Course Title – Science Fiction
Implement start year – 2014-2015
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Unit #4, topic – Technology Students will be able to examine the societal impacts of new technology in fiction and determine the dangers and benefits of new technology both today and in the future.

Stage 1 – Desired Results

Established Goals

2009 NJCCC Standard(s), Strand(s)/CPI #
(http://www.nj.gov/education/cccs/2009/final.htm)
Common Core Curriculum Standards for Math and English
(http://www.corestandards.org/)

L.11-12.2 Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

L.11-12.3 Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening.

SL.11-12.1 Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.

SL.11-12.2 Integrate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, orally) in order to make informed decisions and solve problems, evaluating the credibility and accuracy of each source and noting any discrepancies among the data.

W.11-12.1 Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.

21st Century Themes
(www.21stcenturyskills.org)

☒ Global Awareness
☒ Financial, Economic, Business and
  Entrepreneurial Literacy
☒ Civic Literacy
☒ Health Literacy
☒ Environmental Literacy

21st Century Skills

Learning and Innovation Skills:
☒ Creativity and Innovation
☒ Critical Thinking and Problem Solving
☒ Communication and Collaboration

Information, Media and Technology Skills:
☒ Information Literacy
☒ Media Literacy
☒ ICT (Information, Communications and
  Technology) Literacy

Life and Career Skills:
☒ Flexibility and Adaptability
☒ Initiative and Self-Direction
☒ Social and Cross-Cultural Skills
☒ Productivity and Accountability
☒ Leadership and Responsibility

W.11-12.2 Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.

W.11-12.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

W.11-12.7 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

W.11-12.9 Draw evidence from literary or informational texts to support analysis, reflection, and research.

RI.11-12.1 Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.

RI.11-12.2 Determine two or more central ideas of a text and analyze their development over the course of the text, including how they interact and build on one another to provide a complex analysis; provide an objective summary of the text.

RI.11-12.3 Analyze a complex set of ideas or sequence of events and explain how specific individuals, ideas, or events interact and develop over the course of the text.

RI.11-12.7 Integrate and evaluate multiple sources of information presented in different media or formats (e.g., visually, quantitatively) as well as in words in order to address a question or solve a problem.

RL.11-12.1 Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.

RL.11-12.2 Determine two or more themes or central ideas of a text and analyze their development over the course of the text, including how they interact and build on one another to produce a complex account; provide an objective summary of the text.

Enduring Understandings:	Essential Questions:
Students will understand that . . .	
EU 1	*EU 1*
Evolving technologies and a further understanding of science often force a redefining of societal jobs and responsibilities.	• In what ways is technology likely to develop in 10 years? 25? 100? • How does new technology affect the various roles and responsibilities of individuals in a society? • What must be considered before taking the jobs of a human and transferring those roles and responsibilities to computers, robot, or other elements of technology?
EU 2 New technologies require us to reevaluate what it means to be a human.	
	EU 2
EU 3 The development and use of new technology often outpaces our understanding of the potential consequences.	• How does the blurring of lines that separate man and machine affect how we perceive ourselves? • When is a machine entitled to the same rights as a human? • Why are human being afraid of androids and other machines that resemble them closely?
EU 4 Embarking upon journeys to alternate worlds, realities, or time periods often ends with a deeper understanding of self and society.	
	EU 3
	• How has the use of science and technology in the past backfired? • What can be learned from scientific or technological mistakes so they do not occur again in the future? • At what point should new technology and exploration/manipulation of science be curbed or outlawed by society?
	EU 4
	• How do we assess acceptable behavior as the way we interact through technology changes? • What considerations must be made when exploring new worlds or new civilizations? • What are the ethics of time travel? • What rules should be developed to protect human explorers and the populace of Earth?

Knowledge: *Students will know . . .*	Skills: *Students will be able to . . .*
EU 1 • Technological innovations in different spheres of our society • Jobs that have appeared, disappeared, or changed with onset of technology • Unemployment considerations and consequences when taking jobs from humans through the automation of tasks. *EU 2* • The definition and examples of the "uncanny valley" • Philosophical and religious opinions about the nature of life • The Laws of Robotics (Asimov) *EU 3* • Scientific creations and incidents such as The Manhattan Project, Chernobyl, Kudzu, and Leyland Cypress • DNA/Genetic manipulation in today's society • Cloning of human or human body parts *EU 4* • Rules of diplomacy that exist with other countries • Fictional rules of engagement and behavior in the novels • Considerations of paradox and limitations of time travel • Perils of cross contact of species and consequences	*EU 1* • Predict where new technologies will impact society. • Research and present past inventions influence on society and job roles. *EU 2* • Apply concept of "uncanny valley" to current inventions and the inventions in the novels. • Define "Life" and "Humanity" • Compare sub categories of Life and Humanity such as intelligent versus non-intelligent to determine importance and validity. *EU 3* • Create rules of behavior when dealing with emerging scientific breakthroughs. • Question and criticize the limitations that are created. *EU 4* • Create directives when dealing with civilizations from other worlds. • Infer possible outcomes if directives are not followed. • Develop punishments to fit crimes if directives are broken.

Stage 2 – Assessment Evidence

Recommended Performance Tasks: *Each unit must have at least 1 Performance Task. Each EU must be addressed in a performance task. Consider the GRASPS form.*

Other Recommended Evidence: *Tests, Quizzes, Prompts, Self-assessment, Observations, Dialogues, etc.*

- Quiz on plot, characters, and thematic content of stories
- Assess student understanding through consideration of diplomacy and interference when dealing with the settling of new worlds or the interactions with new races.
- Discussion on ethical and moral implications when implementing new technologies.
- Read essential questions and apply to content
- Connections are made to works and bring in historical context as supporting detail.
- Teacher observations of students ranking and prioritizing information to include on assigned projects.

Stage 3 – Learning Plan

Suggested Learning Activities to Include Differentiated Instruction and Interdisciplinary Connections: *Consider the WHERETO elements.*
Each learning activity listed must be accompanied by a learning goal of A= Acquiring basic knowledge and skills, M= Making meaning and/or a T= Transfer.

- Distinguish elements of novels that build off of technologies being used today. (A)
- Research events where technology created for one reason are used for another. (A)
- Develop rules to govern behavior in different hypothetical situations such as colonization of a new world, meeting a new race on a different planet, returning back from other worlds, etc. (T)
- Predict how the introduction of fully functional robots could change the way the world operates. (T)
- Take the rules created by the class governing behavior and justify reasons for the abolishment of certain rules or the creation of amendments where the breaking of a rule is justified. (T)
- Identify how technology has changed the responsibilities of mankind in today's society.   (M)
- Infer how rules regarding scientific breakthroughs or breakthroughs save or protect humanity.   (M)