

Unit 4: Global Health, the Environment and the Future of Technology

Content Area: **Social Studies**
Course(s):
Time Period: **Marking Period 1**
Length: **4 weeks**
Status: **Published**

Summary

In the Current Global Issues course, students examine global phenomena through the central themes of: globalization, human rights, challenges to state power/global order and global health, technology and the environment. During each unit, students use a set of core skills to examine the central theme and how it impacts individual nations and the global community, including problems that are shared by all nations and ways of addressing them. Moreover, a key pillar of the course is daily international news that fortifies the continuing story of world events.

This unit examines global health, the environment and technological advances. The instructor is required to teach about Food Production, the Environment, and Human Health as the main case-study and then will select from one additional case study from the following list:

- Epidemics, Pandemics, and Emergent Diseases
- The Future of Health Technologies
- Technological Advances

By the end of this unit, students will be able to assess the impact of the Green Revolution on agricultural production, make informed decisions on the food they choose to eat based on factors such as health, environment, and human rights, assess the impact of current and emerging technology, and make informed decisions about their careers and future based on current and future developments.

Revised: August 2023

Standards

6.2.12.CivicsHR.5.a: Assess the progress of human and civil rights protections around the world since the adoption of the Universal Declaration of Human Rights.

6.2.12.GeoPP.5.a: Use a variety of sources to explain the impact of migration on the way of life in the country

of origin and the new country (e.g., social, economic, political structures).

6.2.12.CivicsPI.6.a: Use historic case studies or a current event to assess the effectiveness of multinational organizations in attempting to solve global issues.

6.1.12.HistoryCC.15.b: Analyze the impact of United States support for the policies and actions of the United Nations (i.e., Universal Declaration of Human Rights, United Nations Sustainability Goals) and other international organizations.

6.1.12.HistoryCC.15.c: Evaluate the effectiveness of United States policies and actions in supporting the economic and democratic growth of developing nations.

6.1.12.EconNE.16.b: Evaluate the economic, political, and social impact of new and emerging technologies on individuals and nations

6.2.12.HistoryCC.1.d: Compare slavery practices and other forms of coerced labor or social bondage common in East Africa, West Africa, Southwest Asia, Europe, and the Americas.

6.2.12.GeoPP.6.a: Make evidence-based inferences to determine the global impact of increased population growth, migration, and changes in urban-rural populations on natural resources and land use.

6.2.12.EconGE.6.a: Evaluate efforts of governmental, non-governmental, and international organizations to address economic imbalances, social inequalities, climate change, health and/or illiteracy.

6.1.12.CivicsPR.16.a: Analyze government efforts to address intellectual property rights, personal privacy, and other ethical issues in science, medicine, and business that arise from the global use of new technologies.

6.1.12.EconNE.16.a: Make evidenced-base inferences regarding the impact of technology on the global workforce and on entrepreneurship.

6.1.12.EconNE.16.b: Evaluate the economic, political, and social impact of new and emerging technologies on individuals and nations

6.2.12.CivicsHR.6.b: Make an evidence-based argument on the tensions between national sovereignty and global priorities regarding economic development and environmental sustainability and its impact on human rights.

9.1.12.CFR.4: Demonstrate an understanding of the interrelationships among attitudes, assumptions, and patterns of behavior regarding money, saving, investing, and work across cultures.

9.4.12.GCA.1: Collaborate with individuals to analyze a variety of potential solutions to climate change effects and determine why some solutions (e.g., political. economic, cultural) may work better than others

9.2.12.CAP.1: Analyze unemployment rates for workers with different levels of education and how the economic, social, and political conditions of a time period are affected by a recession.

9.2.12.CAP.2: Develop college and career readiness skills by participating in opportunities such as structured learning experiences, apprenticeships, and dual enrollment programs. 9.2.12.CAP.3: Investigate how continuing education contributes to one's career and personal growth.

9.2.12.CAP.22: Compare risk and reward potential and use the comparison to decide whether starting a business is feasible.

9.2.12.CAP.23: Identify different ways to obtain capital for starting a business.

9.2.12.CAP.13: Analyze how the economic, social, and political conditions of a time period can affect the labor market.

9.2.12.CAP.3: Investigate how continuing education contributes to one's career and personal growth.

9.2.12.CAP.6: Identify transferable skills in career choices and design alternative career plans based on those skills.

NJSLSA.R1. Read closely to determine what the text says explicitly and to make logical inferences and relevant connections from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

NJSLSA.R2. Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.

RH.11-12.6. Evaluate authors' differing perspectives on the same historical event or issue by assessing the authors' claims, reasoning, and evidence.

RH.11-12.9. Integrate information from diverse sources, both primary and secondary, into a coherent understanding of an idea or event, noting discrepancies among sources.

RH.11-12.1. Accurately cite strong and thorough textual evidence, (e.g., via discussion, written response, etc.), to support analysis of primary and secondary sources, connecting insights gained from specific details to develop an understanding of the text as a whole. RH.11-12.2. Determine the theme, central ideas, information and/or perspective(s) presented in a primary or secondary source; provide an accurate summary of how key events, ideas and/or author's perspective(s) develop over the course of the text.

This unit is aligned to the English Language Development (ELD) standards for kindergarten through grade 12 since multilingual learners develop content and language concurrently, with academic content in a classroom where the language of instruction is English. As a result, language learning and language as a means for learning academic content are interchangeable. The following ELD standards are relevant for this unit and course of study:

- Standard 1: Language for Social and Instructional Purposes: English language learners communicate for social and instructional purposes within the school setting.
- Standard 5: Language for Social Studies: English language learners communicate information, ideas and concepts necessary for academic success in the content area of Social Studies.

The standards in this unit reflect a developmental progression across grade levels and make interdisciplinary connections across content areas including the humanities, technology, career readiness, cultural awareness, and global citizenship.

Essential Questions and Enduring Understandings

Essential Questions:

- How do the food choices we make on a daily basis affect our health, the environment and human rights?
- To what extent will new technologies help or hurt humanity in the future?

Enduring Understandings:

- The Green Revolution has transformed the way food is produced and consumed, creating a global food system with repercussions for human health, the environment and human rights.
- The pace of technological change has been accelerating exponentially in the era of globalization. New technologies will radically transform human health, work, lifestyle and the environment in the coming decades.

Objectives

Students will know:

- The Green Revolution dramatically altered food production after WWII, contributing to a global population increase to almost 8 billion by 2022.
- The UN projects that the population may reach 11 billion people by 2050, which will strain the world's food supply and environmental resources.
- Chemical fertilizers, pesticides, and herbicides have enabled us to produce more food, but come with environmental costs.
- Habitat loss, species decline, soil erosion, freshwater pollution and ocean pollution are by-products of our industrialized agricultural system, contributing to what some scientists are calling the sixth great extinction, which could have devastating impacts on human society.
- The costs and benefits of GMO crops, the widespread use of has decreased crop diversity and affected human cultures, especially among global ethnic minorities.
- The use of antibiotics in the factory farming of animals is controversial because of the rise of antibiotic-resistant bacteria and animal welfare issues.
- There are significant sustainability issues in the fishing industry.
- Slavery and sub-standard labor conditions are a part of the world's food production system in places like the American Southeast and Southwest (substandard wages/working conditions for farm workers),

Thailand (seafood and slavery), West Africa (chocolate and child labor/slavery)

- Definitions of: organic, fair trade, non-GMO, natural, food desert.
- NAFTA impacted farmers in North America and Latin America.
- Organic farming, crop diversification, local farm to table stores and restaurants and labeling of GMO products are some ways people have demanded change in the global food industry.
- Global conflicts such as World War II and the Cold War have accelerated the pace of technological advances, leading to the Internet, which has been a major force of globalization.
- Technology has the potential to “flatten” the world. For example, the Internet has made it possible for people in India to perform jobs traditionally performed by Americans at a fraction of the cost. Wages have stagnated in the U.S. and risen in India as a result.
- Examples of emerging technologies and their impacts: robots, nanotechnology, drones, artificial intelligence, DNA analysis, automated medicine.
- Examples of current and future medical technologies: CRISPR, CAR-T, AI, mRNA vaccines, lab grown organs.

Students will be skilled at:

- Researching current issues regarding food production, nutrition and emerging technologies and presenting their findings to the class.
- Thinking critically about the historic origins of the Green Revolution and deliberating over the role that GMO crops play in our food supply.
- Identifying emerging technologies and assessing their potential impact.
- Navigating new and emerging health technologies to make more informed health decisions in the future.
- Making career decisions based on their interests and the future of technology.

Learning Plan

This unit includes, but is not limited to, the following learning strategies:

Core Unit Activities:

Deliberation on Genetically Modified Organisms: Students read the article “Stealing Nature’s Harvest” and/or “GMOs: Changing the Nature of Nature” or other more recently approved news articles and deliberate over what regulations, if any, there should be regarding GMOs. As an extension or enriched modification, students may write a short evidence-based essay in which students examine the costs and benefits of GMO crops and articulate their opinion.

Case Studies in Food Production: Students examine case studies on human rights in the food industry. Sample topics include, but are not limited to: Immolokee, Florida Farm Workers, Slavery in Thai Fishing Industry, United Fruit Company/Chiquita Banana. Sources may include approved current event articles or short video clips.

Chef’s Table: Students watch an episode from Chef’s Table or Cooked (available on Netflix or DVD) to learn about a variety of issues in the food industry. Episode 2: Blue Hill Farm from Chef’s Table focuses on sustainability, GMOs, local foods. Episode 2 from Cooked details post WWII changes in food production. One or both may be used at instructor discretion. Students write a reaction paper or respond to prepared questions.

Optional Case-Studies:

“When I’m 164” TED Talk and Reflection: Students watch this TED Talk and deliberate over the benefits and detriments of the medical community pursuing medical advances that may radically extend human life to beyond 120 years.

Mapping Environmental Justice: Students explore the topic of environmental justice through the lens of geography in this Choices Teaching with the News lesson.

Emerging Diseases and Pandemics: Students can explore emerging diseases and pandemics in more depth by watching one of the selected films in the resource guide such as The Lazarus Effect or researching in small groups diseases including, but not limited to: HIV/AIDS, COVID, tuberculosis, SARS, avian flu, ebola, zika.

Emerging Technologies Survey: Students take a short survey to assess their comfort level regarding various emerging technologies and discuss/compare their results in small or large group discussions.

Emerging Technologies Research and Presentations: Students are assigned one emerging technology to research and document its potential impact. Examples may include, but are not limited to, nuclear fusion energy, CRISPR, CAR-T, AI, MRNA vaccines, quantum computing, automation, driverless vehicles, lab

grown organs, UFO/UAP research.

Technology and the Future Essay: Students write a short essay in which they predict the future of technology and assess the impact that it may have on society.

Note: Other strategies to address the learning objectives may include, but are not limited to direct instruction, primary and secondary source analysis (including annotations, critique, questioning and close reading strategies), self and peer review, think-pair-share activities, creating visual representations, debates, film analysis, Socratic seminars, small group discussions, simulations, mapping activities, jigsaw activities, gallery walks, web quests, and/or inquiry or problem based learning projects.

Assessment

When taking a Social Studies course, students demonstrate differentiated proficiency according to their ability to answer the essential questions through formative and summative assessments. Many of the performance tasks below can be implemented as formative and/or summative assessments. As teachers strive for students to demonstrate proficiency, they will need to create additional or alternative assessments based on demonstration or absence of skill.

Formative Assessments:

- Reading and annotating articles on GMO crops.
- Student research of various issues regarding food production, including human rights, health and the environment.
- Technology survey in which students assess their attitude towards new and emerging technologies.

Summative Assessments:

- Film reflection of Chef's Table episode.
- Essay in which students assess the strengths and benefits of GMOS or make predictions about the future of emerging technologies.

Alternative Assessments:

- Read and summarize current event articles in the news on various topics regarding emerging global

technologies, diseases and/or medical advances.

- Any of the summative assessments can be modified or extended for learners of different abilities.

Materials

The design of this course allows for the integration of a variety of instructional, supplemental, and intervention materials that support student learners at all levels in the school and home environments. Associated web content and media sources are infused into the unit as applicable and available. In addition to the materials below, the following link connects to district approved textbooks and resources utilized in this course: [Core Book List](#).

The following are approved resources that teachers can include to further unit related objectives:

- Selected articles and resources from the book *Rethinking Globalization: Teaching for Justice in an Unjust World* edited by Bob Bigelow (2002), including “Stealing Nature’s Harvest” on GMO crops.
- *Cooked: Water* (2016) episode two; documentary from Netflix. This documentary traces changes in the food industry post WWII and uses India as a case-study for resisting global changes to food culture and diet as pushed by multinational corporations.
- “Chef’s Table” from Netflix. Episodes feature chefs of global influence and touch upon issues of sustainability, human rights and health.
- *Toxification* (2020) documentary available for streaming on Amazon Prime video. This documentary uses Punjab, India as a case study to examine the human cost of the Green Revolution on Punjabi farmers. (Note: The episode discusses drug use and the suicide crises among Punjabi farmers, so consider the audience before screening).
- *The Hundred Foot Journey* (2014) film directed by Lasse Hallstrom. An Indian family moves to France and opens a restaurant across from a traditional French restaurant, causing friction in the community.
- “Africa, GMOs and the West” DW Documentary: <https://www.youtube.com/watch?v=cwHzOOE2tNE>
- “When I’m 164” TED Talk: <https://www.youtube.com/watch?v=glU9Rr52z2g>
- “AI Revolution” 60 Minutes: <https://www.youtube.com/watch?v=YTSUa-7Ym5M>
- Excerpts approved by the supervisor from *The Lazarus Effect* HBO documentary on the impact of ARV on HIV/AIDS in Africa.
- “The Gene Engineers” PBS NOVA <https://www.youtube.com/watch?v=D7ha57RUxa8>
- Mapping Environmental Justice from Choices: <https://www.choices.edu/teaching-news->

Any additional resources that are not included in this list will be presented to and reviewed by the supervisor before being included in lesson plans. This ensures resources are reviewed and vetted for relevance and appropriateness prior to implementation.

Suggested Strategies for Modification

This link includes content specific accommodations and modifications for all populations:

<https://docs.google.com/spreadsheets/d/1Pp6EJOCSFz5o4-opzsXpQDQoa6aCIW-bkRGPDRHXVrk/edit?usp=sharing>

These additional strategies are helpful when learning Social Studies content and skills:

- Providing opportunities for text-to-speech for written responses.
- Use visual presentations of all materials, including graphic organizers for writing.
- Mark texts with a highlighter.
- Provide time for students to process their responses before asking for contributions during class.
- Model expectations for assignments and provide clear rubrics with detailed instructions