

Pine Hill Public Schools Curriculum

Content Area:		Technology	
Course Title/ Grade Level:		5th Grade	
Unit 1:	Beginning of the Year Expectations and Skill Review	Duration:	September
Unit 2:	Computers to Organize Information	Duration::	October-November
Unit 3:	Coding	Duration:	December-January
Unit 4:	Computers to Communicate: Research & Non-Fiction	Duration:	Qtr. 3
Unit 5:	STEM & Year End Review	Duration:	Qtr. 4
BOE Approved Revision:			
BOE Initial Adoption Date:		August 23, 2016	

**Pine Hill Public Schools
Curriculum**

Unit Title Beginning of the Year Expectations and Skill Review		Unit #: 1
Course or Grade Level: Fifth Grade		Length of Time: September
Pacing	4 weeks/sessions	
Essential Questions	What are the expectations for using the tools in the computer lab? What are the expectations and responsibilities of being part of an online community? How do I refer to technology tools correctly?	
Content	<ul style="list-style-type: none"> ● Expectations vs. Rules ● Digital Citizenship ● Vocabulary 	
Skills	<ul style="list-style-type: none"> ● Keyboarding ● Positive, Safe Communication ● Cyber Safety ● Ethics of Research and Internet Use 	
Assessments	<ul style="list-style-type: none"> ● Student Work: worksheets, exit tickets, vocabulary project ● Teacher Observation 	
Interventions / differentiated instruction	<ul style="list-style-type: none"> ● Peer/Partner work 	
Inter-disciplinary Connections	<ul style="list-style-type: none"> ● Health: safety ● ELA: research 	
Lesson resources / Activities	<ul style="list-style-type: none"> ● Common Sense Media ● Teachers Pay Teachers Resource: Technology Teacher Planning Binder, Grade 5 	

2014 NJCCCS

Standard: 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.

Strand(s):

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

Content Statement(s):

Advocate and practice safe, legal, and responsible use of information and technology.

CPI # / CPI(s):

8.1.5.D.1 Understand the need for and use of copyrights.
8.1.5.D.2 Analyze the resource citations in online materials for proper use.

Demonstrate personal responsibility for lifelong learning.

8.1.5.D.3 Demonstrate an understanding of the need to practice cyber safety, cyber security, and cyber ethics when using technologies and social media.

Exhibit leadership for digital citizenship

8.1.5.D.4 Understand digital citizenship and demonstrate an understanding of the personal consequences of inappropriate use of technology and social media.

21st Century Themes

x	Global Awareness	x	Financial, Economic, Business, and Entrepreneurial Literacy	x	Civic Literacy	x	Health Literacy
21st Century Skills							
	Creativity and Innovation		Critical Thinking and Problem Solving	x	Communication and Collaboration		Information Literacy
x	Media Literacy	x	ICT Literacy	x	Life and Career Skills		

Pine Hill Public Schools Curriculum	
Unit Title Computers to Organize Information	Unit #: 2
Course or Grade Level: Fifth Grade	Length of Time: October-November
Pacing	6 weeks/sessions
Essential Questions	How can spreadsheets help me present information to others? How can I show data different ways?
Content	<ul style="list-style-type: none"> • Spreadsheets • Graphs
Skills	<ul style="list-style-type: none"> • Creating a table • Input data • Graph data • Sort/Filter data • Analyze data
Assessments	<ul style="list-style-type: none"> • Student work: spreadsheets • Teacher Observation
Interventions / differentiated instruction	<ul style="list-style-type: none"> • Peer/Partner Work • Picture Icon Directions • Video Instructions
Inter-disciplinary Connections	<ul style="list-style-type: none"> • Math: data
Lesson resources / Activities	<ul style="list-style-type: none"> • http://oakdome.com/k5/lesson-plans/fifth-grade-lesson-plans.php
2014 NJCCCS	
Standard: 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.	

Strand(s): A. Technology Operations and Concepts: *Students demonstrate a sound understanding of technology concepts, systems and operations.*

Content Statement(s): Select and use applications effectively and productively.	CPI # / CPI(s): 8.1.5.A.4 Graph data using a spreadsheet, analyze and produce a report that explains the analysis of the data. 8.1.5.A.5 Create and use a database to answer basic questions.
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21st Century Themes

Global Awareness	x	Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy
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21st Century Skills

Creativity and Innovation	x	Critical Thinking and Problem Solving	x	Communication and Collaboration		Information Literacy
Media Literacy	x	ICT Literacy	x	Life and Career Skills		

**Pine Hill Public Schools
Curriculum**

Unit Title Coding		Unit #: 3
Course or Grade Level: Fifth Grade		Length of Time: December-January
Pacing	8 weeks/sessions	
Essential Questions	How can I use what I know about writing computer code to make a game, story, or product of my own?	
Content	<ul style="list-style-type: none"> • Programming • Vocabulary 	
Skills	<ul style="list-style-type: none"> • Original ideas • Writing algorithms • Using loops, events, and procedures • Vocabulary: algorithm, debug, code, loop, event, procedure 	
Assessments	<ul style="list-style-type: none"> • Student Work: programs • Teacher Observation 	
Interventions / differentiated instruction	<ul style="list-style-type: none"> • Peer/Partner Work • Video Instructions • Picture Icon Directions 	
Inter-disciplinary Connections	<ul style="list-style-type: none"> • Math: logical reasoning 	

Lesson resources / Activities	<ul style="list-style-type: none"> • Code.org • Scratch.mit.edu
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2014 NJCCCS

Standard: 8.2 Technology Education, Engineering, Design, and Computational Thinking - Programming:
All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.

Strand(s): E. Computational Thinking: Programming: *Computational thinking builds and enhances problem solving, allowing students to move beyond using knowledge to creating knowledge.*

<p>Content Statement(s): Computational thinking and computer programming as tools used in design and engineering.</p>	<p>CPI # / CPI(s): 8.2.5.E.1 Identify how computer programming impacts our everyday lives 8.2.5.E.2 Demonstrate an understanding of how a computer takes input of data, processes and stores the data through a series of commands, and outputs information. 8.2.5.E.3 Using a simple, visual programming language, create a program using loops, events and procedures to generate specific output. 8.2.5.E.4 Use appropriate terms in conversation (e.g., algorithm, program, debug, loop, events, procedures, memory, storage, processing, software, coding, procedure, and data).</p>
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21st Century Themes

	Global Awareness	x	Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy
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21st Century Skills

x	Creativity and Innovation	x	Critical Thinking and Problem Solving		Communication and Collaboration		Information Literacy
	Media Literacy	x	ICT Literacy	x	Life and Career Skills		

Pine Hill Public Schools Curriculum	
Unit Title Computers to Communicate: Research & Non-Fiction	Unit #: 4
Course or Grade Level: Fifth Grade	Length of Time: Qtr. 3
Pacing	10 weeks/sessions
Essential Questions	How do I make a plan for research? How do I assess the quality of the information I find? How do I paraphrase information I find? How can I share what I've learned with others?
Content	<ul style="list-style-type: none"> ● Research Skills ● Word Processing ● Sharing Information
Skills	<ul style="list-style-type: none"> ● Search skills ● Citations ● Plagiarism ● Word Processing/Presentation Software ● Sharing Work: Google Apps, QR Codes, website, etc.
Assessments	<ul style="list-style-type: none"> ● Student Work: notes, graphic organizers, final product ● Teacher Observation
Interventions / differentiated instruction	<ul style="list-style-type: none"> ● Peer/Partner Work ● Photo Icon Directions
Inter-disciplinary Connections	<ul style="list-style-type: none"> ● ELA: research, word processing ● Science/Social Studies: research topic
Lesson resources / Activities	<ul style="list-style-type: none"> ● Technokids: TechnoResearch ● Google Apps
2014 NJCCCS	
Standard: 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.	
<p>Strand(s): A. Technology Operations and Concepts: <i>Students demonstrate a sound understanding of technology concepts, systems and operations.</i></p> <p>B. Creativity and Innovation: <i>Students demonstrate creative thinking, construct knowledge and develop innovative products and process using technology.</i></p> <p>C. Communication and Collaboration: <i>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.</i></p> <p>D. Digital Citizenship: <i>Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.</i></p>	
Content Statement(s): Understand and use technology systems	CPI # / CPI(s): 8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.

Select and use applications effectively and productively.	8.1.5.A.2 Format a document using a word processing application to enhance text and include graphics, symbols and/ or pictures. 8.1.5.A.3 Use a graphic organizer to organize information about problem or issue. 8.1.5.A.4 Graph data using a spreadsheet, analyze and produce a report that explains the analysis of the data.
Apply existing knowledge to generate new ideas, products, or processes. Create original works as a means of personal or group expression.	8.1.5.B.1 Collaborative to produce a digital story about a significant local event or issue based on first-person interviews.
Communicate information and ideas to multiple audiences using a variety of media and formats.	8.1.5.C.1 Engage in online discussions with learners of other cultures to investigate a worldwide issue from multiple perspectives and sources, evaluate findings and present possible solutions, using digital tools and online resources for all steps.
Advocate and practice safe, legal, and responsible use of information and technology.	8.1.5.D.1 Understand the need for and use of copyrights. 8.1.5.D.2 Analyze the resource citations in online materials for proper use.
Demonstrate personal responsibility for lifelong learning.	8.1.5.D.3 Demonstrate an understanding of the need to practice cyber safety, cyber security, and cyber ethics when using technologies and social media.
Exhibit leadership for digital citizenship	8.1.5.D.4 Understand digital citizenship and demonstrate an understanding of the personal consequences of inappropriate use of technology and social media.

21st Century Themes

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21st Century Skills

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Pine Hill Public Schools Curriculum	
Unit Title STEM & Year End Review	Unit #: 5
Course or Grade Level: Fifth Grade	Length of Time: Qtr. 4
Pacing	10 weeks/sessions

Essential Questions	How do materials influence design? How are new products created? How does technology change the way people live and work? How does nature impact design?
Content	<ul style="list-style-type: none"> • Engineering
Skills	<ul style="list-style-type: none"> • Design process • Blueprints • Problem Solving • Testing/Evaluating products
Assessments	<ul style="list-style-type: none"> • Student Work: projects, graphic organizers, blueprints • Teacher Observation
Interventions / differentiated instruction	<ul style="list-style-type: none"> • Peer/Partner work • Leveled graphic organizers
Inter-disciplinary Connections	<ul style="list-style-type: none"> • Science: engineering, technology, nature, resources • ELA: expository writing, persuasive writing
Lesson resources / Activities	<ul style="list-style-type: none"> • Build a bridge • Build a tower • Redesign/Invent a tool or mode of transportation

2014 NJCCCS

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All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.

Strand(s):

C. Design: *The design process is a systematic approach to solving problems.*

D. Abilities for a Technological World: *The designed world is the product of a design process that provides the means to convert resources into products and systems.*

Content Statement(s): The attributes of design.	CPI # / CPI(s): 8.2.5.C.1 Collaborate with peers to illustrate components of a designed system. 8.2.5.C.2 Explain how specifications and limitations can be used to direct a product's development.
The application of engineering design.	8.2.5.C.4 Collaborate and brainstorm with peers to solve a problem evaluating all solutions to provide the best results with supporting sketches or models. 8.2.5.C.5 Explain the functions of a system and subsystems.

The role of troubleshooting, research and development, invention and innovation and experimentation in problem solving.		8.2.5.C.6 Examine a malfunctioning tool and identify the process to troubleshoot and present options to repair the tool. 8.2.5.C.7 Work with peers to redesign an existing product for a different purpose.	
Apply the design process.		8.2.5.D.1 Identify and collect information about a problem that can be solved by technology, generate ideas to solve the problem, and identify constraints and trade-offs to be considered. 8.2.5.D.2 Evaluate and test alternative solutions to a problem using the constraints and trade-offs identified in the design process to evaluate potential solutions.	
Use and maintain technological products and systems.		8.2.5.D.3 Follow step by step directions to assemble a product or solve a problem.	
<u>21st Century Themes</u>			
	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy
			Civic Literacy
			Health Literacy
<u>21st Century Skills</u>			
x	Creativity and Innovation	x	Critical Thinking and Problem Solving
			Communication and Collaboration
			Information Literacy
	Media Literacy		ICT Literacy
		x	Life and Career Skills