Tech for Global Good Design Challenge NGSS Standards

NGSS Standards - Middle School

**MS-LS2-4**  
Changing the physical or biological components of an ecosystem affects a population.

**CCC Stability and Change.** Changing one component of a system might cause large changes in another.

**MS-ETS1-1**  
Define a design problem that can be solved through the development of an object, tool, process or system and includes multiple criteria and constraints, including scientific knowledge that may limit possible solutions.

**MS-ETS1-2**  
evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.

**MS-ETS1-3**  
Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.

Language Arts

**Grade 7**

1. Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
2. Determine two or more central ideas in a text and analyze their development over the course of the text; provide an objective summary of the text.
3. Analyze the interactions between individuals, events, and ideas in a text (e.g., how ideas influence individuals or events, or how individuals influence ideas or events).

**Grade 8**

1. Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.
2. Determine a central idea of a text and analyze its development over the course of the text, including its relationship to supporting ideas; provide an objective summary of the text.
3. Analyze how a text makes connections among and distinctions between individuals, ideas, or events (e.g., through comparisons, analogies, or categories).

**Speaking and Listening:**

1. **Grades 7-8:** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on Grades 7–8 topics, texts, and issues, building on others’ ideas and expressing their own clearly.
**Grades 9–10:** 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.

2. **Grade 7:** Present claims and findings (e.g., argument, narrative, summary presentations), emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.

**Grade 8:** Present claims and findings (e.g., argument, narrative, response to literature presentations), 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.

**Grades 9–10:** Present information, findings, and supporting evidence clearly, concisely, and logically (using appropriate eye contact, adequate volume, and clear pronunciation) such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose (e.g., argument, narrative, informative, response to literature presentations), audience, and task.

**Cross-Curricular Extensions**

**History/ Social Science**

**Grade 7**

7.10 Analyze historical developments of the Scientific Revolution.

*Opportunity:* Compare and contrast global exploration with global community

*Opportunity:* What parts of the scientific method did you see in the design challenge? [OR](#)

Is the scientific method relevant in the 21st century?

**Grade 8**

8.5 U.S. Foreign Policy in the early Republic

8.12 Industrial Revolution

*Opportunity:* Compare and contrast the early United States take on foreign policy and influence of the Industrial Revolution with the globalism, foreign policy, and economics of 2000's United States.

**Grades 9–12**

**Chronological and Spatial Thinking:** Maps, rates, and trends over time

**Historical Interpretation:** the larger effects of a single historical event or the resulting environmental impact of a single historical event.

**Mathematics**

**Middle Grades**

**Math and Medicine**

- Using volume, probability, and counting problems students get an opportunity to look at medicine from a mathematics angle.


- Analyze data from WHO or the CDC on vaccines and vaccine avoidable illnesses to make comparisons and predictions.
Grades 9–12

Mathematics of Herd or Community Immunity

Epidemic Maths