Southern York County School District Instructional Plan

Course/Subject: Think Tank
Grade Level: 11, 12

Textbook(s)/Instructional Materials Used: IDEO Online Resources, Design Thinking Teacher Toolkit and Workbook, Various Online Resources

Dates: August	Unit Plan: Intro to Design Thinking

Stage 1 – Desired Results

PA Standard(s)/Assessment Anchors Addressed:

PA Speaking and Listening

1.5 Students present appropriately in formal speaking situations, listen critically, and respond intelligently as individuals or in a group discussion.

CC.1.5.11–12.A Initiate and participate effectively in a range of collaborative discussions on grade-level topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.

CC.1.5.11–12.F Make strategic use of digital media in presentations to add interest and enhance understanding of findings, reasoning, and evidence.

ISTE Standards

ISTE 1 - Student Empowered Learning: Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences.

- **1a Students articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning outcomes.**
- **1b Students build networks and customize their learning environments in ways that support the learning process.**
- **1c Students use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways.**
- **1d Students understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to explore emerging technologies.**

Understanding(s): *Students will understand*	Essential Question(s):
1. The power of Design Thinking to solve complex problems. 2. Design Thinking is a process for creative problem solving. 3. How the Design Thinking approach will assist in any problem and/or challenge. 4. Design challenges change throughout the Design Thinking process.	• To what extent can the students' understanding of Design Thinking assist and improve their ability to construct and solve problems? • To what extent can the Design Thinking approach be used to solve challenging problems?

Learning Objectives: *Students will know…*	*Students will be able to:*
• The Design Thinking approach includes 5 phases including Empathy, Definition, Ideation, Prototyping, and Testing. • Design Thinking can be used to approach any challenge.	• Experiment with the 5 levels of the design process. • Determine when design thinking can be utilized. • Develop a "How Might We" Statement. • Identify proposed end goals. • Define indicators of success. • Establish constraints.

Dates: September - October	Unit Plan: Empathy and Discovery

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<tr><td colspan="2" style="background-color:red; text-align:center">Stage 1 – Desired Results</td></tr>
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ISTE 3 - Knowledge Constructor: Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others.

- **3a Students plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits.**
- **3b Students evaluate the accuracy, perspective, credibility and relevance of information, media, data or other resources.**
- **3d Students build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions.**

ISTE 4 - Innovative Designer - Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions.

- **4a Students know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.**
- **4b Students select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.**

ISTE 5 - Computational Thinker: Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.

- **5a Students formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions.**
- **5b Students collect data or identify relevant data sets, use digital tools to analyze them, and represent data in various ways to facilitate problem-solving and decision-making.**

ISTE 6 - Creative Communicator: Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals.

- **6a Students choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication.**
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ISTE 7 - Global Communicator: Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.

- **7b Students use collaborative technologies to work with others, including peers, experts or community members, to examine issues and problems from multiple viewpoints.**
- **7c Students contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.**
- **7d Students explore local and global issues and use collaborative technologies to work with others to investigate solutions.**

Understanding(s): *Students will understand*	Essential Question(s):
1. Empathy builds a solid foundation for your ideas. 2. Empathy experiences assist us in going beyond our assumptions by putting ourselves in the shoes of the people we're designing for. 3. Empathy is a human-centered approach.	• How does empathy influence design? • How empathy goes beyond our assumptions and remove bias in order to clearly identify problems and solutions?

Learning Objectives: *Students will know…*	*Students will be able to:*
• How to organize and prepare thorough research in order to immerse yourself in the context of a problem. • How to practice effective observation. • How to properly interview to gather information.	• Build a research team. • Prepare a plan for research. • Identify sources of inspiration including users, experts, and extremes. • Select research participants. • Conduct research through interviews and direct observation. • Compile and analyze research findings.

Dates: November – December	Unit Plan: Interpretation and Definition

Stage 1 – Desired Results

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ISTE 5 - Computational Thinker: Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.
- **5a Students formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions.**
- **5b Students collect data or identify relevant data sets, use digital tools to analyze them, and represent data in various ways to facilitate problem-solving and decision-making.**
- **5c Students break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.**

Understanding(s): *Students will understand…*	Essential Question(s):
1. By reflecting on the discovery and empathy stages, interpretation provides an authentic recollection of learning from research. 2. Interpretation comes from finding meaning and turning it into an actionable opportunity.	• To what extent does reflection and empathy play a role in defining insight in framing opportunities? • To what extent does interpretation play in post research?

Learning Objectives: *Students will know…*	*Students will be able to:*
• Interpretation transforms stories into meaningful insights.	• Compile findings to showcase outcomes. • Share inspiring stories and communicate interpretations. • Identify themes. • Make sense of findings. • Define insights. • Frame specific questions.

Dates: January – February	Unit Plan: Ideation

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- **4b Students select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.**
- **4c Students develop, test and refine prototypes as part of a cyclical design process.**
- **4d Students exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems.**

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Understanding(s): *Students will understand…*	Essential Question(s):
1. Ideation is the result of interpretation through brainstorming possible solutions with and without constraints. 2. Creative confidence requires thinkers to realize that all ideas have value.	• To what extent does ideation promote and foster brainstorming through creative design solutions to address a challenge? • How does the concept of creative confidence promote ideation?

Learning Objectives: *Students will know…*	*Students will be able to:*
• In order to have successful brainstorming, you must start with a well-defined problem. • Successful brainstorming occurs when all ideas are encouraged and explored.	• Work collaboratively in a judgement free zone to encourage creative, out of the box thinking and innovative solutions. • Select promising ideas from brainstorming sessions to solve the defined problem. • Refine ideas through reality checks.

Dates: March – April	Unit Plan: Experimentation and Prototyping

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Understanding(s): *Students will understand…*	Essential Question(s):
1. Prototyping is not about getting it right the first time; the best prototypes change significantly over time. 2. Feedback is one of the most valuable tools in depending ideas; therefore, sharing prototypes helps designers see what really matters to people and which aspects need to be improved.	• To what extent does creating a tangible prototype of your concept assist in concept development? • How does formative feedback provide in the assistance and the improvement of prototyping?

Learning Objectives: *Students will know…*	Students will be able to:
• Types of prototypes include storyboards, diagrams, stories, advertisements, mock-ups, models, or role-plays. • Sources of feedback include extreme users that help facilitate conversations and capture new learning.	• Use ideation to develop at least three different versions of ideas to test possible solutions. • Select feedback participants and develop a question guide to measure success. • Integrate feedback into prototype changes.

Dates: May	Unit Plan: Evolution

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Understanding(s): *Students will understand…* 1. Evolution is the development of your concept over time that includes planning your next steps, communicate your idea to the people who can help, and documenting the process. 2. Change happens over time and subtle signs of progress are important.	**Essential Question(s):** • How do you define success of a design project? • To what extent can sharing your design story build partnerships and foster community support?
Learning Objectives: *Students will know…* • How concepts and ideas develop over time through a variety of processes and experiences. • Community outreach is critical for support and ultimate success.	*Students will be able to:* • Define criteria that measures your success. • Document your process. • Identify and engage others to build a community around concept.