Unit 1-4B Communication and Collaboration

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

Essential Questions

- How has the use of digital tools improved opportunities for communication and collaboration?
- What appropriate tools do you use to upload certain file formats?
- What can I add and not add to Google Sites?
- What file formats are needed to upload to certain applications?

Big Ideas

- People use digital devices and tools to automate the collection, use, and transformation of data.
- The manner in which data is collected and transformed is influenced by the type of digital device(s) available and the intended use of the data.
- Software and hardware determine a computing system's capability to store and process information.
- The design or selection of a computing system involves multiple considerations and potential tradeoffs.
- Individuals design algorithms that are reusable in many situations. Algorithms that are readable are easier to follow, test, and debug.

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

- W.6.10. Write routinely over extended time frames (time for research, reflection, metacognition/self correction, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes

Science

- MS-ETS1-1 Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.

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

- 8.1.8.DA.1: Organize and transform data collected using computational tools to make it usable for a specific purpose.
- 8.1.8.CS.2: Design a system that combines hardware and software components to process data.
- 8.1.12.AP.1: Design and illustrate algorithms that solve complex problems using flowcharts and/or pseudocode.

Activities and Assessments

- Podcasting
- Blogging

Additional Resources

- Video: 21st Century Learning: https://ny.pbslearningmedia.org/resource/2a54d422-5ad2-4d2d-a093-1ecccaa579d4/21st-century-learning/
- How to Create a Wiki: https://www.surfnetkids.com/resources/how-to-create-a-wiki/
- SciGirls | High Tech Fashion 01: Brainstorm & Research: https://ny.pbslearningmedia.org/resource/d2ab5641-6cdd-4f4c-b5df-d06f914a022f/high-tech-fashion-01-brainstorm-research/
- Creating Podcasts | Media Arts Toolkit: https://ny.pbslearningmedia.org/resource/media_arts_classroom7/creating-podcasts/
- P.Z. Myers on the Power of Science Blogging: https://ny.pbslearningmedia.org/resource/ec1378cf-c85d-4e9e-9aab-ce37c756a805/pz-myers-on-the-power-of-science-blogging/