Blue Unit: **Seeing and Solving**: Students will be tasked to identify challenges and problems in their communities. They will be taught to identify a problem, do responsive research, clarify the issue, ideate solutions, refine and select solutions, and understand the implementation process. Students will then work to solve the problems they have selected.

*Standards/Objectives: Innovation & Creativity & Leadership*

Orange Unit: **The Timeline of Technology**: In this unit students will be presented with the context of modern day technological advances. Using the lens of history, we will be covering different ethical dilemmas of the past to help form a critical analysis of modern day technology use.

*Standards/Objectives: Citizenship & Information Literacy*

Yellow Unit: **Discourse and Individual Interpretation**: In this unit students will learn about media analysis as a way to understand their own personal place in society. They will also be learning about specific schools of ethics and the establishment of morality.

*Standards/Objectives: Communication & Critical Thinking*

Green Unit: **21st Century Collaboration:** Students will identify a new technology they will work to become an expert in for the class. This unit will embrace the idea that creativity is more than just art, and is about seeing the possibilities present in the resources students have access too.

*Standards/Objectives: Collaboration & Digital Literacy*

Color coding is to indicate primary unit being served, though content is not limited to that unit.

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| --- | --- | --- | --- | --- |
|  | 50-Minute Period | 50-Minute Period | 90-Minute Block | 50-Minute Period |
| Week 1 | Defining Humanity: “Policy 10: Teaching at Principia shall emphasize the point of view that education carries with it the obligation to use technical skills and intellectual attainments for the betterment of humanity.” | Establishing Classroom Mission and Culture: * Review Syllabus
* The 4C’s
* 21st Century Literacy
* Defining Innovation
* Collaboration Spaces, physical and digital
 | 9-Dot ChallengeBasics of Problem Solving and the steps of doing so:* Examine and define the problem.
* Explore what they already know about underlying issues related to it.
* Determine what they need to learn and where they can acquire the information and tools necessary to solve the problem.
* Evaluate possible ways to solve the problem.
* Solve the problem.
* Report on their findings.
 | Rubric Day. Building and understanding and preparing for self-evaluation expectations. |
| Week 2 | Personal Biography: Defining ourselves and our communities, part 1 | Personal Biography: Defining ourselves and our communities, part 2 | Problems Inventory: come together to identify and list problems affecting student communities. | Refining, ordering, and categorizing Problems. Select collaboration teams. |
| Week 3 | Expert Inventory: Student proficiencies and skills. Beginning to establish a culture of collaboration. | Expert Inventory: Community experts, how to professionally communicate, and establish connections with local community experts. | Understanding research in the digital age.Researching Problems: gathering data, conducting interviews, identifying stakeholders, identify initial needs. | Researching Problems: gathering data, conducting interviews, identifying stakeholders, identify initial needs. |
| Week 4 | Exploring Causes: Once challenges are established, students will begin to explore the primary causes with an emphasis on technology’s role in advancing the challenge and the ethical drivers for the challenge. | Introduction to Ethics: Key Terms: Consequentialism (utilitarianism), Natural Law (four basic goods), Golden Rule, Rights-based, Virtue ethics. Duty Ethics | Assessment A. Defining the problems and its needs: Aligning Self to Problems through ethical understanding. Work Day on Proposals to select problems and skill acquisition. | Assessment A. Defining the problems and its needs: Aligning Self to Problems through ethical understanding. Work Day on Proposals to select problems and skill acquisition. |
| Week 5 | Self-Assessment using class rubrics  | Brainstorming Solutions: Students will begin to brainstorm solutions to their problems. They are expected to maintain this brainstorming in online collaborative environment. | Watanabe Tool Kit Day. Using the research they have done and their initial day of brainstorming. Teams will work through developing multiple solution options to pursue. | C.R.E.A.T.E. solutions. |
| Week 6 | Revisiting ethics, students will identify why they chosen the solution they have from an ethical standpoint. | Now that students have an understanding of the problem they are addressing they will be selecting their mastery skill. Students will present an argument that will serve to justify their selection of this skill. Present to their teams, receive feedback, record video to share. | Mastery Day 1: Students will identify online trainings, books, videos, and experts from which they can develop their mastery.  | *Abstract: The Art of Design*. Viewing day. |
| Week 7 | Mastery Day 2 | Mastery Day 3 After this day, students are expected to self-evaluate their learning up to this point and identify further needs. | Profiles in innovation:* Disney/Pixar Example
* Bowery-The Modern Farm Company
* Bees Wrap
* Noras Performance
* People Making a Difference, CS Monitor

Singular evolution.* “Glass” from *How We Got to Now*
 | Innovation Case Studies. Students will spend the day researching innovations and finding the subject of their case studies. |
| Week 8 | Assessment B: Class will be doing a focused project with written, digital, and graphic components that either profile a specific individual innovation, or the evolution of an item use in our everyday. Must be able to be shared online. | Assessment B: Class will be doing a focused project with written, digital, and graphic components (multimodal) that either profile a specific individual innovation, or the evolution of an item use in our everyday. Must be able to be shared online. | Mastery Day 4 | Mastery Day 5 |
| Week 9 | Now that students have begun to master a new skill, morality and ethics will again take center stage. Over the course of the week we will be addressing contemporary issues leading up to Ethics Bowl about the next generation of ethics.  | The intent of this week is not to force specific outcomes but rather, encourage students to more deeply inquire and establish their own standpoint through moral/ethical deliberation. Content is presented in a historical lens. | Topics covered this week. Privacy & confidentiality Hacking/Spamming Property/Copyright Netiquette Vandalism Access Accuracy Sources: Knowing what is true.Viewing media sources/outlets with a discerning eye: who stands to gain from our consumption of media. | Flex Day: Team Check ins and evaluation of progress on mastery and problem resolutions.  |
| Week 10 | Presenting Masteries | Presenting Masteries | Ethics Bowl: Real-time satellite surveillance video, Astronaut bioethics (of colonizing Mars), Wearable technology, State-sponsored hacktivism and “soft war”, Non-lethal weapons, Artificial life forms, Resilient social-ecological systems, Brain-to-brain interfaces.  | Flex Day |
| Week 11 | During these four weeks, students will use the skills gained to have a fully immersive experience working to solve problems. This will be modeled after a collaborative think tank and students will have liberty to select projects that are valuable to them. The key measures of assessment during this period will be weekly self, team, and teacher assessments, based on the class rubrics addressing 21st century skills as identified by the ISTE as part of the NETS-S and the P21 Framework for 21st Century Learning 4C’s. Every other week students must also produce a three component-multimodal product that clearly identifies the context, ethics, and literacies addressed or utilized during period of problem solving. During this time expectations for final assessment will be addressed and shared with students. |
| Week 12 |
| Week 13 |
| Week 14 |
| Week 15 | E-Portfolio Organization | E-Portfolio Organization | Flex Day | E-Portfolio Presentation and Self-Evaluation |