



**MIDLAND PARK PUBLIC SCHOOLS**  
*Midland Park, New Jersey*  
**CURRICULUM**

# **Computers**

## **Grade 5**

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## **Grade 5 Overview**

### **Course Description**

This course is an extension of grade 4 Computers. Students deepen and extend in their understanding of the internet, developing research strategies, and various ways to present gathered information. Coding is another focus in this course, which extends student's experience with coding from grade four. Typing practice will be embedded into instruction and time will be provided for for students to practice throughout the year.

### **Suggested Course Sequence:**

Unit 1: Internet Safety *(10 wks)*

Unit 2: Word Processor & Spreadsheet Skills *(10 wks)*

Unit 3: MultiMedia *(10 wks)*

Unit 4: Coding *(10 wks)*

Unit Overview	
<b>Content Area:</b> Computers	
<b>Unit Title:</b> Internet Safety	
<b>Grade Level:</b> Five	
<p><b>Unit Summary:</b> This unit covers appropriate etiquette and manners for online interactions.</p> <p><b>Interdisciplinary Connections:</b> Social Studies</p> <p><b>21<sup>st</sup> Century Themes and Skills:</b></p> <ul style="list-style-type: none"> <li>● CRP1. Act as a responsible and contributing citizen and employee.</li> <li>● CRP2. Apply appropriate academic and technical skills.</li> <li>● CRP4. Communicate clearly and effectively and with reason.</li> <li>● CRP6. Demonstrate creativity and innovation.</li> <li>● CRP7. Employ valid and reliable research strategies.</li> <li>● CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</li> <li>● CRP9. Model integrity, ethical leadership and effective management.</li> <li>● CRP10. Plan education and career paths aligned to personal goals.</li> <li>● CRP11. Use technology to enhance productivity.</li> <li>● CRP12. Work productively in teams while using cultural global competence.</li> </ul>	
Learning Targets	
<p><b>Standards (Content and Technology):</b>  <b>D. Digital Citizenship:</b> Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.</p>	
CPI#:	Statement:
8.1.8.D.1	Model appropriate online behaviors related to cyber safety, cyber bullying, cyber security, and cyber ethics.
8.1.4.D.2	Summarize the application of fair use and Creative Commons guidelines.
<p><b>Unit Essential Question(s):</b>                      How do we stay safe on the internet and appropriately interact with other online users?</p>	<p><b>Unit Enduring Understandings:</b></p> <ul style="list-style-type: none"> <li>● Technology creates societal concerns regarding the practice of safe, legal, and ethical behaviors.</li> </ul>
<b>Unit Learning Targets/Objectives:</b>	

*Students will...*

- recognize the importance of showing respect on the internet
- recognize how written messages can be misinterpreted
- practice appropriate interactions
- learn formatting options for citing their work
- cite their work

**Evidence of Learning**

**Formative Assessments:**

Quiz

Classroom Discussions

**Summative/Benchmark Assessment(s):**

Performance Assessment

**Resources/Materials** (copy hyperlinks for digital resources):

**Modifications:**

*Special Education Students*

- Rephrase questions, directions, and explanations
- Allow extended time to answer questions, and permit drawing, as an explanation
- Provide extended time to complete tasks

*English Language Learners*

- Allow partner or group work
- Rephrase questions, directions, and explanations
- Allow extended time to answer questions
- Provide extended time to complete tasks

*At-Risk Students*

- Consult with classroom teacher(s) for specific behavior interventions
- Provide extended time to complete tasks

*Gifted and Talented Students*

- Offer opportunities for extension

**Lesson Plans**

Lesson Name/Topic	Lesson Objective(s)	Time frame (day(s) to complete)
Who uses the internet? Why?	Students will discuss reasons for using the internet and learn about other users.	Week 1

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Cyber-Bullying	Students will identify cyber-bullying situations and learn how to take an active role in stopping or preventing bullies.	Week 2
Etiquette for interactions	Students will learn and practice appropriate interactions using a blog or messaging system.	Week 3-5
Passwords	Students will learn how to stay safe and create secure passwords.	Week 6
Copyright Laws & Plagiarism	Students will learn about copyright laws and how to properly cite their work.	Week 7-10
<b>Teacher Notes:</b>		
<p><b>Additional Resources</b>                  Click links below to access additional resources used to design this unit:</p> <ul style="list-style-type: none"> <li>•</li> </ul>		

## Unit Overview

**Content Area:** Computers

**Unit Title:** Research Skills

**Grade Level:** Five

**Unit Summary:** This unit prepares students for interacting and learning through Google Classroom and is a foundation for Chromebook use which will occur at the secondary school level.

### Interdisciplinary Connections:

- **Social Studies:** Native Americans (map regions), Explorers- map travel routes, multimedia presentations on individual explorers)
- **Math:** Coordinate grids, collect and interpret a data set using graphs or charts
- **Writing:** Write or revise opinion essay

### 21<sup>st</sup> Century Themes and Skills:

- CRP1. Act as a responsible and contributing citizen and employee.
- CRP2. Apply appropriate academic and technical skills.
- CRP4. Communicate clearly and effectively and with reason.
- CRP6. Demonstrate creativity and innovation.
- CRP7. Employ valid and reliable research strategies.
- CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
- CRP9. Model integrity, ethical leadership and effective management.
- CRP10. Plan education and career paths aligned to personal goals.
- CRP11. Use technology to enhance productivity.
- CRP12. Work productively in teams while using cultural global competence.

## Learning Targets

### Standards (Content and Technology):

**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.

**F: Critical thinking, problem solving, and decision making:** Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.

CPI#:	Statement:
8.1.5.E.1	Use digital tools to research and evaluate the accuracy of, relevance to, and appropriateness of using print and non-print electronic information sources to complete a variety of tasks.
8.1.5.F.1	Apply digital tools to collect, organize, and analyze data that support a scientific finding.

8.1.5.D.2

Analyze the resource citations in online materials for proper use.

**Unit Essential Question(s):**

- How can we determine if a website is reliable (validity and accuracy)?
- How can we conduct a research project that utilizes the internet?

**Unit Enduring Understandings:**

- Students will be able to distinguish between reliable sources and unreliable sources on the internet

**Unit Learning Targets/Objectives:**

*Students will...*

- Plan strategies to guide inquiry.
- Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.
- Evaluate and select information sources and digital tools based on the appropriateness for specific tasks
- Identify and define authentic problems and significant questions for investigation.
- Plan and manage activities to develop a solution or complete a project.
- Collect and analyze data to identify solutions and/or make informed decisions.
- Use multiple processes and diverse perspectives to explore alternative solutions

**Evidence of Learning**

**Formative Assessments:**

Google Slideshow

Quiz

**Summative/Benchmark Assessment(s):**

Final Research Project or Paper with added feature (chart, diagram, table, image)

**Resources/Materials (copy hyperlinks for digital resources):**

**Modifications:**

*Special Education Students*

- Rephrase questions, directions, and explanations
- Allow extended time to answer questions, and permit drawing, as an explanation
- Provide extended time to complete tasks

*English Language Learners*

- Allow partner or group work
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- Provide extended time to complete tasks

*At-Risk Students*

- Consult with classroom teacher(s) for specific behavior interventions
- Provide extended time to complete tasks

*Gifted and Talented Students*

- Offer opportunities for extension

**Lesson Plans**

Lesson Name/Topic	Lesson Objective(s)	Time frame (day(s) to complete)
Introduce Research Project	<ul style="list-style-type: none"> <li>- Determine expectations for computer use in a group and online setting</li> <li>- Interacting (manners) in a collaborative googledoc</li> </ul>	Week 1
Introduction to and collaborate through Google Docs.	<ul style="list-style-type: none"> <li>- Create and name a googledoc</li> <li>- Utilize web tools (similar to Word Processor)</li> </ul>	Week 2
Collaborate through Google Docs.	<ul style="list-style-type: none"> <li>- Share a doc</li> <li>- Comment</li> <li>- Utilize web tools (similar to Microsoft Word):</li> <li>- Use Revision History</li> </ul>	Week 3
Initiate Research	Select/ Develop Research Question; Plan research project; outline	Week 4
Conduct Research	Utilize teacher- provided websites Collect data in googledoc	Week 5
Conduct Research	Use various search engines and determine reliable domains (.edu, .gov, .com) as you research	Week 6
Conduct Research	Learn how to cite and apply rules	Week 7
Utilize tools	Organize research into a table, chart, graph, essay	Week 8
Google Slide	Add information to Google Slides	Week 9
Final Project	Students will present projects.	Week 10
<b>Teacher Notes:</b>		
<b>Additional Resources</b> Click links below to access additional resources used to design this unit:		
<ul style="list-style-type: none"> <li>• <a href="http://webquest.org/">http://webquest.org/</a></li> </ul>		



Unit Overview	
Content Area: Computers	
Unit Title: Multimedia Skills	
Grade Level: Five	
Unit Summary: In this unit, students will take a picture to tell a story. Tools and features will be used to edit and enhance photos.	
Interdisciplinary Connections: Writing, Social Studies, Science, Art	
<b>21<sup>st</sup> Century Themes and Skills:</b> <ul style="list-style-type: none"> <li>● CRP1. Act as a responsible and contributing citizen and employee.</li> <li>● CRP2. Apply appropriate academic and technical skills.</li> <li>● CRP4. Communicate clearly and effectively and with reason.</li> <li>● CRP6. Demonstrate creativity and innovation.</li> <li>● CRP7. Employ valid and reliable research strategies.</li> <li>● CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</li> <li>● CRP9. Model integrity, ethical leadership and effective management.</li> <li>● CRP10. Plan education and career paths aligned to personal goals.</li> <li>● CRP11. Use technology to enhance productivity.</li> <li>● CRP12. Work productively in teams while using cultural global competence.</li> </ul>	
Learning Targets	
Standards (Content and Technology):	
<b>CPI#:</b>	<b>Statement:</b>
8.1.5.A.3	Use a graphic organizer to organize information about problem or issue.
<b>Unit Essential Question(s):</b> How to choose which multimedia tools to use and when is it appropriate to use them?	<b>Unit Enduring Understandings:</b> A multimedia presentation is a visual and auditory way of communicating information, including text, images/ graphics, sound, and/ or video to a group of people at one time.
<b>Unit Learning Targets/Objectives:</b> Students will... <ul style="list-style-type: none"> <li>● create a powerpoint presentation including text, graphics/ images, transitions</li> </ul>	
Evidence of Learning	

**Formative Assessments:**

Quiz

Teacher Observation

**Summative/Benchmark Assessment(s):**

Culminating Project

**Resources/Materials** (copy hyperlinks for digital resources):

**Modifications:**

*Special Education Students*

- Rephrase questions, directions, and explanations
- Allow extended time to answer questions, and permit drawing, as an explanation
- Provide extended time to complete tasks

*English Language Learners*

- Allow partner or group work
- Rephrase questions, directions, and explanations
- Allow extended time to answer questions
- Provide extended time to complete tasks

*At-Risk Students*

- Consult with classroom teacher(s) for specific behavior interventions
- Provide extended time to complete tasks

*Gifted and Talented Students*

- Offer opportunities for extension

**Lesson Plans**

Lesson Name/Topic	Lesson Objective(s)	Time frame (day(s) to complete)
Introduction	Students will learn about the new project and begin to brainstorm ideas for their own project.	Week 1
Picture Taking	Students will take a picture of an object.	Week 2-3
Picture Editing	Students will use tools to edit and enhance pictures.	Week 4-6
Writing	Students will work on writing their stories based off the picture.	Week 7-8
Present	Students will share their creations with classmates.	Week 9-10

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**Teacher Notes:**

**Additional Resources**

Click links below to access additional resources used to design this unit:

- <https://evernote.com/?var=1>

**Content Area:** Technology

**Unit Title:** Let's Code!

**Grade Level:** Five

**Unit Summary:** This unit encompasses a variety of resources in which students will self-select tasks related to coding. Throughout the marking period students will engage in computer, ipad, or non-computer based opportunities to experience coding.

**Interdisciplinary Connections:**

Math; Science; Geography: World Map Activities

**21<sup>st</sup> Century Themes and Skills:**

- CRP1. Act as a responsible and contributing citizen and employee.
- CRP2. Apply appropriate academic and technical skills.
- CRP4. Communicate clearly and effectively and with reason.
- CRP6. Demonstrate creativity and innovation.
- CRP7. Employ valid and reliable research strategies.
- CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
- CRP9. Model integrity, ethical leadership and effective management.
- CRP10. Plan education and career paths aligned to personal goals.
- CRP11. Use technology to enhance productivity.
- CRP12. Work productively in teams while using cultural global competence.

**Standards (Content and Technology):**

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

<b>CPI#:</b>	<b>Statement:</b>
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).	
<b>Unit Essential Question(s):</b> <ul style="list-style-type: none"> <li>What is coding? Why is it useful? How do is effect our society?</li> </ul>	<b>Unit Enduring Understandings:</b> Coding is essential to future or prospective careers and is gaining awareness in our country.	
<b>Unit Learning Targets/Objectives:</b> <i>Students will...</i> <ul style="list-style-type: none"> <li>engage in computational thinking and use computer programming as tools used in design and engineering</li> <li>develop algorithms</li> </ul>		
<b>Formative Assessments:</b> Graph Paper Assessment Worksheets  <b>Summative/Benchmark Assessment(s):</b> Work Product- Game Test  <b>Resources/Materials (copy hyperlinks for digital resources):</b> <ul style="list-style-type: none"> <li>"Why Our Kids Must Learn to Code" <a href="https://www.youtube.com/watch?v=STRPsW6IY8k">https://www.youtube.com/watch?v=STRPsW6IY8k</a></li> <li>Unplugged: Building a Foundation <a href="https://code.org/curriculum/course1/9/Teacher.pdf">https://code.org/curriculum/course1/9/Teacher.pdf</a></li> <li>Unplugged: Graph Paper Programming <a href="https://code.org/curriculum/course2/1/Teacher">https://code.org/curriculum/course2/1/Teacher</a></li> <li>Unplugged: Beat the Clock: Sorting Networks: <a href="https://www.youtube.com/watch?v=30WcPnvfIKE">https://www.youtube.com/watch?v=30WcPnvfIKE</a></li> </ul>		
<b>Modifications:</b> <i>Special Education Students</i> <ul style="list-style-type: none"> <li>Rephrase questions, directions, and explanations</li> <li>Allow extended time to answer questions, and permit drawing, as an explanation</li> <li>Provide extended time to complete tasks</li> </ul> <i>English Language Learners</i> <ul style="list-style-type: none"> <li>Allow partner or group work</li> <li>Rephrase questions, directions, and explanations</li> </ul>	<i>At-Risk Students</i> <ul style="list-style-type: none"> <li>Consult with classroom teacher(s) for specific behavior interventions</li> <li>Provide</li> </ul>	

<ul style="list-style-type: none"> <li>- Allow extended time to answer questions</li> <li>- Provide extended time to complete tasks</li> </ul>	<p>extended time to complete tasks</p> <p><i>Gifted and Talented Students</i></p> <ul style="list-style-type: none"> <li>- Offer opportunities for extension</li> </ul>
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Lesson Name/Topic	Lesson Objective(s)	Time frame (day(s) to complete)
Kick Off Event! Coding 101	Students will learn what coding is and it's role in different careers	Week 1
Unplugged: Building a Foundation	Students will complete a structural engineering problem.	Week 2
Unplugged: Binary Numbers (extension)	Students will use the binary code system.	Week 3
Unplugged: Graph Paper Programming	<p>Students will..</p> <ul style="list-style-type: none"> <li>● Understand the difficulty of translating real problems into programs</li> <li>● Learn that ideas may feel clear and yet still be misinterpreted by a computer</li> <li>● Practice communicating ideas through codes and symbols</li> </ul> <p>Vocabulary: algorithm, program</p>	Week 4
Unplugged: Beat the Clock! (Sorting Networks)	Students will understand how computers sort through an interactive activity.	Week 5
Let's Code!	Students will program a game by using course 2 on code.org that addresses a variety of skills.	Week 6-8
Unplugged: Card Flip Magic	<p>Students will understand how errors occur and are corrected.</p> <p><a href="https://www.youtube.com/watch?v=-35-sPTYJg">https://www.youtube.com/watch?v=-35-sPTYJg</a></p>	Week 9
Let's Code!	Students will program a game by using course 2 on code.org	Week 10

	that addresses a variety of skills.	
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**Teacher Notes:**

Consider allowing students to work on coding at home. There are 20 lessons. This unit could be adapted to be taught or embedded throughout the year, rather than as a separate unit.

**Additional Resources**

Click links below to access additional resources used to design this unit:

- Code.org Provides both teacher support/ resources along with student tracking dashboard and student activities for use in the classroom
- <http://www.edutopia.org/blog/15-ways-teaching-students-coding-vicki-davis> This website offers a variety of coding activities. [ Kodable, Cargobot, Codecombat,
- <http://codecombat.com/>