the scale actually changes across the Big History timeline. At each bend in the timeline, there is a change in scale.

- Why do they think the Big History timeline has these bends?

Make sure that you discuss the idea that Big History spans a large amount of time and that some time periods have a lot more happening than others. If they were to represent each time period in the exact same way, the timeline would either be enormous or they would have to leave out some details that are very important to the history of the Universe.

Now, have them revisit the question of how to get all of the timelines they created at the beginning of the lesson onto one timeline. Would they do it in the same way that Big History did it—by changing scale using bends in the timelines—or would they try another method?

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Directions: Break the class into four groups and ask each group to create a blank timeline using the worksheet on the next page. Then, assign each team one of the following groupings of data to place on their timelines. Explain that in addition to labeling each event on the timeline, students should also include the following:

1. Start date
2. End date
3. The timeline title, which should represent the data on it.

Timeline A

- Big Bang (13.8 billion years ago)
- The first stars light up (13.6 billion years ago)
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Process

Part I Creating Timelines

Your teacher will break the class into groups. Each group will get a blank timeline from the Scale: Timelines Worksheet. Your teacher will then assign each group their timeline (see below for descriptions of Timelines A, B, C, and D).

Place the events listed on your timeline. To start, place a start and end date on your timeline. Then, place the other two events at approximately the right place on your timeline in relation to the start and end dates. For an added bonus, add markings to the timeline that evenly break up the time period covered (each mark might represent every year, every hundred years, or every billion years, for example). Finally, your group should decide on a name for your timeline that connects all of the events.

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1. How did each group come up with a name for their events?
2. In what directions do the timelines read?
3. On what scale are these timelines?
4. Without making the actual line any longer, how could they put all of these timelines together into one in such a way that it's still possible to see all of the events and periods of time?

Part II The Big History Project Timelines

Now, let's take a look at the Big History Project Timeline. This is a much bigger and much more complicated timeline than the ones you just created. For now, pay attention to the scale of the timeline. Take a couple of minutes to explore the timeline on your own. Try to look at one detail or event in each section of the timeline. Next, discuss with your group or your class what you notice about scale by answering the following questions.

- Is the scale consistent throughout?
- Why do you think the Big History timeline has “bends”?
- After looking at this timeline, would you change how you did your timelines to get all four on the same sheet of paper?

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Name: Date:

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