### Standard

• 3.5.9-12.E Evaluate how technology and engineering advancements alter human health and capabilities.

Key Learning	Unit Essential Question
• (LTTG) Students will be able to demonstrate	How can I demonstrate integrity and
integrity and conscientiousness, considering ethical issues involved.	conscientiousness, considering ethical issues involved?

## **Essential Question**

• How does changing technology impact the individual, culture, and environment?

## **Key Vocabulary**

• Evaluate, Advancement, Alteration, Capability, Examine, Effect, and Impact

## Learning Experience

- Students who demonstrate understanding can evaluate how technology and engineering advancements alter human health and capabilities.
- Clarifying Statement: Evaluative tools can be used to examine existing or proposed technologies to assess their positive and negative effects on humans. For example, CRISPR-Cas9 technology has been hailed as a tool for modifying human genetic material to reduce the risk of inherited disease. At the same time, there are medical and ethical concerns surrounding application of this technology to humans.

# (Big Idea) Technology & Engineering Curriculum Framework Big Ideas

• Use of technology can lead to fundamental changes in individuals, human cultures, and the environment.

## (SEP) Science and Engineering Practices

• Engaging in Argument From Evidence - Evaluate the claims, evidence, and/or reasoning behind currently accepted explanations or solutions to determine the merits of arguments.

## (DCI) Disciplinary Core Ideas

• NAEP T.12.13 - Disparities in the technologies available to different groups of people have consequences for public health and prosperity, but deciding whether to introduce a new technology should consider local resources and the role of culture in acceptance of the new technology.

## (TEP) Technology and Engineering Practices

• Critical Thinking - Uses evidence to better understand and solve problems in technology and engineering, including applying computational thinking.

- (ETS) Engineering, Technology, and Applications of Science Standards applicable across the Science, Environmental Literacy & Sustainability, and Technology & Engineering content areas.
- (LTTG) PDE Technology & Engineering Long Term Transfer Goals
- (Learning Experience) A learning experience refers to any interaction, activity, or other experience in which students acquire new understanding, knowledge, behaviors, or skills.
- (Big Idea #) PDE Technology & Engineering Curriculum Framework Big Ideas
- (SEP) PDE Science and Engineering Practices
- (DCI) PDE Disciplinary Core Ideas
- (TEP) PDE Technology and Engineering Practices