

GENETICALLY MODIFIED FOODS: DEBATE

ACTIVITY OVERVIEW

Activity Type:	Research
Activity Series:	Genetics
Summary of Activity:	Students will work together in groups to conduct research on and debate the use of genetically modified foods.
Grade Levels:	6–8
Discipline/Subject:	Science/Biology
Duration:	1–2 Hours
Resources Needed:	<i>Gale In Context: Middle School</i>
Alternate Resources:	<i>Gale In Context: High School</i>

LEARNING OUTCOMES

Students will be able to:

- argue in defense of or opposition to the use of genetically modified foods.

SKILLS USED

Students will conduct **research** using an online database. Students will **read** and **annotate** informational texts for understanding. Students will **work in groups** to conduct a **debate**.

ACTIVITY SEQUENCE

BEFORE CLASS

- Divide the class into four separate and roughly even groups: PRO 1, PRO 2, CON 1, and CON 2. If possible, attempt to create heterogeneous groupings, with mixes of advanced, mainstream, and struggling students.
- Prepare enough copies of the following debate expectations for each student to have one:
 - **Debate Expectations**
 - The debate will follow the order below. Each group has particular sections they are responsible for.
 - 1. PRO 1: Opening statement (1-3 minutes)
 - Capture your audience's attention with a hook
 - Introduce the topic
 - Introduce your team's stance and reasons
 - 2. CON 1: Opening statement (1-3 minutes)
 - 3. PRO 2: Argument point #1 (2-5 minutes)
 - Present one of your team's reasons, supporting it with evidence from your research.
 - 4. CON 2: Argument point #1 (2-5 minutes)
 - 5. PRO 1: Argument point #2 (2-5 minutes)
 - 6. CON 1: Argument point #2 (2-5 minutes)
 - 7. PRO 2: Closing statement (1-3 minutes)
 - Summarize your argument (stance and points)
 - Appeal to your audience to do something in response to your argument
 - 8. CON 2: Closing statement (1-3 minutes)

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OPENING ACTIVITY

Suggested timing: 10–20 minutes

- Provide students with the debate expectations and discuss them as a class, clarifying points of confusion and answering questions.
- Have students organize themselves into their assigned groups.
- Assign two groups to research and support the idea that genetically modified foods are good (Pro 1 and Pro 2). These groups will begin by reading and taking notes on the article, “The Advantages of Genetically Modified Foods” (see “Sources”).
- Assign the other two groups to research and support the idea that genetically modified foods are bad (Con 1 and Con 2). These groups will begin by reading and taking notes on the article, “Concerns About Genetically Modified Foods” (see “Sources”).

RESEARCH

Suggested timing: 20–40 minutes

- Have students access *Gale In Context: Middle School*.
- Students should conduct further research to find additional sources to use in support of their side of the argument. Remind students to take notes and cite their sources as they go.

DISCUSSION I

Suggested timing: 10–20 minutes

- Once students have completed their research, have them work with the other group on their side (i.e., Pro 1 with Pro 2, and Con 1 with Con 2) to organize their notes into a single argument for the debate.

DISCUSSION II

Suggested timing: 20–40 minutes

- Conduct the debate according to the order presented in the handout.

SOURCES

Gale In Context: Middle School

Hillstrom, Kevin. “The Advantages of Genetically Modified Foods.” *Genetically Modified Foods*, Lucent Books, 2012, pp. 38-50. Nutrition & Health. *Gale In Context: Middle School*, <https://link.gale.com/apps/doc/CX1756600011/MSIC?sid=ICFE>

Hillstrom, Kevin. “Concerns About Genetically Modified Foods.” *Genetically Modified Foods*, Lucent Books, 2012, pp. 51-66. Nutrition & Health. *Gale In Context: Middle School*, <https://link.gale.com/apps/doc/CX1756600012/MSIC?sid=ICFE>

DIFFERENTIATING INSTRUCTION

To accommodate your classroom's range of learning styles and personality types, here are some suggested modifications and strategies for this lesson. Implement as many or as few of these modifications to the lesson as deemed necessary.

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Struggling Learners

- | | |
|---------------------|---|
| Research | <ul style="list-style-type: none">• Provide groups with a “pre-approved” list of sources for their side to choose from (rather than having to find sources themselves from the various databases and websites). |
| Discussion I | <ul style="list-style-type: none">• Provide groups with templates for organizing their arguments.• Show students samples of each stage of debate (opening statements, arguments, etc.). |

Advanced Learners

- | | |
|--------------------------------------|--|
| Research/
Discussion I/II | <ul style="list-style-type: none">• During the Research stage, students should read the opposing groups' assigned article. Using that, students should select the point they believe to be the most likely for the other side to use. They should prepare a rebuttal to this point and present it during one of the two Argument Points for their side during the debate. |
| Discussion II | <ul style="list-style-type: none">• Have students look up and identify specific public speaking techniques (e.g., eye contact, gestures, dramatic pauses) they wish to practice and use during the debate. Have students submit these techniques to you (with a brief description of uncommon ones) ahead of time, and provide additional feedback on their use of the techniques during the debate. |

ALTERNATE DATABASES

Gale In Context: High School

Hillstrom, Kevin. “The Advantages of Genetically Modified Foods.” *Genetically Modified Foods*, Lucent Books, 2012, pp. 38-50. Nutrition & Health. *Gale In Context: High School*, <https://link.gale.com/apps/doc/CX1756600011/SUIC?sid=ICFE>

Hillstrom, Kevin. “Concerns About Genetically Modified Foods.” *Genetically Modified Foods*, Lucent Books, 2012, pp. 51-66. Nutrition & Health. *Gale In Context: High School*, <https://link.gale.com/apps/doc/CX1756600012/SUIC?sid=ICFE>

COMMON CORE STANDARDS

Standard Source: *Common Core State Standards Initiative* (2010)

Grade 6

- **CCSS.ELA-Literacy.RST.6-8.1** Cite specific textual evidence to support analysis of science and technical texts.
- **CCSS.ELA-Literacy.RST.6-8.10** By the end of grade 8, read and comprehend science/technical texts in the grades 6-8 text complexity band independently and proficiently.
- **CCSS.ELA-Literacy.WHST.6-8.7** Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.
- **CCSS.ELA-Literacy.WHST.6-8.8** Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.

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- **CCSS.ELA-Literacy.WHST.6-8.9** Draw evidence from informational texts to support analysis, reflection, and research.
- **CCSS.ELA-Literacy.SL.6.4** Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate eye contact, adequate volume, and clear pronunciation.
- **CCSS.ELA-Literacy.SL.6.6** Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (See grade 6 Language standards 1 and 3 for specific expectations.)

Grade 7

- **CCSS.ELA-Literacy.RST.6-8.1** Cite specific textual evidence to support analysis of science and technical texts.
- **CCSS.ELA-Literacy.RST.6-8.10** By the end of grade 8, read and comprehend science/technical texts in the grades 6-8 text complexity band independently and proficiently.
- **CCSS.ELA-Literacy.WHST.6-8.7** Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.
- **CCSS.ELA-Literacy.WHST.6-8.8** Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.
- **CCSS.ELA-Literacy.WHST.6-8.9** Draw evidence from informational texts to support analysis, reflection, and research.
- **CCSS.ELA-Literacy.SL.7.4** Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.
- **CCSS.ELA-Literacy.SL.7.6** Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (See grade 7 Language standards 1 and 3 here for specific expectations.)

Grade 8

- **CCSS.ELA-Literacy.RST.6-8.1** Cite specific textual evidence to support analysis of science and technical texts.
- **CCSS.ELA-Literacy.RST.6-8.10** By the end of grade 8, read and comprehend science/technical texts in the grades 6-8 text complexity band independently and proficiently.
- **CCSS.ELA-Literacy.WHST.6-8.7** Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.
- **CCSS.ELA-Literacy.WHST.6-8.8** Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.
- **CCSS.ELA-Literacy.WHST.6-8.9** Draw evidence from informational texts to support analysis, reflection, and research.
- **CCSS.ELA-Literacy.SL.8.4** Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume, and clear pronunciation.
- **CCSS.ELA-Literacy.SL.8.6** Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (See grade 8 Language standards 1 and 3 here for specific expectations.)

NGSS STANDARDS

Standard Source: *Next Generation Science Standards* (2013)

Grades 6–8

- **MS-LS4-5** Gather and synthesize information about technologies that have changed the way humans influence the inheritance of desired traits in organisms.