Lesson Plan

Information Technology Skills: Choosing Appropriate Software

Objective: Students will identify the various uses for popular software applications and choose the appropriate software application for a variety of work-related tasks.

Workplace Readiness Skill: **Maintain working knowledge of current information-technology (IT) systems.**

Maintaining working knowledge of current IT systems may include, but is not limited to,

- *hardware and devices (e.g., peripherals)*
- *software and applications*
- *cloud-based services*
- *file-sharing techniques*
- *emerging technologies*
- *troubleshooting protocols and techniques.*

Microsoft Learn offers classroom resources and materials and instructional techniques that will help enhance instruction and learning for this concept.

Correlations to Other Workplace Readiness Skills:

- Demonstrate work ethic.
- Demonstrate big-picture thinking.
- Manage time and resources.
- Demonstrate an understanding of information security.
- Demonstrate professionalism.
- Demonstrate reading and writing skills.

Correlations to the Virginia Standards of Learning (SOL):

- English: 6.DSR, 6.RV, 6.RI, 6.C, 6.LU, 6.R, 6.W, 7.DSR, 7.RV, 7.RI, 7.C, 7.LU, 7.R, 7.W, 8.DSR, 8.RV, 8.RI, 8.C, 8.LU, 8.R, 8.W, 9.DSR, 9.RV, 9.RI, 9.C, 9.LU, 9.R, 9.W, 10.DSR, 10.RV, 10.RI, 10.C, 10.LU, 10.R, 10.W, 11.DSR, 11.RV, 11.RI, 11.C, 11.LU, 11.R, 11.W, 12.DSR, 12.RV, 12.RI, 12.C, 12.LU, 12.R, 12.W
- History and Social Sciences: USII.9, CE.9, CE.14, WHII.14, VUS.17

Instructional Steps:

1. ***Ask students what they think of when they hear the word software.*** Brainstorm, then define key terms:
    a. **Software** refers to the programs and related information used by a computer.
    b. **Application software** is the software you use to do everyday tasks at home, school, and work.
    c. **Proprietary software** is software you buy. Some proprietary software is available to install on a computer, while some is available to the customer via the Internet (Software as a Service [SaaS]).
    d. **Open-source software** refers to programs that are free and publicly available. Open-source

programming code can be copied, adapted, or changed since there are usually few licensing and copyright restrictions on it.

2. **List types of software used every day at home or at school/work.** Record examples so that students can see the breadth of options. Examples may include commonly used software such as Microsoft (MS) Word and PowerPoint. Point out examples that may be less well-known to students, such as TurboTax, Adobe InDesign, and StorageCraft (backup/recovery software), and discuss that businesses sometimes use specialized, industry-specific software. An example would be an architecture company using computer-aided design (CAD) software. Additionally, emphasize that software choices are constantly changing and evolving.
3. **Ask students to research software applications in small groups.** Assign each student group a software application (see examples on Handout #1). Use Handout #1 to guide student inquiry. Students should have access to computers and the Internet to conduct this research.
4. **Ask students to present findings.** Ask each group to report to the rest of the class on their software research. If possible, have student groups briefly demonstrate the way the software works. (If students do not have access to a particular type of software for this purpose, they may be able to locate a YouTube video demonstration to share.) Take notes.
5. **Assess students; ask them to apply what they've learned to a workplace situation.** Use Handout #2 to present students with various workplace scenarios. In each scenario, describe what type of software might be helpful. Have students discuss their choices while evaluating the various workplace scenarios.

Formative Assessment**:**

- Use the "Presentation Assessment Rubric" to assess each group's presentation. These may also be used as a peer evaluation tool.
- Assess students' ability to apply what they've learned to workplace scenarios through their responses to the activity on Handout #2.

Options for Adaptation/Differentiation:

- To offer scaffolding to students, a whole-group walk-through of Handout #1 will offer greater guidance.
- To assist students without email addresses, or those who may have professionally inappropriate (e.g., cutiepie@aol.com) email addresses, build in an extra class period to create professional email addresses (with parental permission).
- To offer an enrichment opportunity, ask students to create a PowerPoint slide show demonstrating what the class has learned about software applications in the workplace.

Suggestions for Follow-up:

- Ask students to present a PowerPoint slide show demonstrating what they've learned about software applications to another class.
- Ask students to design a bulletin board with "Software Options and Tips for Productivity," to extend and communicate their learning.
- Tie an upcoming project to this lesson and ask students to consider at least two software applications that will assist them with that project.
- Ask students to interview a professional about the types of software he/she uses in the workplace, and how each of those types of software assists with productivity. Share/discuss interviews as a class.

Teacher Resources:

- Soft Skills: The Competitive Edge, U.S. Department of Labor, Office of Disability Employment Policy.
- Workplace Readiness Skills (WRS) Assessment: Virginia Overview, Career and Technical Education Consortium of States (CTECS).
- Workplace Readiness Skills (WRS) for the Commonwealth: Instructional Resources, Career and Technical Education (CTE) Resource Center

Handout #1

Information Technology Skills: Choosing Appropriate Software

Research an example of one of the following types of software:

- **Productivity software** (word processing, presentation, spreadsheet, database, finance/tax, personal information management [PIM] [e.g., notes, calendar, address books])
- **Business software** (includes productivity software as well as finance/accounting, project management, blogging/website management, customer relationship management [CRM], backup/retrieval, e-commerce, email marketing, security, Voice over IP [VoIP])
- **Multimedia software** (image editing, video editing, audio recording and editing, gaming)

(Specific examples to research include QuickBooks, Microsoft [MS] Word, Google Sheets, osCommerce, Adobe Photoshop, MS PowerPoint, MailChimp, Skype for Business, GNU Image Manipulation Program [GIMP], McAfee Endpoint Protection Essential for SMB, and WordPress.)

Who makes the software? _____

What type of software is it? (Check all that apply.) Open ☐ Source ☐ Proprietary ☐ SaaS

Describe the purpose of this piece of software: _____

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When might someone use this software at home or at work? _____

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What other software options may accomplish similar tasks? _____

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If your group can demonstrate the use of this software to the rest of the class, prepare to demonstrate it briefly.

Handout #2

Information Technology Skills:

Choosing Appropriate Software

What type of software application would be appropriate for each of the following job scenarios? Explain your answers.

1. Your boss is creating her office budget for the upcoming fiscal year. The budget must include anticipated profits, expenses, salaries, supplies, rent, utilities, etc.

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2. A small business owner wishes to engage his audience ahead of a major product debut. He has email contact information for hundreds of people who he'd like to get in touch with in a professional, engaging marketing campaign.

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3. A new gym opened locally. The owner wants to use direct mail to send postcards with an introductory special for people who live in a 10-mile radius of the facility. The postcards need to have a design that includes the company logo, relevant images, and concise text to explain the introductory special.

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4. The coach of a local lacrosse team needs to record player statistics, game performances, injury reports, and more for each season of play. She needs this information to be accessible in a variety of formats, and she will want to create queries to pull just the information she needs at any given time.

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5. A researcher at a local university is working on a paper with a team of colleagues from across the globe. Different team members are responsible for different aspects of the research paper, and all team members need access to the paper at any time.

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6. A division manager at a large insurance company needs to have a meeting with his entire team. They are spread out among five regional offices.

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7. A boat repair shop at a popular local lake wants to create a website to attract customers and communicate hours, services, and directions.

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8. The owner of a book store wants to expand into online sales through their website. The sales portal needs to be secure and able to accept all major credit cards.

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9. The contracted photographer for a popular nature magazine just completed an expedition during which she photographed nesting falcons in an urban area. Now the photographs need to be edited for use in the printed magazine and online.

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10. You are employed at a local pet store specializing in exotic fish. The store receives shipments of fish from around the world that are temperature-sensitive. The owner uses spreadsheets and databases to record and track shipments. He needs to ensure that his data will be secure and available in case the Internet goes down or in case the hard drive on his computer crashes.

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Presentation Assessment Rubric

Information Technology Skills:

Choosing Appropriate Software

	Excellent (4)	Good (3)	Fair (2)	Poor (1)
Effectiveness of presentation	The main point of the presentation was stated clearly and emphasized.	The presentation was somewhat effective; the main points were stated, though maybe not emphasized.	The presentation was ambiguous or left the audience wondering about the software application.	The presentation did not state a main point or educate the audience about software.
Software was fully explained	Details about the software's type, purpose, and use were developed and clear to the audience.	Details about the software's type, purpose, and use were somewhat developed and clear to the audience. Additional details would have been helpful.	Details about the software's type, purpose, and use were undeveloped and somewhat unclear to the audience. Additional details would have been helpful.	The presentation did not include relevant details about software.
Organization of presentation	Student presentation is organized logically and easy for the audience to follow.	Student presentation is somewhat organized; the audience could follow it.	Student presentation is somewhat haphazard; audience found it difficult to follow at times.	Student presentation was not organized; the audience could not follow along.
Vocabulary and language choices	Choice of vocabulary is professional and appropriate to a message for the audience. Words chosen reinforce a professional image of the students.	Choice of vocabulary is somewhat professional and appropriate to a message for the audience. Words chosen somewhat reinforce a professional image of the students.	Choice of vocabulary needs to be improved so that it is professional and appropriate to a message for the audience. Some slang or simplistic words should be replaced.	Choice of vocabulary is not professional and appropriate to a message for the audience. Slang or simplistic words replace those that would better represent the students.

Handout #1 – SAMPLE ANSWERS

Information Technology Skills:
Choosing Appropriate Software

Research an example of one of the following types of software:

- **Productivity software** (word processing, presentation, spreadsheet, database, finance/tax, personal information management [PIM] [e.g., notes, calendar, address books])
- **Business software** (includes productivity software as well as finance/accounting, project management, blogging/website management, customer relationship management [CRM], backup/retrieval, e-commerce, email marketing, security, Voice over IP [VoIP])
- **Multimedia software** (image editing, video editing, audio recording and editing, gaming)

(Specific examples to research include QuickBooks, Microsoft [MS] Word, Google Sheets, osCommerce, Adobe Photoshop, MS PowerPoint, MailChimp, Skype for Business, GNU Image Manipulation Program [GIMP], McAfee Endpoint Protection Essential for SMB, and WordPress.)

Who makes the software? ___***Microsoft***_____

What type of software is it? (Check all that apply.) Open ☐ Source X Proprietary ☐ SaaS

Describe the purpose of this piece of software:
Microsoft Word is a graphical word processing program. Users can type and save documents. Word is similar to other word processing software. Word includes helpful tools to make documents.

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When might someone use this software at home or at work?
People use Word every day at home, at school, and at work. Word can be used to write a letter to someone or to write a research paper for an English class. Word can also be used to write a letter when applying for a job or to craft a press release for a business.

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What other software options may accomplish similar tasks?
An alternative to Microsoft Word is Google Docs. Google Docs is a free web-based application in which documents can be created, edited, and stored online. Files can be accessed from any computer with an Internet connection and a full-featured web browser. Plus, Google Docs is compatible with most presentation software and word processor applications.

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SAMPLE

If your group can demonstrate the use of this software to the rest of the class, prepare to demonstrate it briefly.

Virginia's CTE Resource Center

Handout #2 - SAMPLE ANSWERS

Information Technology Skills:

Choosing Appropriate Software

What type of software application would be appropriate for each of the following job scenarios? Explain your answers.

11. Your boss is creating her office budget for the upcoming fiscal year. The budget must include anticipated profits, expenses, salaries, supplies, rent, utilities, etc.

I would use a spreadsheet program such as Excel to create an office budget. Excel allows the user to create calculations and track expenses and profits in an organized fashion.

12. A small business owner wishes to engage his audience ahead of a major product debut. He has email contact information for hundreds of people who he'd like to get in touch with in a professional, engaging marketing campaign.

I would use an email marketing program such as ConstantContact or MailChimp to create an email marketing campaign. These programs allow a business to brand a campaign, track analytics, and share the campaign across social networks.

13. A new gym opened locally. The owner wants to use direct mail to send postcards with an introductory special for people who live in a 10-mile radius of the facility. The postcards need to include a design with the company logo, images, and concise text to explain the introductory special.

I would use a design program such as Adobe InDesign to create an appealing postcard. InDesign allows the user to integrate and apply styles to various elements such as logos, photographs, and text.

14. The coach of a local lacrosse team needs to record player statistics, game performances, injury reports, and more for each season of play. She needs this information to be accessible in a variety of formats, and she will want to create queries to pull just the information she needs at any given time.

A database program such as Access would be a good option for this coach. Access would allow the coach to log a variety of data types and query the database to create reports.

15. A researcher at a local university is working on a paper with a team of colleagues from across the globe. Different team members are responsible for different aspects of the research paper, and all team members need access to the paper at any time.

A cloud-based word processing application would be the best thing to use in this situation, so that the document could be shared and then updated by any team member at any time. An example of this is Google Docs.

SAMPLE

16. A division manager at a large insurance company needs to have a meeting with his entire team. They are spread out among five regional offices.

Web conferencing or virtual meeting software would be appropriate in this circumstance. Examples are Skype for Business and GoTo Meeting.

17. A boat repair shop at a popular local lake wants to create a website to attract customers and communicate hours, services, and directions.

A website/content management application such as WordPress would allow the business owner to create and update a website for his boat shop.

18. The owner of a bookstore wants to expand into online sales through their website. The sales portal needs to be secure and able to accept all major credit cards.

A service such as PayPal would allow this bookstore to accept credit card payments online through the website.

19. The contracted photographer for a popular nature magazine just completed an expedition during which she photographed nesting falcons in an urban area. Now the photographs need to be edited for use in the printed magazine and online.

A software application such as Adobe PhotoShop would allow this photographer to optimize the appearance of images for both print and online applications.

20. You are employed at a local pet store specializing in exotic fish. The store receives shipments of fish from around the world that are temperature-sensitive. The owner uses spreadsheets and databases to record and track shipments. He needs to ensure that his data will be secure and available in case the Internet goes down or in case the hard drive on his computer crashes.

The owner needs to find a software solution that involves backup and retrieval of data.

SAMPLE