Computer Solutions

6606 6 weeks
6607 9 weeks
6608 12 weeks
6609 18 weeks
6610 36 weeks

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Acknowledgments

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Office of Career, Technical, and Adult Education
Virginia Department of Education
Course Description

Suggested Grade Level: 7 or 8

Students are introduced to computing devices and software as problem-solving tools. Emphasis is placed on using basic touch keyboarding skills to complete a variety of projects incorporating word processing, database, presentation, and spreadsheet software. Basic Internet safety, coding, and device maintenance are components of this course.

Note: Completer sequences and certifications do not apply.

Task Essentials Table

- Tasks/competencies designated by plus icons (⊕) in the left-hand column(s) are essential
- Tasks/competencies designated by empty-circle icons (○) are optional
- Tasks/competencies designated by minus icons (⊖) are omitted
- Tasks marked with an asterisk (*) are sensitive.

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<thead>
<tr>
<th>Task Number</th>
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<td>⊕</td>
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<td>Describe the writing process.</td>
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<td>⊖</td>
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<td>Create documents.</td>
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<td>Using Spreadsheet Software to Solve Problems</td>
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**Solving Problems Relating to Computer Maintenance**

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</tbody>
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**Using Presentations to Solve Problems**

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<td></td>
<td>Identify the components of an effective presentation.</td>
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<tr>
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<td></td>
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<td></td>
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</tbody>
</table>

Legend: ☑Essential ☐Non-essential ☐Omitted

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**Curriculum Framework**

**Using Word Processing Software to Solve Problems**
Task Number 31

Format existing documents.

Definition

Formatting documents (e.g., letters, memoranda, reports, outlines, flyers, newsletters, and tables) should include

- setting tabs, using the ruler and/or the appropriate dialogue box
- setting margins and spacing, using the appropriate feature
- selecting font, font size, font style, and text color
- inserting headers and/or footers (may include page numbers)
- creating and manipulating columns, including centering columns on a page
- creating and manipulating tables
- formatting
  - personal letters and/or business letters, using styles such as block, modified block, and modified block with indented paragraphs
  - formal and simplified-style memoranda
  - basic business-style and Modern Language Association (MLA)-style reports
  - various types of outlines.

Enhancement may be achieved by creating a word-processed document and inserting clip art, digital photos, or scanned images.

FBLA Competitive Events and Activities Areas

Business Etiquette

Community Service Project (Middle Level)

Multimedia & Website Development

Task Number 32

Describe the writing process.

Definition
Description should include

- drafting/prewriting
- revising the draft
- editing the draft
- producing the final copy.

FBLA Competitive Events and Activities Areas

Business Etiquette

Community Service Project (Middle Level)

Multimedia & Website Development

Task Number 33

Create documents.

Definition

Creation of documents (e.g., letters, memoranda, reports, outlines, tables, minutes, etc.) should include

- using the writing process
- applying spelling and grammar rules
- producing the final product.

FBLA Competitive Events and Activities Areas

Business Etiquette

Community Service Project (Middle Level)

Multimedia & Website Development

Using Spreadsheet Software to Solve Problems
Task Number 34

Identify the structure of a spreadsheet.

Definition

Identification should include

- terminology
- features
- elements
- uses.

FBLA Competitive Events and Activities Areas

Business Etiquette

Community Service Project (Middle Level)

Multimedia & Website Development

Task Number 35

Input data and formulas.

Definition

Inputting should include

- keying alphabetic and numeric data
- selecting or entering formulas to perform calculations.

FBLA Competitive Events and Activities Areas

Business Etiquette

Community Service Project (Middle Level)

Multimedia & Website Development
Task Number 36

Edit data within the spreadsheet.

Definition

Editing (e.g., retrieve, update, move, and save) should include making changes or corrections to

- text
- numbers, formulas, and functions
- format.

FBLA Competitive Events and Activities Areas

Business Etiquette

Community Service Project (Middle Level)

Multimedia & Website Development

Task Number 37

Create graphs and charts to visually represent data.

Definition

Creation should include selecting the most suitable forms to visually enhance and represent data. Types may include bar graphs, line graphs, pie charts, and others.

FBLA Competitive Events and Activities Areas

Business Etiquette

Community Service Project (Middle Level)

Multimedia & Website Development
Task Number 38

Apply spreadsheet skills to solve a problem.

Definition

Application should include

- stating the problem
- identifying the content, format, and descriptors in a spreadsheet
- organizing, entering, editing, and formatting data in a cell
- enhancing a worksheet by adding color and/or graphics.

FBLA Competitive Events and Activities Areas

Business Etiquette

Community Service Project (Middle Level)

Multimedia & Website Development

Using Database Software to Solve Problems

Task Number 39

Identify the structure of a database.

Definition

Identification should include the

- elements
- purpose
- examples.

FBLA Competitive Events and Activities Areas
Task Number 40

Create a database by defining fields and designing formats.

Definition

Creation should include

- examining requirements, such as the
  - people and systems using the database (e.g., text, numbers, dates)
  - volume of data
  - size of data elements
- determining how the data will be entered, manipulated, and retrieved
- configuring the forms, fields, and tables
- saving the database file
- deleting, editing, copying, and adding records
- printing data within a database.

FBLA Competitive Events and Activities Areas

Business Etiquette

Community Service Project (Middle Level)

Multimedia & Website Development

Task Number 41

Apply database skills to solve a problem.

Definition

Application should include
• stating the problem
• determining the appropriate format and output content
• designing the database
• entering, editing, and formatting data
• performing searches (e.g., queries or filters)
• sorting single and multiple fields in ascending (A-Z) or descending (Z-A) order and
determining where the database information will be inserted in the target document
• merging.

FBLA Competitive Events and Activities Areas

Business Etiquette

Community Service Project (Middle Level)

Multimedia & Website Development

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Using Technologies to Solve Problems

______________________________________________________________

Task Number 42

Identify emerging technologies available to solve specified problems.

Definition

Identification should include research into current and emerging technologies.

FBLA Competitive Events and Activities Areas

Business Etiquette

Community Service Project (Middle Level)

Critical Thinking

Multimedia & Website Development
Task Number 43

Identify local and worldwide network communication systems.

Definition

Identification should include

- Internet service provider
- cloud computing
- server
- router
- network card
- networking software
- shared printing
- shared software.

FBLA Competitive Events and Activities Areas

Business Etiquette

Community Service Project (Middle Level)

Digital Citizenship

Multimedia & Website Development

Task Number 44

Use electronic search strategies to retrieve and evaluate relevant electronic information.

Definition

Use should include

- accessing search engines and the Uniform Resource Locator (URL) address
• connecting to a website that provides dependable information
• gathering data about a particular subject
• using online research skills
• determining whether a site is reliable and relevant
• identifying domains (e.g., .gov, .us, .edu, .net).

FBLA Competitive Events and Activities Areas

Business Etiquette

Community Service Project (Middle Level)

Digital Citizenship

Multimedia & Website Development

Task Number 45

Analyze a problem to determine the technological options needed for a solution.

Definition

Analysis should determine

• the problem
• the most suitable option for addressing the problem
• the features of the option that will help solve the problem.

FBLA Competitive Events and Activities Areas

Business Etiquette

Community Service Project (Middle Level)

Digital Citizenship

Multimedia & Website Development

Task Number 46
Apply technological skills to solve a communications problem.

Definition

Application could include

- sending email
- searching the Internet
- building a website or web page
- exploring new and emerging technologies.

FBLA Competitive Events and Activities Areas

Business Etiquette

Community Service Project (Middle Level)

Digital Citizenship

Multimedia & Website Development

Task Number 47

Explore coding skills to solve real-world problems.

Definition

Exploration could include

- identifying programming languages
- participating in a coding activity.

FBLA Competitive Events and Activities Areas

Business Etiquette

Community Service Project (Middle Level)

Digital Citizenship

Introduction to Computer Science & Coding
Multimedia & Website Development

Solving Ethical and Security Problems Relating to Technology

Task Number 48

Identify security issues related to hardware, software, and data.

Definition

Identification could include

- social networking applications
- tracking through cookies
- smartphone/mobile devices
- computer privacy
- equipment theft
- hacking and viruses
- identity theft
- plagiarism
- intellectual property, patents, copyrights, and trademarks
- Freedom and Innovation Revitalizing United States Entrepreneurship Act of 2007 (FAIR USE Act)
- Digital Millennium Copyright Act (DMCA)
- Internet censorship

and the way each affects security or freedom.

FBLA Competitive Events and Activities Areas

Business Etiquette

Community Service Project (Middle Level)
Task Number 49

Explore problems involving integrity, courtesy, and confidentiality related to information and communications systems.

Definition

Exploration could include examining issues that may be problematic, such as:

- social networking sites
- electronic privacy
- netiquette (i.e., rules of conduct when using the Internet)
- plagiarism
- fair use
- copyright
- reliability of information
- protection software
- unsolicited messages across the Internet (e.g., spamming)
- moderated online environments

To determine the problem and possible solutions.

FBLA Competitive Events and Activities Areas

Business Etiquette

Community Service Project (Middle Level)

Digital Citizenship

Introduction to Computer Science & Coding

Multimedia & Website Development
Task Number 50

Identify the effect of regulations such as copyright and licensing agreements in computer software applications.

Definition

Identification could include

- typical copyright and licensing agreements
- reasons for copyright and licensing agreements in a free market economy
- problems with using copyrighted products without a licensing agreement or approval
- civil and criminal penalties for using copyrighted products without a licensing agreement or approval
- benefits of obtaining licensed use of copyrighted products.

FBLA Competitive Events and Activities Areas

Business Etiquette

Community Service Project (Middle Level)

Digital Citizenship

Introduction to Computer Science & Coding

Multimedia & Website Development

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Solving Problems Relating to Computer Maintenance

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Task Number 51

Identify safety precautions associated with computer use.
Definition

Identification of safety precautions should address ergonomic, personal, and safety issues regarding

- monitors
- keyboards
- printers
- laptops
- projection devices
- peripherals
- chairs
- workstations
- basic electrical and wiring issues.

FBLA Competitive Events and Activities Areas

Business Etiquette

Community Service Project (Middle Level)

Digital Citizenship

Introduction to Computer Science & Coding

Multimedia & Website Development

Task Number 52

Describe the care necessary for internal and external storage devices.

Definition

Description could include identifying

- types of storage (i.e., virtual, external, internal, permanent, or secondary)
- maintenance, removal, and storage of external storage devices.

FBLA Competitive Events and Activities Areas

Business Etiquette
Community Service Project (Middle Level)

Digital Citizenship

Introduction to Computer Science & Coding

Multimedia & Website Development

Task Number 53

Describe methods of preventing the spread of computer viruses.

Definition

Description should include identifying

- available types and the benefits of virus-protection software
- best practices for handling suspect email attachments
- best practices for avoiding contracting viruses when visiting websites
- virus-protection and security settings on the personal computer.

FBLA Competitive Events and Activities Areas

Business Etiquette

Community Service Project (Middle Level)

Digital Citizenship

Introduction to Computer Science & Coding

Multimedia & Website Development

Using Presentations to Solve Problems
Task Number 54

Identify presentation applications.

Definition

Identification should include

- an explanation of the uses/functions of a presentation
- a description of the features, functions, and characteristics of these applications
- a comparison of popular presentation applications.

FBLA Competitive Events and Activities Areas

Business Etiquette

Community Service Project (Middle Level)

Digital Citizenship

Introduction to Computer Science & Coding

Multimedia & Website Development

Task Number 55

Identify the components of an effective presentation.

Definition

Identification should include

- lines of text per slide
- words per line of text
- length of presentation (i.e., number of slides)
- size, color, and placement of text and graphics
- choice of slide background
- use of slide transitions
- number and type of graphics and animations.

FBLA Competitive Events and Activities Areas
**Task Number 56**

**Build a multimedia presentation.**

**Definition**

Building includes the planning process (i.e., choosing a subject, gathering supporting information, and outlining the sequence of the presentation) and creating the slides, a process that should include

- selecting a theme, layout, and colors for the slides
- writing, formatting, and placing text
- selecting appropriate sounds and transitions
- illustrating the slides with graphics
- supporting the information with charts and graphs.

**FBLA Competitive Events and Activities Areas**

Business Etiquette

Community Service Project (Middle Level)

Critical Thinking

Digital Citizenship

Introduction to Computer Science & Coding

Multimedia & Website Development
Apply a multimedia presentation to solve a problem.

Definition

Application should include using specialized features (e.g., transitions, animations, timings, backgrounds, and graphics) to increase the effectiveness of the presentation.

FBLA Competitive Events and Activities Areas

Business Etiquette

Community Service Project (Middle Level)

Critical Thinking

Digital Citizenship

Introduction to Computer Science & Coding

Multimedia & Website Development

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**SOL Correlation by Task**

<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
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<td>A.4, AII.3, COM.7, COM.10</td>
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<td>COM.15</td>
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<td>49</td>
<td>Explore problems involving integrity, courtesy, and confidentiality related to information and communications systems.</td>
<td>English: 8.6</td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>Identify the effect of regulations such as copyright and licensing agreements in computer software applications.</td>
<td>English: 8.6</td>
<td></td>
</tr>
<tr>
<td>51</td>
<td>Identify safety precautions associated with computer use.</td>
<td>History and Social Science: GOVT.9, GOVT.14, GOVT.15</td>
<td>English: 8.6</td>
</tr>
<tr>
<td>52</td>
<td>Describe the care necessary for internal and external storage devices.</td>
<td></td>
<td>Mathematics: COM.16</td>
</tr>
<tr>
<td>53</td>
<td>Describe methods of preventing the spread of computer viruses.</td>
<td></td>
<td>English: 8.6</td>
</tr>
<tr>
<td>54</td>
<td>Identify presentation applications.</td>
<td></td>
<td>English: 8.6</td>
</tr>
<tr>
<td>55</td>
<td>Identify the components of an effective presentation.</td>
<td></td>
<td>English: 8.6</td>
</tr>
<tr>
<td>56</td>
<td>Build a multimedia presentation.</td>
<td></td>
<td>English: 8.3</td>
</tr>
<tr>
<td>57</td>
<td>Apply a multimedia presentation to solve a problem.</td>
<td></td>
<td>Mathematics: COM.7, COM.12</td>
</tr>
</tbody>
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**Teacher Resources**

**Instructional Scenarios**

The following instructional scenarios provide classroom activities to support the major concepts included in Computer Solutions.

- **Let's Get This Party Started**
  Duty/Concept Area(s): 38-40/Word Processing Software to Solve Problems
- **Reviewing an Action Movie**
  Duty/Concept Area(s): 50-55/Using Technologies to Solve Problems
- **Solving Ethical and Security Problems Relating to Computers**
  Duty/Concept Area(s): 56-58/Solving Ethical and Security Problems Relating to Technology
- **Self Help Brochure for Computer Maintenance**
  Duty/Concept Area(s): 59-60/Solving Problems Relating to Computer Maintenance
- **Cyberbullying is NOT cool!**
  Duty/Concept Area(s): 61-64/Using Presentations to Solve Problems
- **Where in the World**
  Duty/Concept Area(s): 62-73/Using Presentations to Solve Problems

**Cyber Security and Cyber Forensics Infusion Units**
Cyber Security and Cyber Forensics Infusion Units (CYBR) were designed to be infused with designated CTE courses to help students in those programs achieve additional, focused, validated tasks/competencies in personal and professional cyber security skills. These units are not mandatory, and, as such, the tasks/competencies are marked as "optional," to be taught at the instructor's discretion.

**Entrepreneurship Infusion Units**

Entrepreneurship Infusion Units may be used to help students achieve additional, focused competencies and enhance the validated tasks/competencies related to identifying and starting a new business venture. Because the unit is a complement to certain designated courses and is not mandatory, all tasks/competencies are marked “optional.”
Appendix: Credentials and Career Cluster Information

Industry Credentials: Only apply to 36-week courses

- College and Work Readiness Assessment (CWRA+)

<table>
<thead>
<tr>
<th>Career Cluster: Information Technology</th>
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<tbody>
<tr>
<td>Pathway</td>
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<tr>
<td>Information Support and Services</td>
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