Unit 1-4 Tech Literacy

Content Area: **Technology**
Course(s): **Technology 6**
Time Period: **MP1-4**
Length: **Once per week**
Status: **Published**

Essential Questions

- Who builds computers (hardware, peripherals, etc.)?
- What makes computers work (software programs, drivers, etc.)?
- What is a computer network and why do I need to know how to navigate a network?
- Does technology literacy guarantee success?
- Why do I need to be technologically literate?
- Who are digital citizens?
- How should students respond to the challenging situations they experience daily online?

Big Ideas

- Resources need to be utilized wisely to have positive effects on the environment and society.
- Some technological decisions involve tradeoffs between environmental and economic needs, while others have positive effects for both the economy and environment.
- Economic, political, social and cultural aspects of society drive development of new technological products, processes, and systems.

Cross-Curricular Integration

English Language Arts

- RST.6-8.3 Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks
- RST.6-8.4 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6-8 texts and topics.
- RST.6-8.7 Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).
- RST.6-8.10 By the end of grade 8, read and comprehend science/technical texts in the grades 6-8 text complexity band independently and proficiently.
- SL.6.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing

their own clearly.

- SL.6.2. Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study.

Career Readiness, Life Literacies and Key Skills Integration

Performance Expectations

- 9.4.8.CI.3: Examine challenges that may exist in the adoption of new ideas (e.g., 2.1.8.SSH, 6.1.8.CivicsPD.2).
- 9.4.8.CI.4: Explore the role of creativity and innovation in career pathways and industries.
- 9.4.8.CT.2: Develop multiple solutions to a problem and evaluate short- and long-term effects to determine the most plausible option (e.g., MS-ETS1-4, 6.1.8.CivicsDP.1)
- 9.4.8.DC.3: Describe tradeoffs between allowing information to be public (e.g., within online games) versus keeping information private and secure.
- 9.4.8.DC.4: Explain how information shared digitally is public and can be searched, copied, and potentially seen by public audiences.
- 9.4.8.DC.5: Manage digital identity and practice positive online behavior to avoid inappropriate forms of self-disclosure.
- 9.4.8.DC.6: Analyze online information to distinguish whether it is helpful or harmful to reputation.
- 9.4.8.GCA.1: Model how to navigate cultural differences with sensitivity and respect (e.g., 1.5.8.C1a).
- 9.4.8.GCA.2: Demonstrate openness to diverse ideas and perspectives through active discussions to achieve a group goal.
- 9.4.8.IML.1: Critically curate multiple resources to assess the credibility of sources when searching for information.
- 9.4.8.IML.3: Create a digital visualization that effectively communicates a data set using formatting techniques such as form, position, size, color, movement, and spatial grouping (e.g., 6.SP.B.4, 7.SP.B.8b)
- 9.4.8.IML.7: Use information from a variety of sources, contexts, disciplines, and cultures for a specific purpose (e.g., 1.2.8.C2a, 1.4.8.CR2a, 2.1.8.CHSS/IV.8.AI.1, W.5.8, 6.1.8.GeoSV.3.a, 6.1.8.CivicsDP.4.b, 7.1.NH. IPRET.8).
- 9.4.8.IML.12: Use relevant tools to produce, publish, and deliver information supported with evidence for an authentic audience.
- 9.4.8.TL.2: Gather data and digitally represent information to communicate a real-world problem (e.g., MS-ESS3-4, 6.1.8.EconET.1, 6.1.8.CivicsPR.4).

- 9.4.8.TL.3: Select appropriate tools to organize and present information digitally.
- 9.4.8.TL.4: Synthesize and publish information about a local or global issue or event (e.g., MSLS4-5, 6.1.8.CivicsPI.3).
- 9.4.8.TL.6: Collaborate to develop and publish work that provides perspectives on a real-world problem.

Practices

- Act as a responsible and contributing community member and employee.
- Consider the environmental, social and economic impacts of decisions.
- Demonstrate creativity and innovation
- Utilize critical thinking to make sense of problems and persevere in solving them
- Model integrity, ethical leadership and effective management.
- Plan education and career paths aligned to personal goals
- Use technology to enhance productivity, increase collaboration and communicate effectively.
- Work productively in teams while using cultural/global competence.

Enduring Understandings

- 8.2.8.ITH.1: Explain how the development and use of technology influences economic, political, social, and cultural issues.
- 8.2.8.ETW.4: Compare the environmental effects of two alternative technologies devised to address climate change issues and use data to justify which choice is best.

Activities and Assessments

- Let’s Take a Typing Speed Test! - Take a minute to find out your true typing speed and to get a typing skills analysis.: http://www.typingtest.com
- Keyboarding Games: http://www.abcya.com/search.htm?text=Keyboarding
- Learning.com

Climate Change

8.1.8.DA.6: Analyze climate change computational models and propose refinements.

- Activity: Students may be able to analyze computational models of climate change, understand their role in making predictions, and propose refinements to improve these models. Students can be assessed by creating a poster presentation that (1) Explains how a specific climate change model works. (2) Identifies the key variables used in the model. (3) Describes a prediction made by the model. (4) Proposes one refinement to improve the model's accuracy (5) Justifies their proposed refinement based on current climate data or research.

8.2.8.ETW.4: Compare the environmental effects of two alternative technologies devised to address climate change issues and use data to justify which choice is best.

- Activity: Compare and evaluate the environmental and economic impacts of two alternative technologies designed to address climate change, using data to justify their choice for the best solution. Create a presentation comparing two climate change mitigation technologies (e.g., solar panels vs. wind turbines, or electric cars vs. biofuels). They will: (1) Describe each technology's purpose and function (2) Compare their environmental impacts (positive and negative) (3) Analyze their economic implications (4) Use data to support their arguments (5) Conclude which technology they believe is the better choice and why.

Additional Resources

- Antoinette Smith | Software Engineer: https://ny.pbslearningmedia.org/resource/d3364203-71ec-4a88-86b1-3a16185b59d5/antoinette-smith-full-stack-software-engineer-video/ **(Amistad Law)**
- Video: Technology Dissection: https://ny.pbslearningmedia.org/resource/e0f6d7cc-3c66-4016-9907-8b413121d0fa/e0f6d7cc-3c66-4016-9907-8b413121d0fa/
- Video: Teen Voices: Presenting Yourself Online: https://www.commonsense.org/education/digital-citizenship/lesson/who-are-you-online (available in Spanish) **(Diversity, Equity, and Inclusion)**
- Supporting students with disabilities for the Hour of Code: https://hourofcode.com/us/supporting-special-needs-students **(Disabilities Awareness)**