6 Tech: Problem-Solving and Decision-Making Tools

Content Area: **Technology**
Course(s): **Technology Education 6**
Time Period: **Marking Period 4**
Length: **25 days**
Status: **Published**

Established Goals/Standards

TEC.5-8.	Technological products and systems are created through the application and appropriate use of technological resources.
TEC.5-8.8.1.8.A.1	Create professional documents (e.g., newsletter, personalized learning plan, business letter or flyer) using advanced features of a word processing program.
TEC.5-8.8.1.8.A.3	Create a multimedia presentation including sound and images.
TEC.5-8.8.1.8.F	Critical Thinking, Problem Solving, and Decision Making
TEC.5-8.8.1.8.F.1	Use an electronic authoring tool in collaboration with learners from other countries to evaluate and summarize the perspectives of other cultures about a current event or contemporary figure.
TEC.5-8.8.2.8.B	Design: Critical Thinking, Problem Solving, and Decision Making
TEC.5-8.8.2.8.B.1	Design and create a product using the design process that addresses a real world problem with specific criteria and constraints.
TEC.5-8.8.2.8.B.2	Identify the design constraints and trade offs involved in designing a prototype, (how the prototype might fail, and how it might be improved) by completing a design problem and reporting results in a multimedia presentation.
TEC.5-8.8.2.8.B.3	Solve a science-based design challenge and build a prototype using science and math principles throughout the design process.
TEC.5-8.8.2.8.E	Communication and Collaboration
TEC.5-8.8.2.8.E.1	Develop a product using the design process, data analysis and trends and maintain a digital log with annotated sketches to record the development cycle in collaboration with peers and experts in the field.
TEC.5-8.8.2.8.E.1	Work in collaboration with peers and experts in the field to develop a product using the design process, data analysis, and trends, and maintain a digital log with annotated sketches to record the development cycle.
TEC.5-8.8.2.8.F	Resources for a Technological World
TEC.5-8.8.2.8.F.1	Explain the impact of resource selection and processing in the development of a common technological product or system.
TEC.5-8.8.2.8.F.2	Explain how the resources and processes used in the production of a current product can be modified to have a more positive impact on the environment (e.g., recycled metals, alternate energy sources) and the economy.
TEC.5-8.8.2.8.G	The Designed World
TEC.5-8.8.2.8.G.1	Explain why human designed systems, products and environments need to be constantly monitored, maintained, and improved.
TEC.5-8.8.2.8.G.2	Explain the interdependence of a subsystem that operates as part of a system.
	Technology is created through the application and appropriate use of technological resources.
	Information accessed through the use of digital tools assists in generating solutions and making decisions.

The designed world is the product of a design process that provides the means to convert resources into products and systems.

Digital tools facilitate local and global communication and collaboration in designing products and systems.

The design process is a systematic approach to solving problems.

Essential Questions

- How can computer applications be used to solve problems?
- How can I transfer what I know to new technological experiences?
- How do I choose which technological tools to sue and when it is appropriate to use them?
- How does the design process affect society?
- What are the steps of the design process? Can they be done in any order?
- When are sophisticated tools required and when are the simplest tools the best to use?

Enduring Understanding

- A system has interrelated components designed to collectively achieve a desired goal.
- A tool is only as good as the person using it.
- All technological activities use resources that include tools / machines, materials, information, energy, capital, time and people.
- Selection of technology should be based on personal and / or career needs assessment.
- The design process is fundamental to technology and engineering.

Content

- Analyze the relationship between technology and career options.
- Demonstrate an understanding of current and future technology and its impact on society.
- Describe and demonstrate how technology can be used to solve a problem or attain a goal
- Examine the impact of technology in the workplace.
- Identify a problem and formulate a strategy to solve the problem using technology tools, brainstorming, flowcharting, and appropriate resources.
- Infuse the use of technology with one or more of the grade 6 core curriculum content areas.
- Present information collected and compiled from various resources, including but not limited to, the Internet and application programs
- Recognize the advantages of technology.
- Troubleshoot and solve general computer problems.
- Use data collection technology.

Resources

- United Streaming
- Web 2.0