

Maywood Public Schools

**Technology
Education**

Grade 4

Computer Tech 4

I. Introduction/Overview/Philosophy

The fourth grade computer curriculum explores technology skills beyond basic levels of software applications and supports learning in both technology and regular curriculum topics. Areas of focus include proper keyboarding skills, online safety and digital citizenship, Internet research skills, word processing, spreadsheets, drawing, and presentation software.

II. Objectives

Course Outline

****Note:** this outline will not be completed in any particular order. Rather, the topics will be covered through projects that integrate a variety of topics.**

I. Computer Operations

A. Basic computer operations

1. Access servers/online drives using a name and password
2. Save work to a server/online drive
3. Create folders to organize saved documents
4. Retrieve saved work from a server/drive

B. Master touch typing

1. Use proper keyboarding techniques
2. Key all letters using proper techniques
3. Key upper case letters using proper techniques
4. Key punctuation marks using proper technique and proper spacing

II. Computer Applications

A. Word Processing

1. Review Basics

- i. Create a new document
- ii. Change the font and its color, size, and style
- iii. Change margins and page orientation
- iv. Set alignments using proper formatting technique
- v. Use spell check and thesaurus
- vi. Improve proofreading skills
- vii. Edit text while proofreading
- viii. Insert and manipulate images appropriately
- ix. Choose a printer and print document

2. Format Documents

- i. Select and deselect text
- ii. Find and replace text in a document
- iii. Paragraph formats
- iv. Indents

B. Drawing

1. Create a drawing using tools
2. Format your drawing
3. Select and manipulate objects
4. Move, resize, and rotate objects

5. Arrange objects
6. Use objects in documents
- C. Spreadsheets
 1. Purpose of a spreadsheet
 2. Create a new spreadsheet
 3. Enter data
 - i. Edit cell contents
 - ii. Preview and print a spreadsheet
 - iii. Format widths, alignments, fonts
 - iv. Use simple formulas to perform calculations
 - v. Copy formulas
 - vi. Create simple graphs/charts
- D. Presentation
 1. Create a new presentation
 2. Enter and edit text
 3. Add graphics to a slide
 4. Add transitions
 5. Present a presentation to a group
- III. Digital Citizenship
 - A. Internet Safety
 1. Protecting private identity information online
 2. Understanding general online safety guidelines
- IV. Computer Coding
 - B. Computer Programming/Coding
 1. Identify ways computers are used that have an impact across the range of human activity and within different careers where they are used.
 2. Write a simple computer program to perform a specific task
 3. Debug a computer program to identify and solve errors

Student Outcomes:

After successfully completing this course, the student will:

- key entire alphabet and punctuation marks using proper keyboarding technique.
- key paragraphs with capital letters, indentation and correct punctuation, using the proper fingers and eyes on the copy.
- use move commands or techniques to edit word processing documents.
- use a word processing program to publish documents that contain centering, tables, and font formats.
- open a word processing program, minimize the program, open Internet access, search for information on the Internet, and be able to go back and forth from Internet access to the document without closing either program.
- use draw select tools.
- select more than one object and use grouping.
- copy and move draw objects.
- use draw objects in word processing documents.
- use and create graphs.
- identify and define correct spreadsheet terms (i.e., spreadsheet, column, row, cell, formula).
- create a spreadsheet with simple formulas (SUM, MAX, MIN).
- change data in spreadsheet cells.

- format columns and rows.
- use a spreadsheet to create graphs.
- use a presentation software package to orally present information about a topic.
- increase their knowledge of Internet safety.
- use basic coding principles to write and execute simple computer programs.
- build critical-thinking and decision-making skills relating to computer usage.

New Jersey Student Learning Standards

CAREER READY PRACTICES

CRP1 Act as a responsible and contributing citizen and employee

Career-ready individuals understand the obligations and responsibilities of being a member of a community, and they demonstrate this understanding every day through their interactions with others. They are conscientious of the impacts of their decisions on others and the environment around them. They think about the near-term and long-term consequences of their actions and seek to act in ways that contribute to the betterment of their teams, families, community and workplace. They are reliable and consistent in going beyond the minimum expectation and in participating in activities that serve the greater good.

CRP2 Apply appropriate academic and technical skills

Career-ready individuals readily access and use the knowledge and skills acquired through experience and education to be more productive. They make connections between abstract concepts with real-world applications, and they make correct insights about when it is appropriate to apply the use of an academic skill in a workplace situation.

CRP4 Communicate clearly and effectively and with reason.

Career-ready individuals communicate thoughts, ideas, and action plans with clarity, whether using written, verbal, and/or visual methods. They communicate in the workplace with clarity and purpose to make maximum use of their own and others' time. They are excellent writers; they master conventions, word choice, and organization, and use effective tone and presentation skills to articulate ideas. They are skilled at interacting with others; they are active listeners and speak clearly and with purpose. Career-ready individuals think about the audience for their communication and prepare accordingly to ensure the desired outcome.

CRP6 Demonstrate creativity and innovation

Career-ready individuals regularly think of ideas that solve problems in new and different ways, and they contribute those ideas in a useful and productive manner to improve their organization. They can consider unconventional ideas and suggestions as solutions to issues, tasks or problems, and they discern which ideas and suggestions will add greatest value. They seek new methods, practices, and ideas from a variety of sources and seek to apply those ideas to their own workplace. They take action on their ideas and understand how to bring innovation to an organization.

CRP11 Use technology to enhance productivity

Career-ready individuals find and maximize the productive value of existing and new technology to accomplish workplace tasks and solve workplace problems. They are flexible and adaptive in acquiring new technology. They are proficient with ubiquitous technology applications. They understand the inherent risks-personal and organizational-of technology applications, and they take actions to prevent or mitigate these risks.

CRP12 Work productively in teams while using cultural global competence

Career-ready individuals positively contribute to every team, whether formal or informal. They apply an awareness of cultural difference to avoid barriers to productive and positive interaction. They find ways to increase the engagement and contribution of all team members. They plan and facilitate effective team meetings.

TECHNOLOGY STANDARDS**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.**

8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.

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.

8.1.5.B.1 Collaborative to produce a digital story about a significant local event or issue based on first-person interviews.

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.

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

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.

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.

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).

III. Proficiency Levels

This is a cycle course for Grade 4.

IV. Methods of Assessment

The teacher will provide a variety of assessments. Among them are group projects, computer projects, oral presentations and class participation.

The teacher will provide the subject area supervisor with suggestions for changes.

V. Grouping

This is a required Grade 4 cycle course.

VI. Articulation/Scope & Sequence/Time Frame

Course length is one quarter.

VII. Resources

Resources include but are not limited to:

- *Using Google Docs in the Classroom Grade 4-5* by Steve Butz by Teacher Created Resources
- Common Sense Media: <https://www.commonsensemedia.org/educators/scope-and-sequenceat>
<https://www.commonsensemedia.org/>
- BrainPop at <http://www.brainpop.com/>
- Netsmartz Workshop: Tweens at <http://www.nsteens.org/>

VIII. Suggested Activities

Integrate Internet research into formulating and designing projects, word processing, spreadsheets, presentations, and draw techniques.

IX. Methodologies

The following methods of instruction are suggested: lecture, group projects, demonstration, and class presentations.

X. Interdisciplinary Connections

W.4.10. 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, and audiences.

This course incorporates computer-based projects with content area curriculum topics. In addition, students will develop writing and oral presentation skills as well as proficiency in computer applications.

XI. Differentiating Instruction for Students with Special Needs: Students with Disabilities, Students at Risk, English Language Learners, and Gifted & Talented Students

Differentiating instruction is a flexible process that includes the planning and design of instruction, how that instruction is delivered, and how student progress is measured. Teachers recognize that students can learn in multiple ways as they celebrate students' prior knowledge. By providing appropriately challenging learning, teachers can maximize success for all students.

Differentiating in this course includes but is not limited to:

Differentiation for Support (ELL, Special Education, Students at Risk)

- Rephrase directions, questions, explanations
- One on one modeling and demonstration of techniques and skills
- Modify assignments as needed
- Preferential seating
- Assign a buddy as needed, same language or English speaking
- Allow errors in speaking and writing
- Accept participation at any level, even if very limited
- Allow spelling errors
- Provide hard copies of direction sheets and project rubrics
- Allow extended time to answer questions, complete assignments and projects
- Follow IEP accommodations/modifications
- Provide positive feedback and rewards as necessary
- Consult with classroom teacher for behavior interventions
- Consult with guidance counselor and/or student assistance counselor for procedures and/or action plans

Differentiation for Enrichment

- Provide extension activities
- Allow students to act as peer “assistors” for their classmates
- Allow for student choice in project completion
- Build on students’ intrinsic interests and motivators
- Allow independent study
- Scale project objectives to more challenging outcomes

XII. Professional Development

The teacher will continue to improve expertise through participation in a variety of professional development opportunities.

XIII. Curriculum Map/Pacing Guide

Unit Topic	Time Allocated	Differentiating Instruction for Students with Disabilities, Students at Risk of School Failure, English Language Learners, & Gifted & Talented Students	Standards	Assessments
<p>Computer Operations/Touch Typing</p> <ul style="list-style-type: none"> • Understand basic computer operations. • Log into the computer, server, and online drive. • Save to and retrieve documents from server and drive. • Touch typing technique review <p><i>Touch typing technique is reviewed/emphasized throughout the course.</i></p>	1 Week	<p><i>For Support:</i></p> <ul style="list-style-type: none"> • Rephrase directions, questions, explanations • One on one modeling and demonstration of techniques and skills • Modify assignments as needed <p><i>For Enhancement:</i></p> <ul style="list-style-type: none"> • Provide extension activities • Allow students to act as peer “assistors” for their classmates 	<p><i>Standards:</i> CRP11, 8.1.5.A.1</p>	<p><i>Formative Assessment:</i> Observation of proper procedures. Demonstration to peers. Practice typing activities.</p> <p><i>Summative Assessment:</i> Proper use of saving/submitting final products demonstrated through each unit project. Typing tests for speed and accuracy.</p>

Unit Topic	Time Allocated	Differentiating Instruction for Students with Disabilities, Students at Risk of School Failure, English Language Learners, & Gifted & Talented Students	Standards	Assessments
<p>Computer Applications - Word Processing</p> <ul style="list-style-type: none"> • Review of basics <ul style="list-style-type: none"> ○ Creating, manipulating, printing documents ○ Proofreading • Formatting <ul style="list-style-type: none"> ○ Paragraph formats ○ Find/replace ○ Indents 	<p>2 Weeks</p>	<p><i>For Support:</i></p> <ul style="list-style-type: none"> • Rephrase directions, questions, explanations • Provide hard copies of direction sheets and project rubrics • Allow extended time to complete project <p><i>For Enhancement:</i></p> <ul style="list-style-type: none"> • Build on students’ intrinsic interests and motivators • Scale project objectives to more challenging outcomes 	<p>CRP2, CRP4, CRP6, CRP11, 8.1.5.A.1, 8.1.5.A.2</p>	<p><i>Formative Assessment:</i> Observation and questioning. Quick formatting practices. Exit tickets.</p> <p><i>Summative Assessment:</i> Final unit project: School Club Flyer: Design and create an eye-catching flyer to advertise an event for a school club. Assessed using rubric.</p>
<p>Computer Applications – Drawing</p> <ul style="list-style-type: none"> • Create and format drawing using tools • Understand object properties • Move, arrange and rotate objects 	<p>1 Week</p>	<p><i>For Support:</i></p> <ul style="list-style-type: none"> • Modeling and demonstration of techniques one-on-one • Allow participation at any level • Provide positive feedback of creativity <p><i>For Enhancement:</i></p> <ul style="list-style-type: none"> • Allow for student choice • Scale project to more challenging outcome 	<p>CRP6, CRP11, 8.1.5.A.1, 8.1.5.A.3</p>	<p><i>Formative Assessment:</i> Observation and questioning. Quick draw.</p> <p><i>Summative Assessment:</i> Final unit project: Home Sweet Home: Design and draw a creative scene including a house using drawing tools. Assessed using rubric.</p>

Unit Topic	Time Allocated	Differentiating Instruction for Students with Disabilities, Students at Risk of School Failure, English Language Learners, & Gifted & Talented Students	Standards	Assessments
Computer Applications – Spreadsheets <ul style="list-style-type: none"> • Create and edit spreadsheet • Apply formatting to cells and data • Use simple formulas • Create graph/chart 	2 Weeks	<i>For Support:</i> <ul style="list-style-type: none"> • Modify assignments to simplify difficult tasks and terminology • Assign a buddy to provide support and assistance • Accept participation at limited levels <i>For Enhancement:</i> <ul style="list-style-type: none"> • Provide extension activities • Allow student to act as peer assistors • Scale project to more challenging outcomes 	CRP11, 8.1.5.A.1, 8.1.5.A.4	<i>Formative Assessment:</i> Observation and questioning. Exit tickets. Google Forms survey. <i>Summative Assessment:</i> Final Unit Project: My Great Grocery Store: Design and create a spreadsheet to display data of items that could be purchased at the grocery store. Include formulas and a graph. Assessed using rubric.
Computer Applications – Presentations <ul style="list-style-type: none"> • Create a new presentation • Enter and edit text and graphics on slides • Use transitions • Present to group 	2 Weeks	<i>For Support:</i> <ul style="list-style-type: none"> • Allow errors in writing and speaking • Assign buddy and supportive group • Allow participation at any level <i>For Enhancement:</i> <ul style="list-style-type: none"> • Build on students’ intrinsic interests • Allow independent study if requested • Provide opportunities for extension of project 	CRP2, CRP4, CRP6, CRP11, CRP12, 8.1.5.A.1, 8.1.5.B.1	<i>Formative Assessment:</i> Observation and questioning. Students demonstrate, “One thing I discovered today.” <i>Summative Assessment:</i> Final Unit Project: Our Amazing Animals: Design and create a presentation about an endangered animal. Conduct research online to include in presentation. Present to class. Assessed using rubric.

Unit Topic	Time Allocated	Differentiating Instruction for Students with Disabilities, Students at Risk of School Failure, English Language Learners, & Gifted & Talented Students	Standards	Assessments
Digital Citizenship <ul style="list-style-type: none"> • Demonstrate ways to protect private information and stay safe online 	1 Week	<i>For Support:</i> <ul style="list-style-type: none"> • Rephrase explanations • Preferential seating • Allow extended time • Provide peer assistor <i>For Enhancement:</i> <ul style="list-style-type: none"> • Allow independent study • Provide extension activities • Allow students to act as peer assistors 	CRP1, 8.1.5.D.4	<i>Formative Assessment:</i> Observation and questioning. Exit tickets. <i>Summative Assessment:</i> Final Unit Project: Common Sense Media – Digital Passport Successful completion of lessons and activities.
Computer Programming / Coding <ul style="list-style-type: none"> • Identify importance of computer programming in society • Write and debug simple computer program 	1 Week	<i>For Support:</i> <ul style="list-style-type: none"> • One-on-one modeling and demonstration • Preferential seating • Allow participation at any level • Provide peer assistor <i>For Enhancement:</i> <ul style="list-style-type: none"> • Allow students to act as peer assistors • Provide extension activities • Allow independent study to expand on topic 	CRP6, 8.1.5.A.1, 8.2.5.E.1, 8.2.5.E.2, 8.2.5.E.3, 8.2.5.E.4	<i>Formative Assessment:</i> Observation and questioning. Demonstration to classmates. <i>Summative Assessment:</i> Final Unit Project: Code.org Course E Successful completion of assigned levels and lessons.