Literacy Design Collaborative

Genetically Modified Foods… Do the Benefits Outweigh the Safety Concerns?

by Cathy Y. Sligh

The use of genetically modified organisms by the food industry has become a controversial issue. Students will read various texts about the pros and cons of genetically modified organisms. They will develop and support an argument about whether GMOs will benefit or harm society. Completing this module will reinforce previously studied concepts, such as DNA, protein synthesis and basic genetics concepts.

GRADES	DISCIPLINE	COURSE
7 - 12	Science	Biology

Section 1: What Task?

Teaching Task

Task Template 2 - Argumentation

Do the benefits of genetically modified organisms outweigh the possible safety concerns? After reading informational texts, write an editorial for "The New York Times Learning Blog" in which you address the question and argue whether genetically modified organisms are valuable or detrimental to society . Support your position with evidence from the text(s).

D 1 Be sure to acknowledge competing views.

D 2 Give at least one example/s from past or current events to illustrate and clarify your position.

Standards

Common Core State Standards for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects

RST.9-10.1 Focus

Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.

RST.9-10.2 Focus

Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text.

RST.9-10.4 Focus

Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9—10 texts and topics.

RST.9-10.10

By the end of grade 10, read and comprehend science/technical texts in the grades 9—10 text complexity band independently and proficiently.

WHST.9-10.1 Focus

Write arguments focused on discipline-specific content.

WHST.9-10.1.a

Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.

WHST.9-10.1.b

Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.

WHST.9-10.1.c

Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.

WHST.9-10.1.d

Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.

WHST.9-10.1.e

Provide a concluding statement or section that follows from or supports the argument presented.

WHST.9-10.4

Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

WHST.9-10.5

Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

RST.9-10.8

Focus

Assess the extent to which the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem.

WHST.9-10.9

Draw evidence from informational texts to support analysis, reflection, and research.

WHST.9-10.10

Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

Georgia Science Performance Standards

SCSh1

Students will evaluate the importance of curiosity, honesty, openness, and skepticism in science.

SCSh1.a

Exhibit the above traits in their own scientific activities.

SCSh1.b

Recognize that different explanations often can be given for the same evidence.

SCSh1.c

Explain that further understanding of scientific problems relies on the design and execution of new experiments which may reinforce or weaken opposing explanations.

SCSh6.b

Write clear, coherent accounts of current scientific issues, including possible alternative interpretations of the data.

SCSh6.c

Use data as evidence to support scientific arguments and claims in written or oral presentations.

SCSh6.d

Participate in group discussions of scientific investigation and current scientific issues.

SB2.b

Explain the role of DNA in storing and transmitting cellular information.

SB2.f

Focus

Examine the use of DNA technology in forensics, medicine, and agriculture.

SB4.d

Assess and explain human activities that influence and modify the environment such as global warming, population growth, pesticide use, and water and power consumption.

SB5.d

Relate natural selection to changes in organisms.

Texts

- **Straight Talk on Genetically Engineered Foods - Center for Science in the Public Interest**
- **The Truth About GMOs.docx**
- **Pros and Cons of GM Foods.docx**
- **Truth about GM Food-SCI AM.docx**
- **Salmon Will Be the 1st GM**
- **Monarch Butterfly.docx**
- **Impact on Human Health of GMO in Foods**
- **No-Should Genetically Modified Foods Be Labeled.docx**
- **Yes-Should Genetically Modified Foods Be Labeled.docx**

LDC Student Work Rubric - Argumentation

	Not Yet	Approaches Expectations	Meets Expectations	Advanced
	1	2	3	4
Focus	Attempts to address prompt, but lacks focus or is off-task.	Addresses prompt appropriately and establishes a position, but focus is uneven. D. Addresses additional demands superficially.	Addresses prompt appropriately and maintains a clear, steady focus. Provides a generally convincing position. D: Addresses additional demands sufficiently	Addresses all aspects of prompt appropriately with a consistently strong focus and convincing position. D: Addresses additional demands with thoroughness and makes a connection to claim.
Controlling Idea	Attempts to establish a claim, but lacks a clear purpose.	Establishes a claim.	Establishes a credible claim.	Establishes and maintains a substantive and credible claim or proposal.
Reading/Research	Attempts to reference reading materials to develop response, but lacks connections or relevance to the purpose of the prompt.	Presents information from reading materials relevant to the purpose of the prompt with minor lapses in accuracy or completeness.	Accurately presents details from reading materials relevant to the purpose of the prompt to develop argument or claim.	Accurately and effectively presents important details from reading materials to develop argument or claim.
Development	Attempts to provide details in response to the prompt, but lacks sufficient development or relevance to the purpose of the prompt.	Presents appropriate details to support and develop the focus, controlling idea, or claim, with minor lapses in the reasoning, examples, or explanations.	Presents appropriate and sufficient details to support and develop the focus, controlling idea, or claim.	Presents thorough and detailed information to effectively support and develop the focus, controlling idea, or claim.
Organization	Attempts to organize ideas, but lacks control of structure.	Uses an appropriate organizational structure for development of reasoning and logic, with minor lapses in structure and/or coherence.	Maintains an appropriate organizational structure to address specific requirements of the prompt. Structure reveals the reasoning and logic of the argument.	Maintains an organizational structure that intentionally and effectively enhances the presentation of information as required by the specific prompt. Structure enhances development of the reasoning and logic of the argument.
Conventions	Attempts to demonstrate standard English conventions, but lacks cohesion and control of grammar, usage, and mechanics. Sources are used without citation.	Demonstrates an uneven command of standard English conventions and cohesion. Uses language and tone with some inaccurate, inappropriate, or uneven features. Inconsistently cites sources.	Demonstrates a command of standard English conventions and cohesion, with few errors. Response includes language and tone appropriate to the audience, purpose, and specific requirements of the prompt. Cites sources using appropriate format with only minor errors.	Demonstrates and maintains a well-developed command of standard English conventions and cohesion, with few errors. Response includes language and tone consistently appropriate to the audience, purpose, and specific requirements of the prompt. Consistently cites sources using appropriate format.
Content Understanding	Attempts to include disciplinary content in argument, but understanding of content is weak; content is irrelevant, inappropriate, or inaccurate.	Briefly notes disciplinary content relevant to the prompt; shows basic or uneven understanding of content; minor errors in explanation.	Accurately presents disciplinary content relevant to the prompt with sufficient explanations that demonstrate understanding.	Integrates relevant and accurate disciplinary content with thorough explanations that demonstrate in-depth understanding.

Background for Students

Students should have a solid understanding of DNA, protein synthesis, and basic genetic concepts before completing this module. This module applies those concepts as students study a current real-world application.

Extension

Students will research two articles written from different perspectives about the issue of labeling GM foods, which is being discussed by many states at this time. They will engage in a Socratic seminar to discuss the opposing viewpoints of these authors and their credibility.

Section 2: What Skills?

Preparing for the Task

TASK ENGAGEMENT: Ability to connect the task and new content to existing knowledge, skills, experiences, interests, and concerns.

TASK ANALYSIS: Ability to understand and explain the task's prompt.

RUBRIC ANALYSIS: Ability to understand the scoring elements and levels of performance

Reading Process

PRE-READING > PREVIEWING: Ability to access prior knowledge as it relates to new concepts.

ACTIVE READING > NOTE-TAKING AND ESSENTIAL VOCABULARY: Ability to select important facts and passages for use in one's own argumentative writing and to identify and master terms essential to understanding a text.

POST-READING > PRIORITIZING EVIDENCE: Ability to determine the strongest evidence that supports the claim.

POST-READING > ACADEMIC INTEGRITY: Ability to use and credit sources appropriately.

Transition to Writing

BRIDGING CONVERSATION > PREPARING FOR WRITING: Ability to begin linking reading results to writing task.

Writing Process

CONTROLLING IDEA: Ability to establish a claim and consolidate information relevant to task.

PLANNING THE WRITING: Ability to develop a line of thought and text structure appropriate to an argumentative task.

DEVELOPMENT: Ability to construct an initial draft with an emerging line of thought and structure.

REVISION AND EDITING: Ability to proofread your own and another student's writing to determine if all elements of the rubric are met.

COMPLETION: Ability to submit final piece that meets expectations.

Section 3: What Instruction?

PACING	SKILL AND DEFINITION	PRODUCT AND PROMPT	SCORING GUIDE	INSTRUCTIONAL STRATEGIES
Preparing for the Task				
15 mins	**TASK ENGAGEMENT**: Ability to connect the task and new content to existing knowledge, skills, experiences, interests, and concerns.	**"WHAT DO YOU KNOW?"** Answer these Genetically Modified Foods Survey Questions by holding up a green strip for "YES" and a red strip for "NO." If you are "UNSURE," hold up both strips. 1. I have eaten a genetically modified food. 2. Genetically modified foods are mostly grown in Japan and China. 3. Over 85% of all processed foods contain GM foods. 4. GM foods were banned in Europe. 5. A genetically modified food is the sam as selecting for a good trait in food.	None	• Give each student 1 green and 1 red strip of paper. • Ask the questions above to determine what the students know, without engaging in discussion while the activity is in progress. Answers to the questions: 1. I have eaten a genetically modified food. *Most of us have consumed a GM food since about 60-80% of all processed foods contain a GM food.* 2. Genetically modified foods are mostly grown in Japan and China. *Most GM foods are grown in the USA.* 3. Over 60% of all processed foods contain GM foods. *True; as a matter of fact, it may be closer to 80%* *4.* GM foods were banned in Europe. *True, banned in the 1990s* 5. A genetically modified food is the same as selecting for a good trait in a food. *False: Foods have been selected for "best traits" since man began cultivating and choosing. GM foods have genetic manipulation; this technology has only existed in the last several decades.*
	Standards: **RST.9-10.8** : Assess the extent to which the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem.			

PACING	SKILL AND DEFINITION	PRODUCT AND PROMPT	SCORING GUIDE	INSTRUCTIONAL STRATEGIES
15 mins	**TASK ANALYSIS**: Ability to understand and explain the task's prompt.	**ANNOTATED TEACHING TASK** **(A) Annotate the teaching task by** 1. drawing 1 line under what you must read and give possible examples of those texts. 2. circling the type of writing product you must create. 3. drawing 2 lines under what the focus of your argument will be. 4. putting a? above any words you do not know. **(B) Trade with a partner and try to** 1. Check answers and see if you agree. 2. Be ready to ask questions.	Completion of Teaching Task annotation and collaboration with partner	**TEACHER MODELING before students complete activity:** 1) Present a different sample teaching task (on a PowerPoint, SmartBoard, chart paper, or white/chalk board). (2) Model the above activity by ● drawing 1 line under what you must read and give possible examples of those texts. ● circling the type of writing product you must create. ● drawing 2 lines under what the focus of your argument will be. ● putting a ? above any words you do not know. (3) Ask students to pose questions they might want answers to about this teaching task. (4) Then ask students to complete the activity above.
	Standards: **CCR.R.2** : Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas. **CCR.W.10** : Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.			
	Additional Attachments: **ANNOTATED_TEACHING_TASK.docx**			

PACING	SKILL AND DEFINITION	PRODUCT AND PROMPT	SCORING GUIDE	INSTRUCTIONAL STRATEGIES
25 mins	**TASK ANALYSIS**: Ability to understand and explain the task's prompt.	**EDITORIAL PREVIEW** 1. Pair up and read silently the sample editorial. 2. With your partner, draw a straight line around the author's claim and a squiggly line around the counterclaim. 3. Look for evidence to support each, drawing a red line under evidence that supports the claim and a blue line under evidence that supports the counterclaim. 4. Discuss with your partner the questions on the board, and be ready to share your answers.	Student completion of article annotation and participation in discussion.	1. Ask students the following questions: What is an editorial? Have you ever read any? Where would you find one? What do you think is the purpose of an editorial? 2. Review the terms claim, counterclaim, and evidence. 3. Tell students to work in pairs to read the editorial, "Gosh Dangit." As they read, have them follow the instructions stated in the prompt to determine the author's claim and counterclaim and evidence to support each. 4. Then ask student pairs to discuss the following questions, written on the board: ● What is the opinion or call to action in this editorial? ● What evidence does it use to make its argument? ● How persuasive do you find the editorial? Is it effective? ● What do you notice about the language and tone of the editorial, as well as other choices the writer has made? 5. Circulate around the room, assisting students who need additional help. 6. Call on students to share their answers. NOTE: If students have practice with writing editorials, this mini-task can be eliminated. Resource: http://learning.blogs.nytimes.com//2014/02/07/for-the-sake-of-argument-writing-persuasively-to-craft-short-evidence-based-editorials/

Standards:

RST.9-10.8 : Assess the extent to which the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem.

RST.9-10.1 : Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.

RST.9-10.2 : Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text.

Additional Attachments:

Editorial - Gosh Dangit.docx

PACING	SKILL AND DEFINITION	PRODUCT AND PROMPT	SCORING GUIDE	INSTRUCTIONAL STRATEGIES
20 mins	**RUBRIC ANALYSIS**: Ability to understand the scoring elements and levels of performance	**ANNOTATING THE RUBRIC** Read the "Meets Expectations" column on the LDC rubric. Underline the important words which describe what you need to do to reach the "Meets Expectations." Put a ? above any words you do not understand. Compare the "Meets Expectations" column to "Exceeds Expectations" column to determine the additional expectations for the higher level of performance.	Completion of annotation activity.	• Tell students to work in pairs or small groups to complete the activity. • Ask a few students to share their answers with the class. • Answer any questions students may have about the expectations.
	Standards: **WHST.9-10.1** : Write arguments focused on discipline-specific content.			
	Additional Attachments: **Rubric for Analysis**			
Reading Process				
20 mins	**PRE-READING > PREVIEWING**: Ability to access prior knowledge as it relates to new concepts.	**VIDEO QUESTIONS** 1. Watch the video "What Is a Genetically Modified Food?" Listen carefully. 2. With your elbow partner, answer the 5 questions on the board. 3. Share with another pair to check your answers. 4. Discuss as a whole class.	Completion of questions and participation in discussion.	Write these question on the board to focus students on the important information in the video: 1. What is artificial selection? Is this a new process? 2. What is the meaning of the word TRANSGENIC? 3. In the video, what made the pig glow? 4. Name a few other examples of genetically modified organisms (GMOs). 5. How does the speaker feel about GMOs?
	Standards: **RST.9-10.1** : Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions. **RST.9-10.2** : Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. **SL.9-10.3** : Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric, identifying any fallacious reasoning or exaggerated or distorted evidence.			
	Additional Attachments: **"What Is a Genetically Modified Food?"**			

PACING	SKILL AND DEFINITION	PRODUCT AND PROMPT	SCORING GUIDE	INSTRUCTIONAL STRATEGIES
35 mins	**ACTIVE READING > NOTE-TAKING AND ESSENTIAL VOCABULARY**: Ability to select important facts and passages for use in one's own argumentative writing and to identify and master terms essential to understanding a text.	**COLLABORATIVE NOTE-TAKING** 1. With a partner, read "The Truth About GMOs" . 2. On your graphic organizer, record benefits and disadvantages or safety concerns of genetically modified organisms (Column 1) and evidence to support each (Column 2). 3. In Column 3, record any pertinent information that might help you include reasoning or commentary to develop your argument. 4. At the bottom of the organizer, add any unknown content and academic vocabulary words with the definition, in your own words. 5. Include the necessary bibliographic information (Article title/Author/Publication/Date) before reading and taking notes.	The student reads the article and completes the graphic organizer appropriately.	**Give each student a copy of the graphic organizer. Discuss these questions (whole group)** 1. What is the purpose of taking notes? What are different note-taking strategies you use? 2. Look at the graphic organizer. What are you looking for in the article to complete the graphic organizer correctly? 3. Differentiate between an advantage and a disadvantage. 4. What is evidence and why is it important? 5. What is meant by reasoning or commentary? 6. What is the difference between content and academic vocabulary? 7. What information should you record about your source for APA citation? (Go over this with your students, if necessary) 8. Model the first 7 steps by reading, annotating and thinking aloud with the beginning section (through "The Pros")of the article. 9. Then ask student pairs to emulate Steps 1-7 as they complete the remainder of the article.

Standards:

RST.9-10.8 : Assess the extent to which the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem.

RST.9-10.5 : Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).

RST.9-10.2 : Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text.

RST.9-10.1 : Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.

Additional Attachments:

The Truth About GMOs.docx

NOTE-TAKING graphic organizer.docx

PACING	SKILL AND DEFINITION	PRODUCT AND PROMPT	SCORING GUIDE	INSTRUCTIONAL STRATEGIES
1 hr	**ACTIVE READING > NOTE-TAKING AND ESSENTIAL VOCABULARY**: Ability to select important facts and passages for use in one's own argumentative writing and to identify and master terms essential to understanding a text.	**NOTE-TAKING - ON YOUR OWN** Take notes from the assigned articles, using the graphic organizer. You will need one for each article. Before taking notes, it may be helpful to annotate the articles in the margins by defining unknown words, asking thoughtful questions and using the abbreviations "A" for ADVANTAGE and "D" for DISADVANTAGE/SAFETY CONCERN.	• Student reads articles and completes note-taking graphic organizers appropriately.	1. Instruct students to work individually (or in pairs for struggling students) to complete their note-taking strategies. 2. All students should read at least 4 of the texts: • "Pros and Cons of Genetically Modified Food" • "The Truth About Genetically Modified Food" • "The Impact on Human Health of Genetically Modified Organisms in Foods" • "Straight Talk on Genetically Engineered Foods" - This is a Question/Answer format to help students locate specific information. • "This Salmon Will Likely Be the First Genetically Modified Animal You Eat" • "In Midwest, Flutter May Be Far Fewer" - Monarch Butterfly

Standards:

RST.9-10.8 : Assess the extent to which the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem.

RST.9-10.5 : Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).

RST.9-10.4 : Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9—10 texts and topics.

RST.9-10.2 : Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text.

RST.9-10.1 : Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.

Additional Attachments:

NOTE-TAKING graphic organizer.docx

Pros and Cons of GM Foods.docx

Monarch Butterfly.docx

Salmon .docx

ImpactOnHumanHealthOfGeneticallyModifiedOrganismsInFoods.pdf

"Straight Talk on Genetically Engineered Food"

Truth about GM Food-SCI AM.docx

PACING	SKILL AND DEFINITION	PRODUCT AND PROMPT	SCORING GUIDE	INSTRUCTIONAL STRATEGIES
40 mins	**POST-READING > PRIORITIZING EVIDENCE**: Ability to determine the strongest evidence that supports the claim.	**CER OPINION/ARGUMENT MAP** 1. Using your notes and annotated texts, complete the CER ARGUMENT MAP graphic organizer to prioritize your strongest evidence to support your original claim and counterclaim. 2. You may use sticky notes for writing your evidence and reasoning and then place them on the CER graphic organizer. 3. Now that you have researched the topic, if the evidence now supports the opposite view, your original claim may now become your counterclaim and vice versa.	Completion of CER ARGUMENT MAP with claim and counterclaim support.	1. Tell students to review their notes taken from the articles they read. Decide what evidence and reasoning **best** support their CLAIM on one side and their COUNTERCLAIM on the other side of the graphic organizer. 2. After gathering their evidence for both sides of the issue, they may decide to change their position. In that case, they may simply switch the words (claim and counterclaim) on each side of the paper.

Standards:

RST.9-10.1 : Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.

RST.9-10.8 : Assess the extent to which the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem.

Additional Attachments:

CER argument map - GMO.doc

PACING	SKILL AND DEFINITION	PRODUCT AND PROMPT	SCORING GUIDE	INSTRUCTIONAL STRATEGIES
25 mins	**POST-READING > ACADEMIC INTEGRITY**: Ability to use and credit sources appropriately.	**CITING APA SOURCES/AVOIDING PLAGIARISM** 1. Turn to your partner. Brainstorm what constitutes plagiarism and suggest ways to avoid it. Participate in the class discussion afterwards. 2. Read the handout, "Academic Integrity/Using Proper APA Citation" as a guide. (Remember to follow these instructions when citing your sources as you take notes and write your editorial.) 3. Practice citing at least 1 of your sources by writing 4 sentences, using each of the 4 types of in-text citations, as shown on the handout. 4. If necessary, when writing your editorial,you may use online resources (Easybib.com, Citationmachine.net, etc.) to help you create proper citations of sources for your reference page. 5. Read the Academic Integrity statement and sign it.	Students have correctly cited 1 source, using the 4 in-text citation rules.	• With a partner, students should define plagiarism and list ways to avoid it. • Instruct students to practice creating citations properly, using the APA handout. • Give students access to the Online Writing Lab (OWL) at Purdue University to further assist them with creating citations. • *Optional* - students can use an online citation generator (e.g. EasyBib, Citationmachine.net etc.) • Discuss academic penalties for plagiarism. Ask students to read the Academic Integrity statement and sign it. Note: The assumption is that students have had some experience creating APA citations, so this should be a review. Give extra help as needed.

Standards:

CCR.R.1 : Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

CCR.W.8 : Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism.

Additional Attachments:

Research and Citation Resources

Academic Integrity statement .docx

Academic Integrity-APA Citations.docx

Transition to Writing

PACING	SKILL AND DEFINITION	PRODUCT AND PROMPT	SCORING GUIDE	INSTRUCTIONAL STRATEGIES
20 mins	**BRIDGING CONVERSATION > PREPARING FOR WRITING**: Ability to begin linking reading results to writing task.	**FOUR CORNERS** 1. Read the statement on the board. 2. At the top of a post-a-note, write whether you Strongly Agree, Agree, Disagree, or Strongly Disagree. 3. Write a 1-2 sentence justification of your opinion. 4. Go to the corner of the room with the same label as your opinion. Note: Do not discuss your opinion until directed to do so.	Student participation in writing their position and discussing with others.	1. Label the four corners of your classroom with these phrases: Strongly Agree, Agree, Disagree, Strongly Disagree. 2. Write this statement on the board: **Genetically modified organisms are the answer to many of the world's problems.** 3. Give students a post-a-note and instruct them to think about what they have read and write their opinion at the top: Strongly Agree, Agree, Disagree, Strongly Disagree. Tell them not consult with other students! 4. Then tell them to write a 1-2 sentence justification of their opinion. 5. After a few minutes have passed, say "Go to your corner." Students should move to the labeled corner of agreement, based on their response. 6. Students should discuss their positions and reasoning with the others in their group. Choose one spokesperson to share with the class. 7. After the discussion, allow students to change corners if their opinion has changed. 8. This activity allows ALL students to discuss their own opinions, based on evidence, in a small group and listen to others. Each student should have a voice in the discussion.

Standards:

SL.9-10.4 : Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task.

SL.9-10.1.B : Work with peers to set rules for collegial discussions and decision-making (e.g., informal consensus, taking votes on key issues, presentation of alternate views), clear goals and deadlines, and individual roles as needed.

SL.9-10.1.A : Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas.

SL.9-10.1 : Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 9—10 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.

RST.9-10.8 : Assess the extent to which the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem.

RST.9-10.2 : Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text.

Writing Process

PACING	SKILL AND DEFINITION	PRODUCT AND PROMPT	SCORING GUIDE	INSTRUCTIONAL STRATEGIES
30 mins	**CONTROLLING IDEA**: Ability to establish a claim and consolidate information relevant to task.	**STATING YOUR POSITION** 1. Read the "How Do You Write an Editorial?" handout to understand how to format an editorial. 2. With your partner, read the first 2 paragraphs of the example editorial on cigarette smoking. 3. Discuss what the author accomplished in the first paragraph. Why is it called a "lead?" 4. Then identify the author's position, stated in the 2nd paragraph. Now it's your turn! 1. Review the question and sticky notes from your Claims, Evidence, and Reasoning graphic organizer. Think about the conversation you heard during the Four Corners Activity. 2. On your Editorial Outline handout, write the second paragraph that states your position about whether the benefits of genetically modified organisms outweigh the possible safety concerns. 3. Then write the first paragraph that "leads" the reader into your position. These two paragraphs will complete your controlling idea.	Student meets expectations if he/she does the following: • Writes an appropriate first paragraph to lead the reader into the editorial. • Provides direct answer to main prompt requirements with a claim.	• Give students a copy of the Editorial Structure and Example handout. • Ask class to read the instructions and discuss how the editorial example illustrates the correct structure. • Instruct the students to write the 2nd paragraph of their editorial first to state their position, followed by the "lead" 1st paragraph to complete their controlling idea. The teacher should circulate among students to assist as needed.
	Standards: **WHST.9-10.1** : Write arguments focused on discipline-specific content.			
	Additional Attachments: **Editorial Structure and Example.docx** **EDITORIAL OUTLINE.docx**			

PACING	SKILL AND DEFINITION	PRODUCT AND PROMPT	SCORING GUIDE	INSTRUCTIONAL STRATEGIES
50 mins	**PLANNING THE WRITING**: Ability to develop a line of thought and text structure appropriate to an argumentative task.	**EDITORIAL WRITING PLAN** 1. Using the information on your CER graphic organizer and the "How Do You Write an Editorial?" handout as a guide, continue completing the Editorial Outline, including a conclusion. 2. Note: For the evidence and reasoning, you should transfer the sticky notes from your CER graphic organizer to the Editorial Outline.	Completion of Editorial outline, including the lead paragraph, position, counterclaim, evidence and reasoning to support claim, and conclusion.	1. Instruct students to use the information from the CER graphic organizer and the Introduction activity to complete the Editorial Outline. 2. Tell them to transfer the sticky notes with evidence and reasoning from the CER graphic organizer to the Editorial Outline to prevent having to write this information again.
	Standards: **RST.9-10.8** : Assess the extent to which the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem. **WHST.9-10.1** : Write arguments focused on discipline-specific content.			
	Additional Attachments: **Editorial Structure and Example.docx** **EDITORIAL OUTLINE.docx**			
40 mins	**DEVELOPMENT**: Ability to construct an initial draft with an emerging line of thought and structure.	**EDITORIAL DRAFT** Use your Editorial Outline to write the initial draft of your editorial. Remember to refer to the Teaching Task and address all parts of the prompt.	Completion of draft	Teacher should conference with students as needed to provide additional help in writing.
	Standards: **WHST.9-10.1** : Write arguments focused on discipline-specific content.			
25 mins	**REVISION AND EDITING**: Ability to proofread your own and another student's writing to determine if all elements of the rubric are met.	**PEER EDITING** Trade editorials with your elbow partner and follow the instructions on the Peer Editing Sheet.	Completion of Peer Edit Checklist and highlighting.	Explain what is meant by peer editing and review the Peer Editing Sheet with students. Allow time for students to ask questions.
	Standards: **WHST.9-10.1** : Write arguments focused on discipline-specific content.			
	Additional Attachments: **Peer Editing handout**			

PACING	SKILL AND DEFINITION	PRODUCT AND PROMPT	SCORING GUIDE	INSTRUCTIONAL STRATEGIES
25 mins	**REVISION AND EDITING**: Ability to proofread your own and another student's writing to determine if all elements of the rubric are met.	**REVISION AND EDITING** 1. Consider your peer's suggestions for improving your editorial's structure or wording, and revise as needed. 2. Be sure to include appropriate transitions. 3. Also revise your draft to have sound spelling, capitalization, punctuation and grammar.	Student meets expectations if he/she does the following: • Provides complete draft with all parts.	• Provide useful feedback that balances support for strengths and clarity about weaknesses.
25 mins	**COMPLETION**: Ability to submit final piece that meets expectations.	**COMPLETION** Turn in your final version of your editorial.	Student meets expectations if he/she does the following: • Fits the "Meets Expectations" category in the rubric for the teaching task.	Circulate around the room, providing guidance as needed.

Instructional Resources

Student Handout

- Editorial - Gosh Dangit
- ANNOTATED_TEACHING_TASK.docx
- Rubric_for_analysis-Argument.docx
- NOTE-TAKING graphic organizer.docx
- The Truth About GMOs.docx
- Straight Talk about GMOs
- Pros and Cons of GM Foods.docx
- Truth about GM Food-SCI AM.docx
- Salmon .docx
- Monarch Butterfly.docx
- ImpactOnHumanHealthOfGeneticallyModifiedOrganismsInFoods.pdf
- Academic Integrity-APA Citations.docx
- EDITORIAL OUTLINE.docx
- CER argument map - GMO.doc
- Editorial Structure and Example.docx

Section 4: What Results?

Student Work Samples

No resources specified

Teacher Reflection

Not provided

All Attachments

- Straight Talk on Genetically Engineered Foods - Center for Science in the Public Interest : https://s.ldc.org/u/5q7j6np8o6lj4nbk4edhn328l
- The Truth About GMOs.docx : https://s.ldc.org/u/1jfsryhlxl94ug45hn9370ol7
- Pros and Cons of GM Foods.docx : https://s.ldc.org/u/d413axc8hgzder14vx0uj53ty
- Truth about GM Food-SCI AM.docx : https://s.ldc.org/u/43l02jmx7fp0zzwkm7zz4z57l
- Salmon Will Be the 1st GM : https://s.ldc.org/u/8tuk84ng76b0z24f71h2lluvq
- Monarch Butterfly.docx : https://s.ldc.org/u/6tean33zzou2ukol2fseardok
- Impact on Human Health of GMO in Foods : https://s.ldc.org/u/3e2okuhwx5mxdkmuwqyt40f90
- No-Should Genetically Modified Foods Be Labeled.docx : https://s.ldc.org/u/ejv0wijzwqlun6mcu39p9bcoq
- Yes-Should Genetically Modified Foods Be Labeled.docx : https://s.ldc.org/u/5pgzgp5gw2cx6c2sq1hugpgnf
- Editorial - Gosh Dangit : https://s.ldc.org/u/cncp6n8z1ciyszd233rojyk6k
- ANNOTATED_TEACHING_TASK.docx : https://s.ldc.org/u/5jivx59yj2cnf1soqu2ypm521
- Rubric_for_analysis-Argument.docx : https://s.ldc.org/u/alkirr2pcfndsic6f7vyyxquf
- NOTE-TAKING graphic organizer.docx : https://s.ldc.org/u/e7m0i2tbjuo39zf2ybrqjonvl
- The Truth About GMOs.docx : https://s.ldc.org/u/n3gxnk2665x6fzye0esyp6ty
- Straight Talk about GMOs : https://s.ldc.org/u/5q7j6np8o6lj4nbk4edhn328l
- Pros and Cons of GM Foods.docx : https://s.ldc.org/u/6ft9v3yci890db3i9a7seuk2
- Truth about GM Food-SCI AM.docx : https://s.ldc.org/u/82pvtw72cqxl8xtrrcwktbkjr
- Salmon .docx : https://s.ldc.org/u/1ta8clwmkdj11bom1045tjkxm
- Monarch Butterfly.docx : https://s.ldc.org/u/1diq2ngtiqmggy1ppxs3g5ukl
- ImpactOnHumanHealthOfGeneticallyModifiedOrganismsInFoods.pdf : https://s.ldc.org/u/eyf8irhzmezxnd6iawoym0iq
- Academic Integrity-APA Citations.docx : https://s.ldc.org/u/d6jzxa1mkz4umy9r8081v0uup
- EDITORIAL OUTLINE.docx : https://s.ldc.org/u/7xz4sevib4wxjhyv4fvwvrf7
- CER argument map - GMO.doc : https://s.ldc.org/u/akdj6m95je9c19vv3ldraky85
- Editorial Structure and Example.docx : https://s.ldc.org/u/2v2tycj4r782u54xvd783eas9