

# IS CHANGE ACCELERATING? DEBATE

## Purpose

In this activity students will be asked to apply what they have learned about acceleration by examining whether or not rates of innovation can keep up with rates of acceleration. Understanding this helps students to better predict the state of our world in the future.

## Practices

### *Claim testing*

Remind students that a good debater backs up their own assertions with support, and demands their opponents do the same. Make sure the language of claim testing is fresh in your students' minds as they prepare to debate.

## Preview

Humans have been around for about 200,000 years, and for almost all of that time the rates of innovation and of human population growth were very slow. The pace of these rates picked up with the advent of agrarian civilizations about 11,000 years ago, increased even more as the Industrial Revolution began to reorganize society about 250 years ago, and really took off in the past century. It is staggering to realize that, after nearly a quarter million years of foraging and eleven millennia of farming, we have moved from the first steam engine to the Internet age of information in just a bit more than two centuries. Also, in just the past 100 years the population has shot up from 1.6 billion to 6.1 billion, a 400 percent increase! Of course, all of this innovation and increase in population has come with both positive and negative results.

Thus far innovation has kept pace with acceleration and population growth, but how long can that last? The population is not likely to level off before we reach 8 billion, but, perhaps more important than this, agriculture is confronting the additional stress of climate change. Researchers forecast much more severe weather patterns in decades to come, including more extended droughts, stronger hurricanes, more flooding, and milder winters that could increase insect populations, among other problems. There is no doubt that accelerated growth and innovation have served us well in the modern world, but will we continue to innovate rapidly enough to stay ahead of what might be an imminent worldwide catastrophe, or have we created a Frankenstein monster that is impossible to control?

## Process

Divide the class into two "position" groups. One group will argue that innovation can keep up with acceleration, and the other group will argue that it cannot. Tell your students that each group is responsible for researching its position and preparing an argument to support its point of view.

Questions students should consider:

- What are some of the problems we face as a result of our success in creating the modern world?
- How could these problems be addressed, if at all? What might happen if we do not address these problems?

Remind students to use the Debate Prep Worksheet to help them prepare for their debate. Don't forget to review the Debate Format Guide so they are 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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## Preparation for the activity

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Questions students should consider:

- What are some of the problems we face as a result of our success in creating the modern world?
- How could these problems be addressed, if at all? What might happen if we do not address these problems?

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 2. 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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Thus far innovation has kept pace with acceleration and population growth, but how long can that last? The population is not likely to level off before we reach 8 billion, but, perhaps more important than this, agriculture is confronting the additional stress of climate change. Researchers forecast much more severe weather patterns in decades to come, including more extended droughts, stronger hurricanes, more flooding, and milder winters that could increase insect populations, among other problems. There is no doubt that accelerated growth and innovation have served us well in the modern world, but will we continue to innovate rapidly enough to stay ahead of what might be an imminent worldwide catastrophe, or have we created a Frankenstein monster that is impossible to control?

## Process

Your teacher will divide your class into two “position” groups. One group will argue that innovation can keep up with acceleration, and the other group will argue that it cannot. Your group is responsible for researching its position and preparing an argument to support its point of view.

Questions your group should consider:

- What are some of the problems we face as a result of our success in creating the modern world?
- How could these problems be addressed, if at all? What might happen if we do not address these problems?

Use the Debate Prep Worksheet to help you prepare for the debate. Don't forget to review the Debate Format Guide so you are aware of how much time you have for each section of the debate. It's also helpful to look at the Debate Rubric as you prepare since this will help ensure that you meet all debate criteria. This is also what your teacher will use to grade your performance.

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Thus far innovation has kept pace with population growth, but how long can that last? The population is not likely to level off before we reach 8 billion, but, perhaps more important than this, agriculture is confronting the additional stress of global warming. Researchers forecast much more severe weather patterns in decades to come, including more extended droughts, stronger hurricanes, more flooding, milder winters that could increase insect populations, among other problems. There is no doubt that accelerated growth and innovation have served us well in the modern world, but will we continue to innovate rapidly enough to stay ahead of what might be an imminent worldwide catastrophe? Or have we created a Frankenstein monster that is impossible to control?

Your teacher will divide your class into two “position” groups. Your group will research its position and prepare an argument addressing the problems we face due to accelerated rates of innovation and population growth and whether continued acceleration will solve them or just make them worse.

- What are some of the problems we face as a result of our success in creating the modern world?
- How could these problems be addressed, if at all? What might happen if we do not address these problems?

## Preparation for the activity

Your teacher will assign you to one of the two position groups. Your group 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.

- PG 1: Here’s the plan.
- PG 2: We’re doomed!

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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*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.

