

Massachusetts Career Technical Education

Business Technology Framework

2014

This framework will be updated and included on the [Career-Connected Learning Hub](#). Visit the CCL Hub to register for an Employer or Educator Summit to provide feedback on the update, see the revision calendar, and access resources for this and other frameworks.

Strand 2: Technical Knowledge and Skills

2.A Business Technology Health and Safety Skills

- 2.A.01.01 Demonstrate an understanding of Business Technology health skills.
- 2.A.01.02 Describe and demonstrate office and business health practices.
- 2.A.01.03 Illustrate proper body mechanics for the workplace including ergonomics.
- 2.A.01.04 Explain various ways to reduce stress for employees and customers.
- 2.A.01.05 Explain various safety issues with office and business technologies.

Performance Examples:

- Students will demonstrate proper body mechanics and posture.
- Students will spend five minutes each day focusing on safety concerns.

- 2.A.02 Demonstrate an understanding of Business Technology safety skills.
- 2.A.02.01 Describe and demonstrate office and business safety practices.
- 2.A.02.02 Explain and discuss the issues relating to cyber bullying in society.
- 2.A.02.03 Explain and discuss concerns relating to electronic mail privacy.
- 2.A.02.04 Explain and discuss the issues relating to Internet and social media.

2.A.02 Performance Examples:

- Students will write a paper on the importance of safety in the workplace.
- Students will build a presentation on the negative effects of cyber bullying.

2.B Essentials of Business Technology

- 2.B.01 Demonstrate an understanding of customer service skills and practices.
- 2.B.01.01 Define and describe methods of effective customer service.
- 2.B.01.02 Apply effective listening, written, verbal and nonverbal communication.
- 2.B.01.03 Demonstrate appropriate etiquette in communication.
- 2.B.01.04 List ways a company can improve the quality of customer service.
- 2.B.01.05 Identify proper procedures when dealing with colleagues and customers.

2.B.01.06 Describe and demonstrate ways to resolve difficult customer

Performance Examples:

Students will conduct mock situations demonstrating various customer experiences.
Students will conduct mock customer service calls for a simulated business.

situations.

2.B.02 Demonstrate an understanding of business skills and practices.

2.B.02.01 Demonstrate filing procedures according to current industry standards.

2.B.02.02 Identify and plan various types of business meetings.

2.B.02.03 Describe and plan different types of business travel.

2.B.02.04 Describe and demonstrate effective time management skills.

2.B.02.05 Acquire employability skills to secure and maintain employment.

2.B.02 Performance Examples:

Students will create a poster demonstrating healthy and safety business practices.
Students will conduct a conference call for a simulated business meeting.
Students will plan and prepare a complete itinerary for a five day business trip.

2.B.02.06 Demonstrate an understanding of technological skills and practices. Apply keyboarding techniques according to current industry standards.

2.B.02.07 Utilize appropriate technology to solve a problem or complete a task.

2.B.02.08 Demonstrate an understanding for managing electronic files.

2.B.02.09 Conduct business meetings using various office and business technologies.

2.B.02.10 Describe and demonstrate resolutions to hardware and software issues.

2.B.02.11 Explain and utilize different computer technologies and platforms.

2.B.02.12 Utilize different types of mobile technologies and media devices.

2.B.03 Performance Examples:

Students will use an application to conduct audio or video conferencing with another school.

Students will correspond electronically with another school in a foreign country.

Students will utilize mobile devices and mobile applications to research a school

2.C Essentials of Entrepreneurship and Business Management

2.C.01 Demonstrate an understanding of starting a business.

2.C.01.01 Define entrepreneurship and describe entrepreneurial characteristics.

2.C.01.02 Compare and contrast the different forms of business ownership.

2.C.01.03 Identify the different types of industries and markets.

2.C.01.04 Identify and explain the elements of a business plan.

2.C.01.05 Identify federal, state, and local licenses, permits and regulations required to start a business.

2.C.01.06 Describe options needed to obtain capital to start a business.

2.C.01.07 Explain and identify staffing needs required to start a business.

Performance Examples:

Students will call a local town hall to get information on local business regulations.

Students will start a simulated business and research various funding methods.

Students will write a business plan for a simulated service or merchandising business.

2.C.02 Demonstrate an understanding of managing a business.

2.C.02.01 Describe and demonstrate effective leadership and teamwork skills.

2.C.02.02 Describe and demonstrate the decision making process.

2.C.02.03 Identify challenges of a growing business.

2.C.02.04 Explain advantages and disadvantages of a global marketplace.

2.C.02.05 Identify laws and regulations related to managing a business.

2.C.02.06 Identify and explain staffing needs and issues when managing a business.

2.C.02.07 Describe and demonstrate business ethics.

2.C.02.08 Identify ways to dissolve, transfer or sell a business.

2.C.02 Performance Examples:

Students will write a job description for a potential job opening.

Students will prepare and develop a customer services policy manual.

Students will conduct mock interviews on prospective employees.

2.C.03 Demonstrate an understanding of marketing a business.

2.C.03.01 Describe and demonstrate effective marketing and promotion skills.

2.C.03.02 Explain basic marketing strategies including product, place, price and promotion.

2.C.03.03 Identify and explain the various steps of product development.

2.C.03.04 Compare and contrast the various tools and techniques used to promote a business.

2.C.03.05 Use a desktop publishing program to create published media and promotional items.

2.C.03.06 Explain and discuss the effects of advertising and social media on a business.

2.C.03.07 Prepare an advertisement message incorporating multimedia, print, and audio.

2.C.03 Performance Examples:

Students will conduct market research on a product or service.

Students will create a brochure on business customs in a foreign country.

Create an audio or video advertisement promoting your technical program or school

2.D Essentials of Accounting Concepts and Practices

2.D.01 Analyze and complete the accounting cycle for a service business.

2.D.01.01 Illustrate ways to prepare and create a chart of accounts.

2.D.01.02 Classify business transactions into debits and credits.

2.D.01.03 Analyze and record business transactions into a general journal.

2.D.01.04 Illustrate ways to post information to a general ledger.

2.D.01.05 Describe and demonstrate how to prove cash and make correcting entries.

2.D.01.06 Analyze and record adjusting entries into a general journal.

2.D.01.07 Describe and demonstrate how to complete an accounting worksheet.

2.D.01.08 Differentiate between temporary and permanent accounts.

2.D.01.09 Analyze and record closing entries into a general journal.

2.D.01.10 Complete the accounting cycle and generate financial statements.

Performance Examples:

Students will develop a poster denoting the various steps of the accounting cycle.
Students will create an accounting game or flash cards to reinforce accounting terminology.

2.D.02 Demonstrate an understanding of payroll concepts and applications.

- 2.D.02.01 Compare and contrast gross and net pay.
- 2.D.02.02 Distinguish between the various types of payroll withholdings.
- 2.D.02.03 Explain and prepare employment forms for payroll withholding.
- 2.D.02.04 Distinguish between the various types of tax liabilities.
- 2.D.02.05 Extrapolate data from a pay stub and financial work related documents.

2.D.02 Performance Examples:

Students will download, print and complete various employment forms.
Students will calculate a payroll register and tax liabilities for different employee work simulations.

2.D.03 Analyze and complete the accounting cycle using automated accounting.

- 2.D.03.01 Perform account maintenance for charts of accounts, vendors and customers.
- 2.D.03.02 Describe ways to create purchase orders and process a payment to a vendor.
- 2.D.03.03 List ways to create invoices and post a payment from a customer.
- 2.D.03.04 Describe and demonstrate how to create customer statements.

2.D.03 Performance Examples:

Students will create a simulated business with a chart of accounts, vendors, customers and products.
Students will complete the accounting cycle, including financial statements, for a simulated business.

- 2.D.03.05 Complete the accounting cycle and generate financial statements.

2.E Essentials of Financial Concepts and Practices

2.E.01 Demonstrate an understanding of financial concepts and applications.

- 2.E.01.01 Use decimals, percentages and fractions in calculations.
- 2.E.01.02 Identify the various types of financial institutions, accounts, and securities.
- 2.E.01.03 Explain the forms and the purposes of life, property, health and auto insurances.
- 2.E.01.04 Describe and demonstrate the process of opening and maintaining a checking account.
- 2.E.01.05 Analyze and record entries in a checkbook register.
- 2.E.01.06 Describe and demonstrate how to perform a bank reconciliation.
- 2.E.01.07 Explain the process of acquiring, managing, and extending credit.
- 2.E.01.08 Explain the purposes and circumstances for filing bankruptcy.

Performance Examples:

Students will record checks in a checkbook register and perform a bank reconciliation.
Students will prepare a personal budget to record income and expense items for the future.
Students will calculate the costs involved in using a credit card or an installment plan

2.E.02 Demonstrate an understanding of economic concepts and applications.

- 2.E.02.01 Describe and distinguish between an economic want and need.
- 2.E.02.02 Describe the impact of supply and demand.
- 2.E.02.03 Describe and explain the function of the stock market.
- 2.E.02.04 Distinguish between the various methods of investment tracking.
- 2.E.02.05 Explain the purpose of an initial public stock offering.

2.E.02 Performance Examples:

Students will track and record information for a publicly traded stock using spreadsheet software.

Students will research companies and create a table to record and compare financial information.

Students will research and enroll in an online stock market simulation program.

- 2.E.03 Demonstrate an understanding of taxation concepts and applications.
 - 2.E.03.01 Identify and explain the purposes for filing income tax returns.
 - 2.E.03.02 Describe and analyze different types of income and expense items.
 - 2.E.03.03 Differentiate between the various types of filing status classifications.
 - 2.E.03.04 Differentiate between standard deductions and itemized deductions.

2.E.03 Performance Examples:

Students will download and print the various tax forms needed.

Students will prepare a federal and state tax return for an individual or a family.

2.F Differentiate between deductions and credits on an income tax return. Essentials of Electronic Mail and Messaging

- 2.F.01 Demonstrate an understanding of developing and sending electronic mail.
 - 2.F.01.01 Explain and describe concerns relating to electronic mail privacy.
 - 2.F.01.02 Create, edit, format, and send electronic mail to a recipient.
 - 2.F.01.03 Create, edit, format, and send personal and business contacts.
 - 2.F.01.04 Create, edit, and manage tasks and notes for project management.
 - 2.F.01.05 Attach files and other items when sending electronic mail.
 - 2.F.01.06 Differentiate between the various ways to print electronic mail.

Performance Examples:

Students will write a message that they would send to a fictitious manager.

Students will demonstrate an understanding for attaching files to messages.

- 2.F.02 Utilize advanced electronic mail and communication features.
 - 2.F.02.01 Create, edit, and manage distribution lists or contact groups.
 - 2.F.02.02 Prepare and manage folders for message storage and archiving.
 - 2.F.02.03 Differentiate between the various options for sending electronic mail.
 - 2.F.02.04 List and demonstrate ways to create, edit, and format a signature for electronic mail.
 - 2.F.02.05 Describe and demonstrate inviting recipients to an appointment or meeting.
 - 2.F.02.06 Describe and demonstrate formatting, sharing, and sending a calendar.

2.F.02 Performance Examples:

Students will create a distribution list or contact group for purposes of sending out messages.

Students will create an event using a calendar and invite attendees with an attached

2.G Essentials of Social Media and Website Design

- 2.G.01 Plan, create, edit, and manage a social media site.
 - 2.G.01.01 Describe the purpose of social media sites.
 - 2.G.01.02 Explain concerns relating to privacy and security.
 - 2.G.01.03 Describe and develop a social media strategy for a business.
 - 2.G.01.04 Illustrate ways to utilize and manage social media sites according to current industry, legal, and ethical professional

Performance Examples:

Students will develop and maintain a classroom blog for a specific situation or activity.
 Students will interview a business person to discern how social media is used
 to market a business

standards.

- 2.G.02 Plan, create, edit, and manage a website.
 - 2.G.02.01 Describe how to obtain a domain name and host a website.
 - 2.G.02.02 Define the target audience and identify the primary purpose of the site.
 - 2.G.02.03 Describe and demonstrate basic website design concepts.
 - 2.G.02.04 Distinguish between the various methods of developing a website.
 - 2.G.02.05 List and describe ways to create a storyboard to plan for a website.
 - 2.G.02.06 Create both internal and external hyperlinks.
 - 2.G.02.07 Insert graphics, tables, audio, and video in a website.
 - 2.G.02.08 Upload a web page to a web server.
 - 2.G.02.09 Identify and explain the laws restricting use of copyrighted material.
 - 2.G.02.10 Manage and update a website.

2.G.02 Performance Examples:

Students will utilize Hypertext Markup Language (HTML) code to create or recreate a basic website.
 Students will plan, create and manage a website for a simulated business.
 Students will design a website for an event or activity taking place in
 school or in the community

2.H Essentials of Database Administration

- 2.H.01 Create, edit, format, and print information in a database.
 - 2.H.01.01 Create, edit, format and tables.
 - 2.H.01.02 Enter, manipulate, and delete information in datasheet and design view.
 - 2.H.01.03 Modify field properties and set a primary key.
 - 2.H.01.04 Join and establish relationships between tables.
 - 2.H.01.05 Create, edit, format and customize a form.
 - 2.H.01.06 Enter, manipulate and delete information in datasheet and form view.
 - 2.H.01.07 Create, edit, format and customize a query.
 - 2.H.01.08 Utilize a parameter and a crosstab query in a database.
 - 2.H.01.09 Create, edit, format and customize a report.

Performance Examples:

Students will create a database to store names and addresses of contacts.
 Student will build a query to run a search on their contacts, for specific criteria.

- 2.H.02 Utilize advanced database management features.
 - 2.H.02.01 Create and use wildcards in specifying criteria.

- 2.H.02.02 Describe and demonstrate the advanced use of multiple data types.
- 2.H.02.03 Apply a sort and filter to a table, form, report and query.
- 2.H.02.04 Use function tools to perform calculations in a table.
- 2.H.02.05 Utilize calculated fields in a form, query and report.
- 2.H.02.06 Differentiate between the various ways to print information in a database.

2.H.02 Performance Examples:

Students will create a database for a mail merge.
 Students will design and implement a database for a simulated business.
 Students will utilize forms, queries and reports to enter and extract specific business information.

- 2.H.02.07 Integrate a database with other applications.

2.I Essentials of Spreadsheet Development

- 2.I.01 Create, edit, format and print a spreadsheet.

- 2.I.01.01 Enter, edit, format and proofread data in rows and columns.
- 2.I.01.02 Differentiate between the various ways to view a spreadsheet.
- 2.I.01.03 Describe and demonstrate the use of page orientation and setting margins.
- 2.I.01.04 Format a spreadsheet using borders, shading, headers and footers.
- 2.I.01.05 Apply conditional formatting to data in a spreadsheet.
- 2.I.01.06 Demonstrate how to link information on a spreadsheet.
- 2.I.01.07 Differentiate between the various ways to print a spreadsheet.

Performance Examples:

Students will build a spreadsheet to store names and addresses of contacts.
 Student will filter information in a spreadsheet, to show specific information.

- 2.I.02 Insert elements and other items into a spreadsheet.
 - 2.I.02.01 Create, insert and format graphics and pictures in a spreadsheet.
 - 2.I.02.02 Create, insert and format a chart and a pivot table in a spreadsheet.
 - 2.I.02.03 Insert internal and external hyperlinks.

2.I.02 Performance Examples:

Students will create data for a fictitious company, and then generate a pivot table.
 Students will utilize hyperlinks in a spreadsheet to link to outside information.

- 2.I.03 Utilize advanced spreadsheet development features.

- 2.I.03.01 Utilize the comments feature to review and collaborate on a spreadsheet.
- 2.I.03.02 Create, insert and format a simple and custom sort.
- 2.I.03.03 Create, insert and format a basic, advanced and custom filter.
- 2.I.03.04 Utilize advanced features to automate, integrate and share information.
- 2.I.03.05 Create, insert and format simple and complex formulas.
- 2.I.03.06 Create, insert and format simple and nested functions.
- 2.I.03.07 Describe and use relative and absolute referencing.
- 2.I.03.08 Build formulas or functions that link to other worksheets.
- 2.I.03.09 Utilize named ranges for data management, formulas and functions.

2.I.03.10 Differentiate between the various ways to protect a spreadsheet.

2.I.03	Performance Examples: Students will create a customer list for a simulated business and apply sorts and filters. Students will develop a budget for a simulated business, business project, or personal scenario. Students will create quarterly sales spreadsheets and charts linking to annual
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2.J Essentials of Document Processing

- 2.J.01 Create, edit, format and print a document.
- 2.J.01.01 Enter, edit, format and proofread text in a document.
 - 2.J.01.02 Differentiate between the various ways to view a document.
 - 2.J.01.03 Describe and demonstrate the use of page orientation and setting margins.
 - 2.J.01.04 Format documents using columns, borders and shading.
 - 2.J.01.05 Format documents using bullets, numbering and multilevel lists.
 - 2.J.01.06 Describe and demonstrate the use of page breaks and section breaks.
 - 2.J.01.07 Apply and edit headers, footers and page numbering in a document.
 - 2.J.01.08 Describe and demonstrate the use of tabs and setting tab stops.
 - 2.J.01.09 Create, save and utilize a document template.
 - 2.J.01.10 Differentiate between the various ways to print a document.

Performance Examples: Students will type out a ten page document, and then number the pages accordingly. Students will generate a form for a business and then save it as a template.

- 2.J.02 Insert elements into a document.
- 2.J.02.01 Create, edit and format a table and information in a table.
 - 2.J.02.02 Illustrate ways to enter, edit and sort information in a table.
 - 2.J.02.03 Perform basic mathematical calculations in a table.
 - 2.J.02.04 Create, insert and format charts, graphics and pictures in a document.
 - 2.J.02.05 Illustrate ways to insert internal and external hyperlinks.

2.J.02	Performance Examples: Students will add a table into a document, and then insert a formula. Students will add a chart into a document, displaying information visually.
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- 2.J.03 Utilize advanced document processing features.
- 2.J.03.01 Utilize track changes and comments to review and collaborate on a document.
 - 2.J.03.02 Describe and demonstrate the various ways to perform a mail merge.
 - 2.J.03.03 Create, edit and format reference features in a document.
 - 2.J.03.04 Differentiate between the various ways to protect a document.
 - 2.J.03.05 Create, edit and format forms and protect a document accordingly.

- 2.J.03 Performance Examples:
Students will design, implement and maintain a brochure and monthly newsletter for their school.
Students will create business letters, memorandums, and reports with tables, for a simulated business.
Prepare conference materials, registration forms, and evaluation forms for an event.

2.K Essentials of Presentation Management

- 2.K.01 Create, edit, format and print a presentation.
- 2.K.01.01 Describe the ways to create, edit, format and proofread slides in a presentation.
 - 2.K.01.02 Differentiate between the various ways to view a presentation.
 - 2.K.01.03 Describe and demonstrate the use of page orientation and setting margins.
 - 2.K.01.04 Format a presentation using bullets, slide layouts, headers and footers.
 - 2.K.01.05 Format a presentation using templates and themes.
 - 2.K.01.06 Differentiate between the various ways to print a presentation.

Performance Examples:
Students will insert a custom footer into a presentation, displaying the title.
Students will create their own unique design theme for a presentation.

- 2.K.02 Insert elements and other items into a presentation.
- 2.K.02.01 Create, edit and format information in a table.
 - 2.K.02.02 Create, insert and format charts, graphics and pictures in a presentation.
 - 2.K.02.03 Insert internal and external links.

2.K.02 Performance Examples:
Students will create a presentation for a simulated school club they would like to develop.
Students will create a presentation to compare and review similar products for purchasing.

- 2.K.03 Utilize advanced presentation management features.
- 2.K.03.01 Utilize the comments feature to review and collaborate on a presentation.
 - 2.K.03.02 Apply animation and slide transition tools on a presentation.
 - 2.K.03.03 Convert a presentation to be viewed on all types of technology and media.
 - 2.K.03.04 Differentiate between the various devices used in delivering a presentation.
 - 2.K.03.05 List and demonstrate ways to effectively present and communicate a presentation.

2.K.03 Performance Example:
Students will collaborate with another student on their presentation, making comments.

Strand 3: Embedded Academics

Embedded English Language Arts and Literacy

CTE Learning Standard Number	Strand Coding Designation Grades ELAs Learning Standard Number	Text of English Language Arts Learning Standard
2.C.01.02 2.C.01.04 2.C.02.06.	W1	Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.
2.C.01.02 2.C.01.04 2.C.02.06	W2	Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.
2.C.01.02 2.C.01.04 2.C.02.06	W4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
2.C.01.02 2.C.01.04 2.C.02.06	W5	Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.
2.C.01.02 2.C.01.04 2.C.02.06	W6	Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically.
2.C.01.02 2.C.01.04 2.C.02.06	W7	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.
2.C.01.02 2.C.01.04 2.C.02.06	W8	Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation. Performance Example(s): Students will create a business plan, which will be a long term project (a suggested resource for this project is the Small Business Administration's website).
2.C.03.05 2.C.03.07	L3	Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening.

2.C.03.05 2.C.03.07	L6	Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression. Performance Example(s): Students will be assigned a business name, and each student will create informational material, such as brochures, business cards, flyers, etc., for said business.
2.C.03.05 2.C.03.07	RH7	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.
2.C.03.05 2.C.03.07	RST7	Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words. Performance Example(s): Students will be assigned to a team, and each team will develop promotional materials for a business, in which at the end of the project each team will present their findings.
2.E.01.02 2.E.01.03 2.E.02.01 2.E.02.02 2.E.02.03 2.E.03.02	W1	Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.
2.E.01.02 2.E.01.03 2.E.02.01 2.E.02.02 2.E.02.03 2.E.03.02	W2	Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.
2.E.01.02 2.E.01.03 2.E.02.01 2.E.02.02 2.E.02.03 2.E.03.02	W9	Draw evidence from literary or informational texts to support analysis, reflection, and research.
2.E.01.02 2.E.01.03 2.E.02.01 2.E.02.02 2.E.02.03 2.E.03.02	W10	Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.
2.E.01.02 2.E.01.03 2.E.02.01 2.E.02.02 2.E.02.03 2.E.03.02	RI2	Determine a central idea of a text and analyze its development over the course of the text, including how it emerges and is shaped and refined by specific details; provide an objective summary of the text.

2.E.01.02 2.E.01.03 2.E.02.01 2.E.02.02 2.E.02.03 2.E.03.02	RI4	Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the cumulative impact of specific word choices on meaning and tone (e.g., how the language of a court opinion differs from that of a newspaper). Performance Example(s): After receiving a listing of ten types of financial institutions, accounts and securities, students will choose five to research, and then create informational brochures using their desktop publishing skills. Students will maintain for thirty calendar days, a listing of all their personal purchases and at the end of the month students will place their purchases in columns deemed WANT and NEEDS and summarize the results in a brief essay. Select a consumer item from the past fifty years that was in high demand, and research how the item has fared since, developing a presentation on the findings.
2.G.01.02	W8	Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation. Performance Example(s): Students will report on three major concerns relating to Internet security and privacy. Students will procure an article on each concern and share this information with the class.
2.G.01 2.G.02 2.G.02.02 2.G.02.03	WHST4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
2.G.01 2.G.02 2.G.02.02 2.G.02.03	WHST5	Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.
2.G.01 2.G.02 2.G.02.02 2.G.02.03	WHST6	Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically. Performance Example(s): Students will create, edit and manage a newly created social media site for their Office and Business Technology class, and also will develop, edit and manage a website for a particular niche.
2.G.02.09	W7	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.
2.G.02.09	W8	Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of

		ideas, avoiding plagiarism and following a standard format for citation Performance Example(s): Students will work with their history classes and will research a unique Supreme Court cases that deal with copyrighted material and intellectual property, and then the students will develop an essay that explains that particular case about the decision.
2.J.01.01	L1	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
2.J.01.01	L2	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing. Performance Example(s): Students will write three drafts of a cover letter, resume, and a letter of recommendation for a classmate.
2.J.02.04	WHST2	Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes. Performance Example(s): Students will create a survey that they will administer to their classmates. They will report on the results to their classmates by creating a PowerPoint with one chart, three graphics and four pictures inserted.
2.K.01.01 2.K.02.01 2.K.02.02	WHST4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
2.K.01.01 2.K.02.01 2.K.02.02	WHST5	Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.
2.K.01.01 2.K.02.01 2.K.02.02	WHST6	Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically. Performance Example(s): Students will work in a team to build and peer edit slides in a presentation.
2.K.01.01 2.K.02.01 2.K.02.02	SL5	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. Performance Example(s): Students will create, peer edit and format information in a table within a presentation.
2.K.02.02	RH7	Integrate quantitative or technical analysis (e.g., charts, research data) with qualitative analysis in print or digital text. Performance Example(s): Students will create a multiple slide presentation on an historical event from history, which will consist of a chart, several graphical elements and multimedia.
2.K.03.05	SL2	Integrate multiple sources of information presented in diverse media or formats (e.g., visually, quantitatively, orally) evaluating the credibility and accuracy of each source.
2.K.03.05	SL4	Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and

		style are appropriate to purpose, audience, and task.
2.K.03.05	SL5	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. Performance Example(s): Over the course of the school year students will do at least one presentation each term, in which students will be assigned the topic, but must select an application used to create the work.
2.F.01.02	WHST4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
2.F.01.02	WHST5	With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed.
2.F.01.02	WHST6	Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically. Performance Example(s): Students will peer edit a memorandum to be sent by email, analyzing tone, effective format.

Embedded Mathematics

CTE Learning Standard Number	Math Content Conceptual Category and Domain Code Learning Standard Number	Text of Mathematics Learning Standard
2.B.02.03 2.C.03.02 2.D.03.01 2.E.01.01 2.E.01.04 2.E.01.05 2.J.02.03	7.NS.A.3 5.MD.A.1 5.MD.B.2 9-12.MD.B.5	Solve real-world and mathematical problems involving the four operations with rational numbers. Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems. Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Use operations on fractions for this grade to solve problems involving information presented in line plots Weigh the possible outcomes of a decision by assigning probabilities to payoff values and finding expected values. Performance Example(s): Students will demonstrate the ability to use mathematical operations to plan a business trip. Students will accurately use decimals, percents and fractions in making financial calculations. Students will prepare a personal budget to record income and use aspects probability to predict expense items for the future. Students will use proper number sense skills when working on accounting tasks.
2.D.01.02 2.E.01.05 2.E.03.02 2.E.03.05	6.NS.C.5 7.EE.B.3	Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation. Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. Performance Example(s): Students will properly learn how to use negative and positive numbers to maintain, analyze and record entries into a checkbook. Students will be able to represent financial information in multi-types of graphs, such as line graphs, bar graphs etc. Students will use integers to represent real-life situations, such as credits and debits.

2.D.02.02	6.NS.C.7b 6.NS.C.7c 6.NS.C.7d 5.MD.A.1 5.MD.B.2 6.EE.B.8 9-12.MD.B.5	Write, interpret, and explain statements of order for rational numbers in real-world contexts. <i>For example, write $-3^{\circ}\text{C} > -7^{\circ}\text{C}$ to express the fact that -3°C is warmer than -7°C.</i> Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. <i>For example, for an account balance of -30 dollars, write $-30 = 30$ to describe the size of the debt in dollars.</i> Distinguish comparisons of absolute value from statements about order. <i>For example, recognize that an account balance less than -30 dollars represents a debt greater than 30 dollars.</i> Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems. Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Use operations on fractions for this grade to solve problems involving information presented in line plots. Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams. Weigh the possible outcomes of a decision by assigning probabilities to payoff values and finding expected values. Performance Example(s): Students will be able to utilize inequalities to compare data. Students will be able to make comparisons of numerical data using absolute value. Students will determine the possible outcomes of a decision using probabilities of data and finding expected values.
2.E.02	5.MD.A.1	Convert among different-sized standard measurement units within a
2.H.01.01	5.MD.B.2	given measurement system (e.g., convert 5 cm to 0.05 m), and use
2.H.01.02	6.EE.C.9	these conversions in solving multi-step, real world problems.
2.H.01.04	8.EE.B.5	Make a line plot to display a data set of measurements in fractions of a
2.I.03.05	9-12.MD.A.1	unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Use operations on fractions for this grade to solve
2.I.03.09	9-12.MD.B.5	problems involving information presented in line plots
2.J.02.03		Use variables to represent two quantities in a real-world problem that
2.K.02.02		change in relationship to one another; write an equation to express one
		quantity, thought of as the dependent variable, in terms of the other
		quantity, thought of as the independent variable. Analyze the
		relationship between the dependent and independent variables using
		graphs and tables, and relate these to the equation
		Graph proportional relationships, interpreting the unit rate as the
		slope of the graph. Compare two different proportional relationships
		represented in different ways. For example, compare a distance-time
		graph to a distance-time equation to determine which of two moving
		objects has greater speed.
		Define a random variable for a quantity of interest by assigning a
		numerical value to each event in a sample space; graph the
		corresponding probability distribution using the same graphical
		displays as for data distributions.

		Weigh the possible outcomes of a decision by assigning probabilities to payoff values and finding expected values. Performance Example: Students will be able to compare financial information in multi-types of graphs, such as line graphs, bar graphs etc. Students will create, use and format simple and complex algebraic and geometric formulas. Students will understand mathematical functions and how they can be used to determine financial data. Students will be able to make a draft using patterns of symmetry, ratios, proportions, and measurements when creating different types of presentations. Students will be able to construct and design a sketch of a basic work piece that has measurements that are mathematically accurate. Using knowledge of geometric figures, such as computing actual lengths and areas from a scale drawing, students will apply it to a particular work project.
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Embedded Science and Technology/Engineering

Technology/Engineering

CTE Learning Standard Number	Subject Area, Topic Heading and Learning Standard Number	Text of Scientific Inquiry Skills Standard Science Frameworks not separated
2.A.01.04	TECH/ENG 2.6	The purposes of zoning laws and building codes in the design and use of structures. Performance Examples: With a partner, students will identify some concerns that a homeowner may have about a small business opening in the neighborhood. Students will interview area business owners about the impact of local, state, and federal laws on their business decisions.
2.A.02.02	SIS1	Describe and demonstrate the decision making process Make observations, raise questions, and formulate hypotheses. Observe the world from a scientific perspective. Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge. Performance Examples: Given a problem or issue at school, students will use the decision making process to find a solution. Given a choice between two different positions, the students will utilize the decision making process to analyze the positives and negatives associated with each choice before making a decision.
2.A.03.01	BIO 6.1 BIO 6.2	Describe and demonstrate effective marketing and promotion skills. Birth, death, immigration, and emigration influence population size. Changes in population size and biodiversity result from a variety of influences. Performance Example: Students will find the percentage of the population that would represent the target market for their business plan. Students will discuss how target market might be influenced by changes in a variety of conditions.
2.A.03.03	SIS2 SIS4 TECH/ENG 1.1 TECH/ENG 7.1	Identify the steps of product development. Design and conduct scientific investigations. Select required materials, equipment, and conditions for conducting an experiment. Communicate and apply the results of scientific investigations. Use language and vocabulary appropriately, speak clearly and logically, and use appropriate technology (e.g., presentation software) and other tools to present findings. Steps of the engineering design process. Performance Examples: Given miscellaneous objects, a team of students will create a new product giving the product a name, purpose and present new product to the class. Students will identify the want or need that satisfies a list of inventions. Students will invent a new product or service that satisfies a consumer want or need.

2.B.01.01	SIS3	Illustrate ways to prepare and create a chart of accounts. Analyze and interpret results of scientific investigations. Represent data and relationships between and among variables in charts and graphs. Use appropriate technology (e.g., graphing software) and other tools. Performance Example: Students will create a chart of accounts for a service business.
2.B.02.05	SIS3 SIS4	Analyze and interpret results of scientific investigations. Represent data and relationships between and among variables in charts and graphs. Use appropriate technology (e.g., graphing software) and other tools. Communicate and apply the results of scientific investigations. Explain diagrams and charts that represent relationships of variables. Performance Examples: Given net salary amounts, students will calculate federal, state, and Medicare taxes. Students will prepare a spreadsheet for payroll including all formulas for withholding taxes for a small business with at least twelve employees.
2.C.01.01	CHEM 5.6 SIS3	Percent yield in a chemical reaction. Analyze and interpret results of scientific investigations. Use mathematical operations to analyze and interpret data results. Performance Example: Students will conduct a market research survey and analyze results using a graph to represent results and using decimals, percentages and fractions.
2.D.01.01	TECH/ENG 6.1	Information travels through various media. Performance Examples: Students will be able to describe how companies use social media to advertise. Students will create an advertisement to be used on a social media site.
2.D.02.05	TECH/ENG 1.3	Multi-view drawings and pictorial drawings are produced using various techniques. Performance Example: Given a topic to research, students will design a storyboard to organize information for presentation.
2.D.02.07	SIS3	Analyze and interpret results of scientific investigations. Use appropriate technology (e.g., graphing software) and other tools. Performance Example: Students will create a website to present their business using graphics, tables, audio and video tools.
2.E.01.07	SIS3	Analyze and interpret results of scientific investigations. Represent data and relationships between and among variables in charts and graphs. Assess the reliability of data and identify reasons for inconsistent results, such as sources of error or uncontrolled conditions. Performance Example: Using a database, students will create a query that will extrapolate the necessary information to make an informed business decision.
2.E.02.04	SIS3 SIS4	Analyze and interpret results of scientific investigations. Use appropriate technology (e.g., graphing software) and other tools. Use mathematical operations to analyze and interpret data results.

		Communicate and apply the results of scientific investigations. Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation. Performance Examples: Students will prepare a spreadsheet to calculate the annual total and average sales for a business. Students will create a graph that compares sales to the previous year and interpret the results.
2.F.02.02	PHYS 1.3	Graphs of 1-dimensional motion. Performance Examples: Students will prepare a spreadsheet to calculate the annual total and average sales for a business. Students will create a graph that compares sales to the previous year and interpret the results.
2.J.01.02	SIS4	Communicate and apply the results of scientific investigations. Use language and vocabulary appropriately, speak clearly and logically, and use appropriate technology (e.g., presentation software) and other tools to present findings. Performance Examples: Students will create a customer satisfaction survey for their business. Students will role play an interaction with a difficult customer, both on the phone and in person. Students will respond appropriately to an email from a dissatisfied customer.
2.J.01.11	BIO 4.5 SIS2	The muscular/skeletal system supports the body and allows for movement. Bones produce blood cells. Design and conduct scientific investigations. Follow all of the safety guidelines. Performance Examples: Students will complete CareerSafe training and Illustrate proper body mechanics for the workplace including ergonomics. Students will research the effects of various ailments caused by improper body mechanics and ways to prevent these problems.
2.J.01.16	CHEM 6.5	There is a natural tendency for systems to move in a direction of disorder or randomness (entropy). Performance Examples: Students will prioritize a set of tasks and set a schedule to complete the tasks. Students will adhere to assigned project deadlines.
2.J.01.20	SIS3 TECH/ENG 1.2	Analyze and interpret results of scientific investigations. Use appropriate technology (e.g., graphing software) and other tools. The engineering design process is used to solve problems, advance society, and modify technologies, objects, and processes. Performance Example: Given a problem, students will utilize the proper technology tools to present a visual clear and concise solution to the problem for the staff.
2.J.01.22	SIS2 ES 2.1	Design and conduct scientific investigations, and follow of the safety guidelines. Renewable energy resources and nonrenewable energy resources. Performance Examples: Students will develop policies to make a business more energy efficient and eco-friendly. Students will create guidelines for safe and proper use of technology in the workplace.

Industry Recognized Credentials (Licenses and Certifications/Specialty Programs)

1. Microsoft Office Specialist:
 - Microsoft PowerPoint (during Freshmen year)
 - Microsoft Word (during Sophomore year)
 - Microsoft Excel (during Junior year)
 - Microsoft Access (during Senior year)
 - Microsoft Outlook (optional certification)
 - Microsoft Office 365 (optional certification)
2. Microsoft Office Expert:
 - Microsoft Word Expert (during Sophomore year)
 - Microsoft Excel Expert (during Junior year)
3. Microsoft Office Master:
 - This certification is obtained by completing all of the following listed above.
4. Intuit QuickBooks Certified User, which involves taking and passing the Intuit QuickBooks Certification Test (during senior year).
5. Adobe Certified Associate, which involves taking and passing the Adobe Photoshop Certification Test (optional certification).
6. National Professional Certification in Customer Service (optional certification).

NOTE: There are multiple companies that provide these exams, and keep in mind as time progresses the versions of the software mentioned above will advance