

COURSE TITLE

Digital Applications 1

LENGTH

One Semester
Grades 9-12

DEPARTMENT

Business Education
Barbara O'Donnell, Supervisor

SCHOOL

Rutherford High School

DATE

Primary Content: Career Readiness, Life Literacies, and Key Skills
Initial BOE Approval Date (Born on): May 10, 2021
Embedded Content: Computer Science and Design Thinking
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Digital Applications 1

I. Introduction/Overview/Philosophy

Digital Applications 1 is designed to enhance keyboarding technique, speed and accuracy, and refine computer application skills. In a world reliant on technology, students need to increase efficiency, accuracy and output. Keyboarding is the most basic and vital skill needed for data entry, data retrieval and document processing. In addition to developing increased keyboarding proficiency, word processing, spreadsheet and database applications will be studied to reinforce student understanding of these computer applications. Digital Applications 1 will equip students with essential skills and knowledge necessary to use computer hardware and software in daily life and occupational tasks. Students will apply effective oral and written communication techniques in conjunction with proper computer applications strategies.

II. Objectives

Course Outline

A. File Management

1. Naming files/folders
2. Organizing files/folders
3. Retrieving files/folders

B. Basic Keyboarding

1. Use proper keyboarding technique
 - a. Key all letters and numbers using proper technique
 - b. Key punctuation marks using proper technique and proper spacing
 - c. Key upper case letters using proper technique
2. Compose at the computer

C. Word Processing Formatting

1. Formatting sentences and paragraphs
 - a. Aligning text
 - b. Indenting
 - c. Using tabs
2. Formatting Pages and Documents
 - a. Page breaks (hard and soft)
 - b. Page numbering
 - c. Headers and footers
 - d. Section breaks
 - e. Margins
 - f. Columns
3. Graphics
 - a. Searching and using non-copyrighted images
 - b. Formatting of graphics
 - c. Adding images
 - d. Aligning images
 - e. Wrapping text
 - f. Creating images using drawing tools
 - i. Changing fill and line attributes
 - ii. Resizing
 - iii. Reshaping

- iv. Rotating
- v. Moving
- vi. Aligning
- vii. Grouping and ungrouping

4. Tables

- a. Adding and deleting rows/columns
- b. Merging cells
- c. Using color
- d. Using borders

D. Document Structuring

- 1. MLA style reports with works cited page
- 2. Correct use of breaks

E. Spreadsheets

- 1. Working with cells, rows, and columns
 - a. Entering data
 - b. Editing data
 - c. Moving data
 - d. Filling cells
- 2. Using Formulas and Functions
 - a. Entering formulas
 - b. Math operations
 - c. Entering cell references
 - d. Relative vs. Absolute References
- 3. Using functions
 - a. Sum
 - b. Average
 - c. Minimum
 - d. Maximum
 - e. Count
 - f. IF
- 4. Formatting spreadsheets
 - a. Formatting numbers
 - i. Decimal places
 - ii. Negative numbers
 - iii. Comma Separators
 - b. Formatting text
 - i. Style
 - ii. Size
 - iii. Color
 - iv. Alignment
 - c. Sorting
 - d. Inserting and resizing rows and columns
 - e. Inserting a header and/or footer
- 5. Charting
 - a. Identifying chart types
 - i. Understanding various chart types
 - ii. Choosing appropriate chart types
 - b. Creating and modifying a chart
 - i. Charting types

- ii. Changing color
- iii. Updating the chart with new numbers
- iv. Adding graphics to charts
- v. Adding titles, labels and legends

F. Database

1. Identifying parts of a database
 - a. Table
 - b. Field
 - c. Field name
 - d. Record
2. Entering data
 - a. Adding a new record
 - b. Deleting records
 - c. Editing data
3. Sorting (ascending, descending and compound sorts)
4. Finding (Query)
 - a. Using find mode
 - b. Using simple and compound search queries
5. Designing a database
 - a. Planning a database
 - b. Defining fields
 - c. Setting options for fields
 - d. Laying out the database
 - e. Adding summary fields (grand summary/sub-summary)
 - f. Creating reports

G. Integration

1. Integrating word processing, database, spreadsheets and graphics into a well-designed project that is based on research, surveys, and prior knowledge.
2. Using various sources to obtain information

H. Digital Citizenship

1. Exploring aspects of final projects, personal, domestic and global digital citizenship challenges.
2. Studying the impact of cybercrimes on society.
3. Exploring the personal and societal impact of unethical use of digital tools.

Note: While direct instruction will be given in the area of computer applications, the use of the computer to complete mainstream assignments will be emphasized.

Student Outcomes

After completing this course, the student will demonstrate the ability to:

- key the entire alphabet, numbers and punctuation marks using proper keyboarding technique at a moderate to high level of speed (at least 30 words per minute.)
- demonstrate basic computer file management skills including naming, saving, retrieving, and organizing saved files.
- demonstrate the use of word processing commands, text formatting procedures, as well as editing/proofing procedures.
- format documents properly using correct style, margins and text-wrapping techniques.

- use advanced word-processed features that demonstrate the understanding of basic desktop publishing techniques.
- use database files to effectively retrieve information.
- design, create, save, and retrieve a database file.
- generate reports from a database file.
- design, create, save, and retrieve a spreadsheet file.
- write spreadsheet formulas using basic arithmetic operations as well as algebraic operations.
- use spreadsheet functions, formulas, sorting and filtering techniques to efficiently manipulate spreadsheet data.
- create effective graphs using spreadsheet data.
- analyze data presented in graphs
- integrate word processing, database, and spreadsheet applications.
- determine appropriate software to use for specific applications.
- conduct research and incorporate the research into a final project using word processing, database, and spreadsheet, applications.
- develop an understanding of good digital citizenship.

New Jersey Student Learning Standards

CAREER READINESS, LIFE LITERACIES, AND KEY SKILLS PRACTICES

CRLKSP 1 Act as a responsible and contributing community members and employee.

Students 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.

CRLKSP 3 Consider the environmental, social and economic impacts of decisions.

Students understand the interrelated nature of their actions and regularly make decisions that positively impact and/or mitigate negative impact on other people, organization, and the environment. They are aware of and utilize new technologies, understandings, procedures, materials, and regulations affecting the nature of their work as it relates to the impact on the social condition, the environment and the profitability of the organization.

CRLKSP 4 Demonstrate creativity and innovation.

Students 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.

CRLKSP 5 Utilize critical thinking to make sense of problems and persevere in solving them.

Students readily recognize problems in the workplace, understand the nature of the problem, and devise effective plans to solve the problem. They are aware of problems when they occur and take action quickly to address the problem; they thoughtfully investigate the root cause of the problem prior to introducing solutions. They carefully consider the options to solve the problem. Once a solution is agreed upon, they follow through to ensure the problem is solved, whether through their own actions or the actions of others.

CRLKSP 8 Use technology to enhance productivity, increase collaboration and communicate effectively.

Students 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.

TECHNOLOGY STANDARDS**STANDARD 8.1: COMPUTER SCIENCE**

8.1.12.DA.5: Create data visualizations from large data sets to summarize, communicate, and support different interpretations of real-world phenomena.

STANDARD 9.4: LIFE LITERACIES AND KEY SKILLS

9.4.12.CI.1: Demonstrate the ability to reflect, analyze, and use creative skills and ideas.

9.4.12.CI.3: Investigate new challenges and opportunities for personal growth, advancement, and transition

9.4.12.CT.1: Identify problem-solving strategies used in the development of an innovative product or practice

9.4.12.IML.3: Analyze data using tools and models to make valid and reliable claims, or to determine optimal design solutions

9.4.12.TL.2: Generate data using formula-based calculations in a spreadsheet and draw conclusions about the data.

9.4.12.DC.1: Explain the beneficial and harmful effects that intellectual property laws can have on and there are legal consequences to utilizing or the creation and sharing of content

9.4.12.DC.3: Evaluate the social and economic implications of privacy in the context of safety, as privacy, data, property, information, and law, or ethics

ENGLISH LANGUAGE ARTS**Writing Domain**

W.WR.9–10.5. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

W.WR.11–12.5. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

Speaking and Listening Domain

SL.PI.9–10.4. Present information, findings, and supporting evidence clearly, concisely, and logically. The content, organization, development, and style are appropriate to task, purpose, and audience.

SL.UM.9–10.5. Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance findings, reasoning, and evidence and to add interest.

SL.PI.11–12.4 Present information, findings and supporting evidence clearly, concisely, and logically. The content, organization, development, and style are appropriate to task, purpose, and audience.

SL.UM.11–12.5. Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.

III. Proficiency Level

This course is open to grades 9-12. However, it is recommended that this course be taken freshman year.

IV. Methods of Assessment

The teacher will provide a variety of assessments including but not limited to:

- Keyboarding Technique and Skill
- Timed Writings
- Classwork
- Projects
- Benchmark

Most assessments will be project-based.

V. Grouping

There is no prerequisite for this course.

VI. Articulation/Scope & Sequence/Time Frame

This is a one semester course.

VII. Resources

Resources include but are not limited to:

Teacher-generated classwork and project assignments.

The teacher will use the Internet and other sources to find and build quality assignments to meet the curriculum guidelines, state standards, and students' needs.

Century 21: Computer Applications and Keyboarding 9th Ed
South-Western Educational Publishing. Jack Hoggatt, Ed.D, Jon Shank, Ed.D

VIII. Suggested Activities

Students engage in dictated word-association drills. Students engage in ladder drills to improve both speed and accuracy.

Students create formatted documents from both the workbooks and teacher-created handouts. Student may also bring in assignments from other classes that they may need to complete, if teacher approved.

Integrate computer technology/applications with other academic assignments and incorporate public speaking using the computer and other hardware as a visual device.

IX. Methodologies

The following methods of instruction are suggested: teacher instruction, teacher demonstration, students typing with eyes on text, students typing with eyes closed, teacher dictating, individual and group projects, etc.

When creating formatted documents, spreadsheets, and databases students will be given instruction and handouts as to the format being taught. They will also be directed to the pages in the book and/or internet resources, such as websites and videos, that show examples and give detailed instruction for proper formatting and step for properly using the software programs.

The teacher will provide a variety of assessments. Among them are: group projects, simulations, computer projects, homework, and class participation.

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

Virtual Learning Notes: During virtual learning, students will have access to Google Classroom, Zoom, and Kami. The teacher can simultaneously check work. Extend projects as needed. Modify any group work to allow students to work independently from home. Utilize shared documents to facilitate online group work.

X. Interdisciplinary Connections

This course incorporates real-world reading, writing, speaking, listening and spelling skills, as well as computer applications. Students will also be prepared to type and format a research paper, a letter, a statistical report, and a newsletter. Connections are made to mathematics by using a variety of arithmetic formulas. Connections are also made to the disciplines of business and English by means of incorporating these into hands-on projects. In addition, students will also be able to use graphics appropriately, so they can be integrated into projects across the curriculum, enhancing aesthetic appeal.

XI. Differentiating Instruction for Students with Special Needs: Students with Disabilities, Students with a 504 Plan, 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)

- Peer mentoring on problems
- Differentiated teacher feedback on assignments
- Re-teaching and review
- Guided note taking
- Multi-media approach to accommodating various learning styles
- Use of visual and multi-sensory formats
- Use of assisted technology
- Authentic assessments

Differentiation for Enrichment

- Topic selection by interest
- Elevated questioning techniques
- Adjusting the pace of lessons
- Higher-order thinking skills

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 with a 504 Plan, Students at Risk of School Failure, English Language Learners, & Gifted & Talented Students	Standards	Assessments
Basic Keyboarding - Review and reinforce proper keyboarding technique - Timed writings - MLA Research Paper	3 weeks	<i>For Support:</i> - Differentiated teacher feedback on assignments - Re-teaching and review - Use of visual and multi-sensory formats - Authentic assessment <i>For Enhancement:</i> - Topic selection by interest - Elevated questioning techniques - Adjusting the pace of lessons	<i>Standards:</i> CRLKSP 8 9.4.12.CI.1 9.4.12.CI.3 W.WR.9–10.5 W.WR.11–12.5	<i>Formative Assessment:</i> Warm up keyboarding techniques, 30 second drills to enhance speed <i>Summative Assessment:</i> Timed writing – 3 minute timed writings for speed and accuracy
File Management - Name files/ folders - Save and retrieve files/ folders - Organize files in folders	1 week	<i>For Support:</i> - Differentiated teacher feedback on assignments - Re-teaching and review - Guided note taking <i>For Enhancement:</i> - Elevated questioning techniques - Adjusting the pace of lessons - Higher-order thinking skills	<i>Standards:</i> CRLKSP 8 9.4.12.CI.1 9.4.12.CI.3	<i>Formative Assessment:</i> Teacher will assess proper keyboarding technique and assess files in folders <i>Summative Assessment:</i> Quiz on file management
Word Processing Enter and edit text in sentences and paragraphs	2 weeks	<i>For Support:</i> - Differentiated teacher feedback on assignments - Re-teaching and review - Guided note taking	<i>Standards:</i> CRLKSP 4 CRLKSP 8 8.1.12.DA5 9.4.12.CI.1	<i>Formative Assessment:</i> Proofreader marks worksheet, tables project

Format pages and documents		- Authentic Assessments <i>For Enhancement:</i> - Elevated questioning techniques - Adjusting the pace of lessons - Higher-order thinking skills		<i>Summative Assessment:</i> Standards and formatting toolbar quiz, Project requiring use of tables, proofreader marks quiz
Graphics - Inserting and editing graphics - Create graphics - Resize, reshape, rotate, and group objects - Change fill and line attributes - Arrange around text	2 weeks	<i>For Support:</i> - Differentiated teacher feedback on assignments - Re-teaching and review - Guided note taking <i>For Enhancement:</i> - Adjusting the pace of lessons - Higher-order thinking skills - Topic selection by interest	<i>Standards:</i> CRLLKSP 4 CRLLKSP 8 8.1.12.DA5 9.4.12.CI.1 SL.UM.9–10.5 SL.UM.11–12.5	<i>Formative Assessment:</i> Beach scene, modes of transportation, quiz on notes <i>Summative Assessment:</i> Home Sweet Home Project
Spreadsheets - Work with cells, rows, and columns - Enter, edit, and move data - Use formulas and functions - Analyze data - Format spreadsheets - Sort data - Filter data - Chart data - What-IF Analysis	6 weeks	<i>For Support:</i> - Peer mentoring on problems - Differentiated teacher feedback on assignments - Re-teaching and review - Guided note taking - Use of visual and multi-sensory formats - Authentic Assessments <i>For Enhancement:</i> - Adjusting the pace of lessons - Higher-order thinking skills - Topic selection by interest	<i>Standards:</i> CRLLKSP 1 CRLLKSP 3 CRLLKSP 4 CRLLKSP 5 CRLLKSP 8 8.1.12.DA5 9.4.12.CI.1 9.4.12.CI.3 9.4.12.IML.3 9.4.12.TL.2 SL.PI.9–10.4	<i>Formative Assessment:</i> Shortcuts and toolbars packet, Spreadsheet packet 1 – calculating sales, Spreadsheet packet 2 (functions), Payroll Packet (calculate gross pay, net pay, tax), Math Packet, Language, Continuing Education and Mountain Gear (charts), Campus Clothiers project (what-if analysis) <i>Summative Assessment:</i> Walk and Rock Music Project (formulas), Stocks Project (formulas), Quiz on Excel terms, Deli, ABC and Stop & Shop Excel projects (payroll

				spreadsheets), Olympics Spreadsheet, Candy Sales and Cookie Sales Project Benchmark – E-Music Pro Annual Projected Income Project (all excel)
Database - Identify parts of a database - Enter data - Search and sort a database - Design and layout a database - Format a database - Define fields - Create reports - Perform calculations - Add a grand summary and sub summary	5 weeks	<i>For Support:</i> - Peer mentoring on problems - Differentiated teacher feedback on assignments - Re-teaching and review - Guided note taking - Use of visual and multi-sensory formats <i>For Enhancement:</i> - Adjusting the pace of lessons - Higher-order thinking skills - Topic selection	<i>Standards:</i> CRLKSP 1 CRLKSP 3 CRLKSP 4 CRLKSP 5 CRLKSP 8 8.1.12.DA.5 9.4.12.CI.1 9.4.12.CI.3 9.4.12.CT.1 9.4.12.IML.3 W.WR.9–10.5 SL.UM.9–10.5	<i>Formative Assessment:</i> Simple Searches, compound searches, Simple and compound sorts (utilize States and Territories and Planets database); Gradebook and Personnel (layouts database), Movie Database, Ice Cream and Seminar (summary and sub-summary) <i>Summative Assessment:</i> Excel Tables Quiz, States and Territories Project – sorts and searches; Valley Manufacturing Database (create, query, sort and analyze data) Benchmark – College database (research, create database, create 5 layouts, perform queries, format layouts, grand summary and sub summary)

Digital Citizenship <i>Note: Digital Citizenship will be infused through the course</i> ● Discuss global citizenship ● Discuss cyber crimes ● Discuss ethics in using technology	1 week	<i>For Support:</i> ● Peer mentoring on problems ● Differentiated teacher feedback on assignments ● Re-teaching and review ● Guided note taking <i>For Enhancement:</i> ● Adjusting the pace of lessons ● Higher-order thinking skills ● Topic selection	<i>Standards:</i> CRLLKSP 1 CRLLKSP 3 9.4.12.CI.3 9.4.12.DC.1 9.4.12.DC.3 SL.UM.9–10.5	<i>Formative Assessment:</i> Website Reliability Checklist – evaluating websites; Computer Crimes terms and discussion questions, Social Networking Sites and College Admissions – 1 page reaction in MLA format <i>Summative Assessment:</i> Quiz on digital citizenship / Credit Card Scam Case Study
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