

CURRICULUM

FOR

DIGITAL LITERACY

GRADE 8

This curriculum is part of the Educational Program of Studies of the Rahway Public Schools.

ACKNOWLEDGMENTS

Dr. Susan Dube, Program Supervisor of Math, Science, and Technology Education

The Board acknowledges the following who contributed to the preparation of this curriculum.

Lauren A. Battiato

Dr. Tiffany A. Beer, Director of Curriculum and Instruction

Subject/Course Title:
Digital Literacy
Grade 8

Date of Board Adoption:
September 19, 2023

RAHWAY PUBLIC SCHOOLS CURRICULUM

Digital Literacy: Grade 8

PACING GUIDE

Unit	Title	Pacing
1	Digital Media Response and Analysis	10 days
2	Digital Storytelling in the Community	10 days
3	Introduction to Python with Imagi	10 days

ACCOMMODATIONS

<p>504 Accommodations:</p> <ul style="list-style-type: none"> ● Provide scaffolded vocabulary and vocabulary lists. ● Provide extra visual and verbal cues and prompts. ● Provide adapted/alternate/excerpted versions of the text and/or modified supplementary materials. ● Provide links to audio files and utilize video clips. ● Provide graphic organizers and/or checklists. ● Provide modified rubrics. ● Provide a copy of teaching notes, especially any key terms, in advance. ● Allow additional time to complete assignments and/or assessments. ● Provide shorter writing assignments. ● Provide sentence starters. ● Utilize small group instruction. ● Utilize Think-Pair-Share structure. ● Check for understanding frequently. ● Have student restate information. ● Support auditory presentations with visuals. ● Weekly home-school communication tools (notebook, daily log, phone calls or email messages). ● Provide study sheets and teacher outlines prior to assessments. ● Quiet corner or room to calm down and relax when anxious. ● Reduction of distractions. ● Permit answers to be dictated. ● Hands-on activities. ● Use of manipulatives. ● Assign preferential seating. ● No penalty for spelling errors or sloppy handwriting. ● Follow a routine/schedule. ● Provide student with rest breaks. ● Use verbal and visual cues regarding directions and staying on task. ● Assist in maintaining agenda book. 	<p>IEP Accommodations:</p> <ul style="list-style-type: none"> ● Provide scaffolded vocabulary and vocabulary lists. ● Differentiate reading levels of texts (e.g., Newsela). ● Provide adapted/alternate/excerpted versions of the text and/or modified supplementary materials. ● Provide extra visual and verbal cues and prompts. ● Provide links to audio files and utilize video clips. ● Provide graphic organizers and/or checklists. ● Provide modified rubrics. ● Provide a copy of teaching notes, especially any key terms, in advance. ● Provide students with additional information to supplement notes. ● Modify questioning techniques and provide a reduced number of questions or items on tests. ● Allow additional time to complete assignments and/or assessments. ● Provide shorter writing assignments. ● Provide sentence starters. ● Utilize small group instruction. ● Utilize Think-Pair-Share structure. ● Check for understanding frequently. ● Have student restate information. ● Support auditory presentations with visuals. ● Provide study sheets and teacher outlines prior to assessments. ● Use of manipulatives. ● Have students work with partners or in groups for reading, presentations, assignments, and analyses. ● Assign appropriate roles in collaborative work. ● Assign preferential seating. ● Follow a routine/schedule.
<p>Gifted and Talented Accommodations:</p> <ul style="list-style-type: none"> ● Differentiate reading levels of texts (e.g., Newsela). ● Offer students additional texts with higher lexile levels. ● Provide more challenging and/or more supplemental readings and/or activities to deepen understanding. ● Allow for independent reading, research, and projects. ● Accelerate or compact the curriculum. ● Offer higher-level thinking questions for deeper analysis. ● Offer more rigorous materials/tasks/prompts. ● Increase number and complexity of sources. ● Assign group research and presentations to teach the class. ● Assign/allow for leadership roles during collaborative work and in other learning activities. 	<p>ML Accommodations:</p> <ul style="list-style-type: none"> ● Provide extended time. ● Assign preferential seating. ● Assign peer buddy who the student can work with. ● Check for understanding frequently. ● Provide language feedback often (such as grammar errors, tenses, subject-verb agreements, etc...). ● Have student repeat directions. ● Make vocabulary words available during classwork and exams. ● Use study guides/checklists to organize information. ● Repeat directions. ● Increase one-on-one conferencing. ● Allow student to listen to an audio version of the text. ● Give directions in small, distinct steps. ● Allow copying from paper/book. ● Give student a copy of the class notes.

- Provide written and oral instructions.
- Differentiate reading levels of texts (e.g., Newsela).
- Shorten assignments.
- Read directions aloud to student.
- Give oral clues or prompts.
- Record or type assignments.
- Adapt worksheets/packets.
- Create alternate assignments.
- Have student enter written assignments in criterion, where they can use the planning maps to help get them started and receive feedback after it is submitted.
- Allow student to resubmit assignments.
- Use small group instruction.
- Simplify language.
- Provide scaffolded vocabulary and vocabulary lists.
- Demonstrate concepts possibly through the use of visuals.
- Use manipulatives.
- Emphasize critical information by highlighting it for the student.
- Use graphic organizers.
- Pre-teach or pre-view vocabulary.
- Provide student with a list of prompts or sentence starters that they can use when completing a written assignment.
- Provide audio versions of the textbooks.
- Highlight textbooks/study guides.
- Use supplementary materials.
- Give assistance in note taking
- Use adapted/modified textbooks.
- Allow use of computer/word processor.
- Allow student to answer orally, give extended time (time-and-a-half).
- Allow tests to be given in a separate location (with the ESL teacher).
- Allow additional time to complete assignments and/or assessments.
- Read question to student to clarify.
- Provide a definition or synonym for words on a test that do not impact the validity of the exam.
- Modify the format of assessments.
- Shorten test length or require only selected test items.
- Create alternative assessments.
- On an exam other than a spelling test, don't take points off for spelling errors.

UNIT OVERVIEW

Content Area: Technology

Unit Title: Digital Media Response and Analysis

Target Course/Grade Level: 8

Unit Summary: Students will be able to demonstrate digital citizenship skills by using appropriate news and media response tools and create a current events podcast on the topic of their choice.

Specifically, students will be able to:

- Identify the different elements of digital media, such as text, images, audio, and video.
- Analyze how digital media is used to communicate messages.
- Evaluate the effectiveness of digital media in conveying messages.
- Create digital media that effectively communicates a message.
- Apply ethical principles to the creation and use of digital media.
- Define “breaking news”, and understand why individuals and news outlets want to be first to report a story.
- Analyze breaking news alerts to identify clues of false or incomplete information.
- Reflect on the consequences of reacting impulsively to breaking news alerts.

Approximate Length of Unit: 10 days

LEARNING TARGETS

NJ Student Learning Standards:

Computer Science and Design Thinking: Educational Technology

8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.

A. Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems and operations.

B. Creativity and Innovation: Students demonstrate creative thinking, construct knowledge and develop innovative products and process using technology.

C. Communication and Collaboration: Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.

D. Digital Citizenship: Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.

E. Research and Information Fluency: Students apply digital tools to gather, evaluate, and use information.

Indicators:

8.1.8.A.1 Demonstrate knowledge of a real world problem using digital tools.

8.1.8.A.2 Create a document (e.g., newsletter, report, personalized learning plan, business letters, or flyers) using one or more digital applications to be critiqued by professionals for usability.

8.1.8.A.3 Use and/or develop a simulation that provides an environment to solve a real world problem or theory.

- 8.1.8.A.4 Graph and calculate data within a spreadsheet and present a summary of the results.
- 8.1.8.A.5 Create a database query, sort and create a report and describe the process, and explain the report results.
- 8.1.8.D.1 Understand and model appropriate online behaviors related to cyber safety, cyber bullying, cyber security, and cyber ethics including appropriate use of social media.
- 8.1.8.D.2 Demonstrate the application of appropriate citations to digital content.
- 8.1.8.D.3 Demonstrate an understanding of fair use and Creative Commons to intellectual property.
- 8.1.8.D.4 Assess the credibility and accuracy of digital content.
- 8.1.8.D.5 Understand appropriate uses for social media and the negative consequences of misuse.
- 8.1.8.E.1 Effectively use a variety of search tools and filters in professional public databases to find information to solve a real world problem.

ISTE Standards:

- 1. Empowered Learner: 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.

- 2 Digital Citizen: Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.
 - 2a: Students cultivate and manage their digital identity and reputation and are aware of the permanence of their actions in the digital world.
 - 2b: Students engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.
 - 2c: Students demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.
 - 2d: Students manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.

Career Readiness, Life Literacies, and Key Skills:

- 9.4.8.CI.1:** Assess data gathered on varying perspectives on causes of climate change (e.g., cross cultural, gender-specific, generational), and determine how the data can best be used to design multiple potential solutions.
- 9.4.8.CT.1:** Evaluate diverse solutions proposed by a variety of individuals, organizations, and/or agencies to a local or global problem, such as climate change, and use critical thinking skills to predict which one(s) are likely to be effective (e.g., MS-ETS1-2).
- 9.4.8.CT.2:** Develop multiple solutions to a problem and evaluate short- and long-term effects to determine the most plausible option.
- 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.
- 9.4.8.IML.4:** Ask insightful questions to organize different types of data and create meaningful visualizations.
- 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.1: Construct a spreadsheet in order to analyze multiple data sets, identify relationships, and facilitate data-based decision-making.

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.

Interdisciplinary Connections and Standards:

Language Arts Literacy:

NJSLSA.R1. Read closely to determine what the text says explicitly and to make logical inferences and relevant connections from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

NJSLSA.R7. Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.

Mathematical Practices

MP1 Make sense of problems and persevere in solving them.

MP2 Reason abstractly and quantitatively.

MP3 Construct viable arguments and critique the reasoning of others.

MP5 Use appropriate tools strategically.

MP7 Look for and make use of structure.

Unit Understandings:

Students will understand that...

- Digital media is a powerful tool for communication and can be used to convey a variety of messages.
- The elements of digital media, such as text, images, audio, and video, can be used to create meaning in different ways.
- The effectiveness of digital media in conveying a message can be influenced by the way the elements are used.
- Digital media can be used to raise awareness of important issues and to promote social change.
- It is important to be critical of digital media and to be aware of the ways in which it can be used to manipulate and deceive.
- Ethical principles should be applied to the creation and use of digital media.
- Digital media can be used to create new forms of art and to express oneself creatively.

Unit Essential Questions:

- What are the different elements of digital media?
- How are the elements of digital media used to create meaning?
- How can the effectiveness of digital media in conveying a message be influenced?
- How can digital media be used to raise awareness of important issues and to promote social change?
- Why is it important to be critical of digital media and to be aware of the ways in which it can be used to manipulate and deceive?
- What ethical principles should be applied to the creation and use of digital media?
- How can digital media be used to create new forms of art and to express oneself creatively?

Knowledge and Skills:

Students will know...

- How to identify and research current events topics.
- How to write a script for a podcast.
- How to record and edit audio.
- How to publish a podcast.
- How to identify important information from current events articles and to use this information to create a well-informed podcast.
- How to write clear and concise scripts and to deliver their lines in a way that is engaging and informative.
- How to use audio recording and editing software to create a high-quality podcast.
- How to collaborate in order to research topics, write scripts, design podcast cover art, and record and edit audio.

Students will be able to...

- Gather information from credible resources.
- Explain and apply appropriate media response skills and the negative consequences of hasty media response.
- Demonstrate acceptable digital citizenship behaviors.
- Use Google Slides to create a presentation that summarizes the key points of the podcast. This presentation can be used to share the podcast with others or to provide an overview of the content for students who are unable to listen to the podcast.
- Use Vocaroo to record audio clips of the podcast. This can be done individually or as a group.
- Use Microsoft Flip to create a visual representation of the podcast. This can be done by creating a slideshow or by recording a video.
- Use Google Docs to plan, organize, and compose their podcast's script and show notes.

EVIDENCE OF LEARNING

Assessment:

What evidence will be collected and deemed acceptable to show that students truly "understand"?

- **End of Unit Assessment:**
- Students will create a clear, concise, and informative podcast on a current events topic.

Learning Activities:

What differentiated learning experiences and instruction will enable all students to achieve the desired results?

- Students will use a variety of websites and Google apps in order to create an engaging and informative podcast on a current event of their choice.
- Using a digital edtech tool of their choice, students will reflect on the process of creating the podcast, the challenges and successes they faced, and how they learned from the experience.
- Students will facilitate an engaging and informative presentation of their podcast to the class.

RESOURCES

Teacher Resources:

- [CommonSense Education Digital Citizenship Grade 8 Media Analysis : This Just In!](#)
- Spark Creativity: [PBL Podcasting Unit](#)
- [Podcast Rubric](#)
- [New York Times Learning Network: Student Podcast Contest Resources](#)
- [50 Ideas for Student Created Podcasts](#)

Equipment Needed:

- Chromebooks
- Google Slides
- Google Docs
- Google Drawings
- Canva for Education
- Vocaroo
- Microsoft Flip
- Adobe Express
- CapCut
- WeVideo

UNIT OVERVIEW

Content Area: Technology

Unit Title: Digital Storytelling in the Community

Target Course/Grade Level: 8

Unit Summary: This unit will teach students how to create a video that both promotes and tells the story of a community organization/non-profit in their town. Students will learn the basics of digital storytelling, including how to research a topic, write a script, storyboard, and edit video. They will also have the opportunity to interview members of the community organization and learn about the impact it has on their town.

The unit will culminate in the creation of a final video that students will share with their classmates and the community.

Specifically, students will be able to:

- Develop their digital storytelling skills
- Research a community organization/initiative/ nonprofit
- Organize and compose a script
- Organize and create a storyboard
- Use basic video editing web-based programs
- Plan and conduct video interviews

Approximate Length of Unit: 10 days

LEARNING TARGETS

NJ Student Learning Standards:

Educational Technology

Standard 8.2.1: Students use computational thinking to design and create solutions to problems.

Indicator 8.2.1a: Students analyze a problem and identify the key components of the problem.

Indicator 8.2.1b: Students brainstorm possible solutions to the problem and evaluate the feasibility of each solution.

Indicator 8.2.1c: Students select a solution to the problem and implement the solution.

Computer Science and Design Thinking: Educational Technology

Standard 8.2.2: Students use digital tools to communicate and share their solutions.

Indicator 8.2.2a: Students create digital artifacts that communicate their solutions to the problem.

Indicator 8.2.2b: Students share their digital artifacts with others.

Indicator 8.2.2c: Students receive feedback on their digital artifacts from others.

ISTE Student Standards

ISTE Standard 1: Students use technology to communicate and collaborate effectively.

Indicator 1a: Students collaborate with others to create digital artifacts.

Indicator 1b: Students use technology to communicate and share information with others.

ISTE Standard 2: Students use technology to create and share information.

Indicator 2a: Students use technology to create digital stories that communicate their ideas.

Indicator 2b: Students share their digital stories with others.

ISTE Standard 3: Students use technology to solve problems.

Indicator 3a: Students use technology to research and solve problems.

Indicator 3b: Students use technology to create solutions to problems.

Career Readiness, Life Literacies, and Key Skills:

9.4.8.CI.1: Assess data gathered on varying perspectives on causes of climate change (e.g., cross cultural, gender-specific, generational), and determine how the data can best be used to design multiple potential solutions.

9.4.8.CT.1: Evaluate diverse solutions proposed by a variety of individuals, organizations, and/or agencies to a local or global problem, such as climate change, and use critical thinking skills to predict which one(s) are likely to be effective (e.g., MS-ETS1-2).

9.4.8.CT.2: Develop multiple solutions to a problem and evaluate short- and long-term effects to determine the most plausible option.

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.

9.4.8.IML.4: Ask insightful questions to organize different types of data and create meaningful visualizations.

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.1: Construct a spreadsheet in order to analyze multiple data sets, identify relationships, and facilitate data-based decision-making.

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.

Interdisciplinary Connections and Standards:

Language Arts Literacy:

NJSLSA.R1. Read closely to determine what the text says explicitly and to make logical inferences and relevant connections from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

NJSLSA.R7. Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.

Mathematical Practices

MP1 Make sense of problems and persevere in solving them.

MP2 Reason abstractly and quantitatively.

MP3 Construct viable arguments and critique the reasoning of others.

MP5 Use appropriate tools strategically.

MP7 Look for and make use of structure

Unit Understandings:

Students will understand that...

- Students will understand the basics of digital storytelling.
- Students will be able to research a community organization and create a script that tells the story of the organization.
- Students will be able to storyboard their video and create a visual representation of their script.
- Students will be able to edit their video and produce a final product that is clear, concise, and engaging.
- Students will be able to share their video with their classmates and the community.
- Students will be able to use digital storytelling as a tool to learn about their community and make a positive impact.

Unit Essential Questions:

- How can digital storytelling be used to tell the story of a community organization?
- Why is it important to research a community organization before creating a digital story about it?
- How can a storyboard help to visualize a digital story?
- Why is it important to edit a digital story before sharing it with others?
- How can digital storytelling be used to learn about a community and make a positive impact?
- Why is it important to use visuals in digital storytelling?
- How can I use music and sound effects to enhance my digital story?
- Why is it important to get feedback on my digital story from others?

Knowledge and Skills:

Students will know...

- How to research a community organization and create a script that tells the story of the organization.
- How to storyboard their video and create a visual representation of their script.
- How to edit their video and produce a final product that is clear, concise, and engaging.

Students will be able to...

- Use digital storytelling to share their ideas with others.
- Use visuals in digital storytelling to enhance their stories.
- Receive feedback on their digital stories from others and use that feedback to improve their stories.

EVIDENCE OF LEARNING

Assessment:

What evidence will be collected and deemed acceptable to show that students truly “understand”?

- **End of Unit Assessment:**
- Research a community organization in Rahway in order to create a Digital Storyteller Presentation with Google Slides

Learning Activities:

What differentiated learning experiences and instruction will enable all students to achieve the desired results?

- Plan and write a script for a digital story using Google Docs
- Create a digital storyboard on Slides, Microsoft Flip, and/or another edtech tool of their choice
- Record audio and/or video on Vocaroo, Flip, WeVideo, CapCut and/or another edtech tool of their choice to enhance their digital storytelling presentation in Slides
- Share their digital storytelling presentations with the community through Google Sites, Padlet, and/or another edtech tool of their choice

RESOURCES

Teacher Resources:

- [Digital Storytelling Video Presentation Rubric](#)
- [StoryCorp: Why Do Stories Matter?](#)
- [StoryCorp: Great Questions List](#)
- [NonProfit Organizations in Rahway](#)
- [TAP Into Rahway: Community News](#)
- [WeVideo: Digital Storytelling Webinar Video](#)
- [How to Incorporate Digital Stories in the Classroom](#)

Equipment Needed:

- Equipment Needed
- Chromebooks
- Google Sites
- Google Slides
- Google Docs
- Adobe Express
- Padlet
- CapCut
- WeVideo
- Flip
- Canva for Education

UNIT OVERVIEW

Content Area: Technology

Unit Title: Introduction to Python with Imagi

Target Course/Grade Level: 8

Unit Summary: This unit will introduce eighth graders to the basics of Python programming, with a focus on using the Imagi app. Students will learn about variables, data types, operators, conditional statements, loops, and functions. By the end of the unit, students will be able to write code to control the Imagi pixel charm.

Specifically, students will be able to:

- Understand the basics of Python programming
- Use variables, data types, operators, conditional statements, loops, and functions in Python
- Write code to control the Imagi pixel charm

Approximate Length of Unit: 10 days

LEARNING TARGETS

NJ Student Learning Standards:

New Jersey Student Learning Standards

Computer Science and Design Thinking: Educational Technology

8.1 Educational Technology:

All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.

A. Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems and operations.

B. Creativity and Innovation: Students demonstrate creative thinking, construct knowledge and develop innovative products and processes using technology.

C. Communication and Collaboration: Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.

D. Digital Citizenship: Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.

E. Research and Information Fluency: Students apply digital tools to gather, evaluate, and use information.

Indicators:

8.1.8.A.1 Demonstrate knowledge of a real world problem using digital tools.

8.1.8.A.2 Create a document (e.g., newsletter, report, personalized learning plan, business letters, or flyers) using one or more digital applications to be critiqued by professionals for usability.

8.1.8.A.3 Use and/or develop a simulation that provides an environment to solve a real world problem or theory.

8.1.8.A.4 Graph and calculate data within a spreadsheet and present a summary of the results.

8.1.8.A.5 Create a database query, sort and create a report and describe the process, and explain the report results.

8.1.8.D.1 Understand and model appropriate online behaviors related to cyber safety, cyber bullying, cyber

security, and cyber ethics including appropriate use of social media.

8.1.8.D.2 Demonstrate the application of appropriate citations to digital content.

8.1.8.D.3 Demonstrate an understanding of fair use and Creative Commons to intellectual property.

8.1.8.D.4 Assess the credibility and accuracy of digital content.

8.1.8.D.5 Understand appropriate uses for social media and the negative consequences of misuse.

8.1.8.E.1 Effectively use a variety of search tools and filters in professional public databases to find information to solve a real world problem.

ISTE Standards:

1. Empowered Learner: 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.

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9.4.8.CT.2: Develop multiple solutions to a problem and evaluate short- and long-term effects to determine the most plausible option.

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Mathematical Practices

MP1 Make sense of problems and persevere in solving them.

MP2 Reason abstractly and quantitatively.

MP3 Construct viable arguments and critique the reasoning of others.

MP5 Use appropriate tools strategically.

MP7 Look for and make use of structure.

Unit Understandings:

Students will understand...

- Python is a general-purpose programming language that is used for a variety of tasks, including data science, machine learning, and web development.
- The basic syntax of Python, including variables, data types, operators, and statements.

Unit Essential Questions:

- What is Python?
- What are the different data types in Python?
- How do I use variables in Python?
- How do I use operators in Python?
- How do I write conditional statements in Python?
- How do I write loops in Python?
- How do I write functions in Python?
- How can I use Python to control the Imagi pixel charm?

Knowledge and Skills:

Students will know...

- The basic concepts of Python programming
- How to write code to solve problems and create projects using the Imagi pixel charm
- How to use Python to express creativity and make unique projects

Students will be able to...

- Reflect on learning and identify areas where improvement is needed
- Explain the benefits of using Python for creative expression and problem-solving
- Use Python to collaborate with others on projects
- Use Python to learn about other computer science concepts
- Apply Python skills to other areas of life

EVIDENCE OF LEARNING

Assessment:

What evidence will be collected and deemed acceptable to show that students truly “understand”?

- **End of Unit Assessment:**
- Students will complete a variety of activities to demonstrate their learning, such as:
- Writing code to solve problems
- Creating projects using the Imagi pixel charm
- Reflecting on their learning

Learning Activities:

What differentiated learning experiences and instruction will enable all students to achieve the desired results?

- Problem-solving: Students will be given problems to solve using Python such as calculating the area of a triangle, finding the Fibonacci sequence, or generating random numbers.
- Project-Based Learning: Students will create projects using the Imagi pixel charm such as creating a game, making a piece of art, or programming the charm to react to certain stimuli.
- Reflection: Students will reflect on their learning throughout the unit by writing a journal entry, creating a presentation, or making a video.

RESOURCES

Teacher Resources:

- [ImagiEdu](#)
- [Imagi for Educators](#)
- [Microsoft Flip](#)
- [Google Applied Digital Skills: Introduction to Coding](#)
- [GCF Global: Programming Languages](#)
- [BrainPop: Computer Science and Coding](#)

Equipment Needed:

- Chromebooks
- Imagi Charms