

HAS THE SCIENTIFIC REVOLUTION ENDED?

Purpose

In this activity, students will be asked to think about whether or not the scientific revolution has ever ended. Thinking about the progress of science prior to the Age of Enlightenment and the progress since gets students considering what counts as science, what makes a revolution, and if it's possible for a revolution to go on for over 300 years. In addition, this debate compels students to reflect on what is currently happening in science, which helps them see how they are a part of historical narratives.

Preview

The Age of Enlightenment was ushered in as part of the interconnectedness that began in the fourteenth century with the birth of modern day science. With people having more access to other people, and therefore resources, they had more access to ideas, which changed the way scholars looked at evidence and drew conclusions. During this period, the scientific method was developed, which is still used today. Along with this came new standards for what counted as science and how scientific thoughts and discoveries were accepted by society.

Many argue that this marked what can be referred to as the Scientific Revolution. What is unclear, however, is whether this was the start of the revolution, the end of the revolution, or just another part of it. What also isn't totally clear is what counts as science, what makes a revolution, and how long can a revolution actually last. For example, is history science? Is Big History science? These are questions that your students quickly thought about at the beginning of this lesson, and now they're going to take a stance and make an argument regarding the state and duration of the Scientific Revolution. More specifically, they'll answer this question: Did the Scientific Revolution end or is it still happening?

Process

Divide the class into two position groups: the Scientific Revolution is dead (Group 1); and the Scientific Revolution is alive (Group 2). One group will argue that the Scientific Revolution ended, and the other will argue that it has not. Tell your students that each group is responsible for researching its position and preparing an argument to support its point of view. They may use any of the information provided in the course as well as their own research to make their points.

Questions students might consider in preparing their argument:

- What counts as science?
- Who are the scientists?
- What is a revolution?
- How do you define a scientific revolution?
- Can a revolution really last for 300 years?
- How do we know if we are in the midst of a revolution?
- How do we know when something in history began and ended?

Remind students to use the Debate Prep Worksheet to help them prepare for their debate. Don't forget to review the Debate Format Guide with them so they're aware of how much time they have for each section of the debate. It's also helpful to remind them to look at the Debate Rubric as they prepare since this will help ensure they meet all debate criteria.

Use the Debate Rubric to grade the student groups and decide who argued their position more effectively.

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Introduction

Thinking about the progress of science prior to the Age of Enlightenment and the progress since gets students considering what counts as science, what makes a revolution, and if it's possible for a revolution to go on for over 300 years. In this debate activity, students will assume a position, build an argument in support of it, and defend it in an open debate within class.

Students will be assigned to “position groups”. One group will argue that the Scientific Revolution ended, and the other will argue that it has not. Questions students might consider in preparing their argument:

- What counts as science?
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Preparation for the activity

Assign students to one of these position groups:

- Position Group 1: Scientific Revolution is dead
- Position Group 2: Scientific Revolution is alive

Each group should spend 20 to 30 minutes preparing their position. Everyone in the group will work together to identify material to support the group's position, and to create a list of arguments that other groups might use to argue against them group. One or two students might each work on the opening and closing statements while the group is conducting research; however, the entire group should edit these statements. Finally, each group will need to decide who will read the opening statement, rebuttal, and closing statement. While listening to the presentation of other groups, everyone should be taking notes for the rebuttal of the other teams' opening statements.

Have students work to generate ideas for the debate and prepare opening and closing statements. Students can use the graphic organizer provided to help formulate their positions. In addition to any research they do — in

the library or through the Internet, for example — students should be sure to consult the resources on the Big History Project website and their notes from the discussion of the material in Unit 8. Be sure to circulate the room and check in on student progress.

Debate format

Opening statements

Each group will read their opening statement for the debate.

Groups meet to prepare rebuttals

Groups will spend 10 to 15 minutes preparing a rebuttal of the other groups' opening statements.

Rebuttals

Each group will read their rebuttal in response to the other groups opening statement.

Groups meet to modify closing statements

Each group will take 5 to 10 minutes to revise their closing statements to account for the other group's rebuttals.

Closing statements

Each group will read their closing statement for the debate.

Vote on the outcome

Once the debate is complete, ask students to vote for the group that made the best argument for its position. Remind them that the criterion is which group made the best argument, not which group argued the position they agree with.

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Process

Your teacher will divide your class into two position groups: the Scientific Revolution is dead (Group 1); and the Scientific Revolution is alive (Group 2). One group will argue that the Scientific Revolution ended, and the other will argue that it has not. Each group is responsible for researching its position and preparing an argument to support its point of view. You may use any of the information provided in the course as well as your own research to make your points.

Questions you might consider in preparing your argument:

- What counts as science?
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- How do we know when something in history began and ended?

Remember to use the Debate Prep Worksheet to help prepare for the debate. Don't forget to review the Debate Format Guide so you're aware of how much time you have for each section of the debate. It's also helpful to revisit the Debate Rubric as you prepare since this will help ensure you meet all debate criteria. Your teacher will likely use the Debate Rubric to decide which group argued their position more effectively.

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Preparation for the activity

Your teacher will assign you to one of the position groups below. You will be responsible for researching and arguing this position. As in any debate, you may be assigned to defend a position with which you do not actually agree. You don't need to agree with the position, though you need to understand the perspective of those that do. Use the Internet and course materials to help you in your research.

- Position Group 1: Scientific Revolution is dead
- Position Group 2: Scientific Revolution is alive

Each group will spend 20 to 30 minutes preparing their position. Everyone in the group will work together to identify material to support the group's position, and to create a list of arguments that other groups might use to argue against your group. One or two of your team members might each work on the opening and closing statements while the rest of the group is conducting research; however, the entire group should edit these statements. As a team, decide who will be reading your group's opening statement, rebuttal, and closing statements. While listening to the

presentation of other groups, be sure to take for your rebuttal of the other teams' opening statements.

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Groups meet to modify closing statements

Each group will take 5 to 10 minutes to revise their closing statements to account for the other group's rebuttals.

Closing statements

Each group will read their closing statement for the debate.

Vote on the outcome

Once the debate is over, you'll vote for the group that made the best argument for its position. Remember, you're not voting on which position you agree with, you're voting on which team argued their position best.

