

COURSE TITLE

Computer Tech 5

LENGTH

One Quarter
Grade 5

DEPARTMENT

Computer Department
Barbara O'Donnell, Supervisor

SCHOOL

Pierrepoint Elementary School

DATE

Fall 2016

Computer Tech 5

I. Introduction/Overview/Philosophy

Building on the skills learned in Grade 4, students will be exposed to more advanced application software functions of spreadsheets, drawing, word processing, and presentation. Database application will also be introduced. The projects in this class will reinforce the core applications taught in other academic disciplines such as math, science, or language arts. Projects will encourage students to seek out and use technology appropriately to investigate, solve problems, and communicate their findings effectively. A well-balanced approach to technology instruction develops a higher level of competency within students including critical thinking skills, integrity, ethical/moral accountability, and personal responsibility. Keyboarding will be reviewed and emphasized. Students will continue to become familiar with computer coding.

II. Objectives

Student Outcomes:

By the end of Grade 5 the students will show their understanding of the various programs and other software tools and extend their skills using analytical and informational tools by being able to:

- 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 a word processing program to create and edit documents.
- format text into multiple columns in a document and use tables.
- properly format documents.
- explain how database sorting and searching techniques can be used.
- read and interpret a given database.
- edit fields in a database.
- enter and edit data into a spreadsheet and use formulas and functions.
- create various graphs.
- change graph types.
- understand and use master slides with presentation software.
- combine the use of word processing and spreadsheets into a presentation.
- use presentation animation.
- present information orally using technology as a presentation tool.
- apply Internet safety rules focusing on cyberbullying to identify and prevent it.
- evaluate websites for accuracy and bias.
- code and debug a simple program to complete a specific task.
- build critical-thinking and decision-making skills relating to computer usage.

III. 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. Review of Computer Applications/Operations
 - A. Word processing
 - 1. Format documents
 - 2. Create lists
 - 3. Add graphics to a document
 - B. Drawing
 - 1. Use the drawing tools and rulers
 - 2. Select and position drawings
 - 3. Change the shape
 - 4. Change the size and position
 - 5. Arrange and rotate objects
 - 6. Use objects and images with documents
 - C. Spreadsheets
 - 1. Enter data
 - 2. Edit cell contents
 - 3. Preview and print a spreadsheet
 - 4. Change a column width
 - 5. Format alignments and fonts
 - 6. Use simple formulas and functions to perform calculations
 - 7. Copy formulas
 - D. Presentations
 - 1. Create a new presentation with transitions
 - 2. Enter and edit text and graphics on a slide
 - 3. Incorporate spreadsheets
 - E. Touch typing
 - 1. Review proper keyboarding technique of letters
 - 2. Review proper keyboarding technique of special characters
- II. Word Processing
 - A. Use tables
 - B. Format cell contents in a table
 - C. Edit a table
 - D. Format and use columns and tables
 - E. Properly format documents
- III. Spreadsheets
 - A. Use sort to organize a spreadsheet
 - B. Create more advanced formulas and functions
 - C. Design graphs from spreadsheet data
- IV. Introduction of Database
 - A. Purpose of a database
 - B. Database structure
 - 1. File

- 2. Records
- 3. Field
- 4. Entry
- C. Search a database
- D. Enter records
- E. Edit records
- F. Sort records
- V. Presentations
 - A. Create speaker notes
 - B. Add animations
 - C. Present orally
- CI. Internet Safety and Website Evaluation
 - A. Understand cybersafety
 - B. Prevent cyberbullying
 - C. Evaluate websites for accuracy and bias
- CII. Keyboarding
 - A. Use proper keyboarding techniques
 - B. Key all letters using proper techniques
 - C. Key punctuation marks using proper technique and proper spacing
 - D. Key upper case letters using proper techniques
 - E. Build speed and accuracy
- CIII. Computer Programming/Coding
 - A. Identify ways computers are used that have an impact across the range of human activity and within different careers where they are used.
 - B. Write a simple computer program to perform a specific task
 - C. Debug a computer program to identify and solve errors

New Jersey Student Learning Standards

TECHNOLOGY

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 collaboratively and to create and communicate knowledge.

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.

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

IV. Proficiency Levels

This is a cycle course for Grade 5.

V. Methods of Assessment

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

VI. Grouping

This is a required Grade 5 cycle course.

VII. Articulation/Scope & Sequence/Time Frame

Course length is one quarter.

VIII. 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/>
- K-5 Technology Lesson Plans <http://oakdome.com/k5/>
- *32 Quick & Fun Content Area Computer Activities* by Lynn Van Gorp by Shell Education 2006
- *Typing Time Workbook* Thomson/South-Western Publishing Company Jack P. Hoggatt, Ed.D and Jon A. Shank, Ed.D 2003
- Code at <http://code.org/>
- <http://scratch.wiki.hoover.k12.al.us/Lesson+Ideas>
- <http://scratched.media.mit.edu/resources/new-scratch>
- <http://scratched.media.mit.edu/resources/scratch-curriculum-guide-draft>
- <http://www.edutopia.org/blog/15-ways-teaching-students-coding-vicki-davis>
- http://tewinkle.nmusd.us/cms/page_view?d=x&piid=&vpid=1382602919957
- <http://edtechintegrated.com/interactive-ed-digital-gaming-andor-simulation/scratch-games-created-by-rfbms-students/>
- <http://bjc.berkeley.edu/>
- <http://snap.berkeley.edu/>
- Teacher-created handouts for projects

IX. Methodologies

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

X. Suggested Activities

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

XI. Interdisciplinary Connections

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.

XII. Differentiating Instruction for Students with Special Needs: Students with Disabilities, 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.

Examples of Strategies and Practices that Support:

Students with Disabilities

- Use of visual and multi-sensory formats
- Use of assisted technology
- Use of prompts
- Modification of content and student products
- Testing accommodations
- Authentic assessments

English Language Learners

- Pre-teaching of vocabulary and concepts
- Visual learning, including graphic organizers
- Use of cognates to increase comprehension
- Teacher modeling
- Pairing students with beginning English language skills with students who have more advanced English language skills
- Scaffolding
 - word walls

- sentence frames
- think-pair-share
- cooperative learning groups

Gifted & Talented Students

- Adjusting the pace of lessons
- Curriculum compacting
- Inquiry-based instruction
- Independent study
- Higher-order thinking skills
- Interest-based content
- Student-driven
- Real-world problems and scenarios

XII. Professional Development

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

Week 1	Week 2	Week 3	Week 4	Week 5
<p>Review Drawing</p> <ul style="list-style-type: none"> • Draw tools and rulers • Create and edit objects • Arrange and rotate objects • Use objects within documents • Selection tools <p>Reinforce touch-typing technique. Build speed and accuracy.</p>	<p>Review Word Processing</p> <ul style="list-style-type: none"> • Edit text • Format documents • Create lists • Add graphics • Create and format columns <p>Reinforce touch typing technique. Build speed and accuracy.</p>	<p>Introduce new Word Processing Concepts</p> <ul style="list-style-type: none"> • Create, format, and edit tables • Use proper formatting techniques <p>Reinforce touch typing technique. Build speed and accuracy.</p>	<p>Review Spreadsheets</p> <ul style="list-style-type: none"> • Enter data • Edit cells • Preview and print • Format cell alignment and fonts • Use simple formulas and functions • Copy formulas <p>Reinforce touch-typing technique. Build speed and accuracy.</p>	<p>Introduce New Spreadsheet Concepts</p> <ul style="list-style-type: none"> • Sort data • Use various functions • Design graphs from spreadsheet data <p>Reinforce touch-typing technique. Build speed and accuracy.</p>
Week 6	Week 7	Week 8	Week 9	Comments
<p>Introduction of Database</p> <ul style="list-style-type: none"> • Purpose of a database • Structure of a database • Define fields • Enter records • Edit records • Sort a database • Search list mode <p>Reinforce touch typing technique. Build speed and accuracy.</p>	<p>Internet Safety and Searching</p> <ul style="list-style-type: none"> • CyberSafety • Using search engines and directories • Identifying high-quality sites <p>Combine these concepts with week 8 Presentation unit.</p> <p>Reinforce touch typing technique. Build speed and accuracy.</p>	<p>Review of Presentation and Introduction of new concepts</p> <ul style="list-style-type: none"> • Create a new presentation • Enter and edit slides • Add graphics • Add sound/audio • Add transitions • Add a chart from a spreadsheet • Present orally 	<p>Computer Programming</p> <ul style="list-style-type: none"> • Code and test a simple program • Write/code a simple program • Debug programs <p>Reinforce touch typing technique. Build speed and accuracy.</p>	<p>Various activity-based projects will be incorporated into classroom learning as skills are taught.</p> <p>Alignment to various core curriculum content areas such as language arts, math, and science will be emphasized.</p>