



**MASSACHUSETTS**  
**DEPARTMENT of**  
**EDUCATION**

**Vocational Technical Education  
Framework**

**Business and Consumer Services  
Cluster**

***Office Technology***

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## **Strand 1: Safety and Health Knowledge and Skills**

### **1.A Define health and safety regulations.**

- 1.A.01a Identify and apply OSHA and other health and safety regulations that apply to specific tasks and jobs in the occupational area.
- 1.A.02a Identify and apply EPA and other environmental protection regulations that apply to specific tasks and jobs in the occupational area.
- 1.A.03a Identify and apply Right-To-Know (Hazard Communication Policy) and other communicative regulations that apply to specific tasks and jobs in the occupational area.
- 1.A.04a Explain procedures for documenting and reporting hazards to appropriate authorities.
- 1.A.05a List penalties for non-compliance with appropriate health and safety regulations.
- 1.A.06a Identify contact information for appropriate health and safety agencies and resources.

#### **Performance Example**

1. Create a presentation/demonstration that identifies proper safety and health issues and documents appropriate practices and procedures.

### **1.B Demonstrate health and safety practices:**

- 1.B.01a Identify, describe and demonstrate the effective use of Material Safety Data Sheets (MSDS).
- 1.B.02a Read chemical, product, and equipment labels to determine appropriate health and safety considerations.
- 1.B.03a Identify, describe and demonstrate personal, shop and job site safety practices and procedures.
- 1.B.04a Demonstrate safe dress and use of relevant safety gear and personal protective equipment (PPE), including wrist rests, adjustable workspaces and equipment, gloves, boots, earplugs, eye protection, and breathing apparatus.
- 1.B.05a Illustrate appropriate safe body mechanics, including proper lifting techniques and ergonomics.
- 1.B.06a Locate emergency equipment in your lab, shop, and classroom, including (where appropriate) eyewash stations, shower facilities, sinks, fire extinguishers, fire blankets, telephone, master power switches, and emergency exits.
- 1.B.07a Demonstrate the safe use, storage, and maintenance of every piece of equipment in the lab, shop, and classroom.
- 1.B.08a Describe safety practices and procedures to be followed when working with and around electricity.
- 1.B.09a Properly handle, store, dispose of, and recycle hazardous, flammable, and combustible materials.
- 1.B.10a Demonstrate proper workspace cleaning procedures.
- 1.B.11c Explain carpal tunnel syndrome, or related repetitive strain injuries, and list exercises to reduce such injury.
- 1.B.12 Describe causes and remedies for eye strain.
- 1.B.13 Describe the relationship between productivity and health.

**1.C Demonstrate responses to situations that threaten health and safety.**

- 1.C.01a Illustrate First Aid procedures for potential injuries and other health concerns in the occupational area.
- 1.C.02a Describe the importance of emergency preparedness and an emergency action plan.
- 1.C.03a Illustrate procedures used to handle emergency situations and accidents, including identification, reporting, response, evacuation plans, and follow-up procedures.
- 1.C.04a Identify practices used to avoid accidents.
- 1.C.05a Identify and describe fire protection, precautions and response procedures.
- 1.C.06a Discuss the role of the individual and the company/organization in ensuring workplace safety.
- 1.C.07a Discuss ways to identify and prevent workplace/school violence.

## **Strand 2: Technical Knowledge and Skills**

### **2.A Demonstrate effective customer service skills.**

- 2.A.01c Describe customer types and the importance of customer service.
- 2.A.02c Demonstrate ways to greet and assist a customer in appropriate ways.
- 2.A.03c Demonstrate ways to respond to customers and exceed their expectations.
- 2.A.04c Demonstrate ways to resolve customer service complaints in a professional and appropriate manner.
- 2.A.05c Identify the steps to manage dissatisfied customers.
- 2.A.06c Explain ways to reduce customer service stress to both workers and the consumer.

### **2.B Describe and demonstrate how to utilize telecommunication devices and activities.**

- 2.B.01c Illustrate and apply e-commerce practices to a variety of situations.
- 2.B.02c Identify methods of transmitting information using telephone technology.
- 2.B.03c Demonstrate proper listening and speaking skills.
- 2.B.04c Record messages accurately and completely.

### **2.C Exhibit techniques to market products and services.**

- 2.C.01c Demonstrate the selling process.
- 2.C.02c List methods and tools used to determine the customer's needs.
- 2.C.03c Prepare an advertising message incorporating multimedia, print and/or audio technologies.
- 2.C.04c Explain the qualities of good public relations.
- 2.C.05c Research and analyze market information.

### **2.D Describe and demonstrate management activities.**

- 2.D.01c Explain the advantages and disadvantages of three major types of business ownership.
- 2.D.02c Explain the management functions of planning, organizing, staffing, leading, and controlling.
- 2.D.03c Describe Total Quality Management (TQM) concepts.
- 2.D.04c Develop a mission statement or company objective.
- 2.D.05c Develop a budget for a business/company.
- 2.D.06c Identify and budget for staffing requirements.

### **2.E Plan and participate in business meetings.**

- 2.E.01c Identify the different types of business meetings.
- 2.E.02c Plan a business meeting.
- 2.E.03c Prepare documents related to business meetings.
- 2.E.04c Compare and contrast skills used to participate effectively in meetings and online meetings.

### **2.F Describe the functions of business finance.**

- 2.F.01c List typical ways a business obtains capital.
- 2.F.02c Describe the importance of accounting in a business.
- 2.F.03c Describe key implications for a company which grants credit.
- 2.F.04c Describe how a company estimates and bids for a contract.
- 2.F.05c Describe how paycheck deductions affect a worker.

- 2.F.06c Describe the importance of cost containment in a company.
- 2.F.07c List advantages/disadvantages of hourly and salaried pay schemes.
- 2.F.08c Describe appropriate cash handling practices in a business.

**2.G Demonstrate project management skills.**

- 2.G.01c Define scope of work to achieve individual and group goals.
- 2.G.02c Identify stakeholders and decision makers.
- 2.G.03c Identify escalation procedures.
- 2.G.04c Develop work breakdown structures.
- 2.G.05c Evaluate project requirements.
- 2.G.06c Identify required resources and budget.
- 2.G.07c Estimate time requirements.
- 2.G.08c Develop initial project management flow chart.
- 2.G.09c Identify interdependencies within a project management plan.
- 2.G.10c Identify and track critical milestones.
- 2.G.11c Evaluate risks and prepare contingency plan.
- 2.G.12c Participate in project phase review and report project status.
- 2.G.13c Identify project management software.
- 2.G.14c Develop method of evaluation.
- 2.G.15c Formulate a task strategy.
- 2.G.16c Prioritize tasks according to customer needs.
- 2.G.17c Devise plan of action.

**2.H Exhibit ethical conduct in business negotiations or operations.**

- 2.H.01c Explain difference between ethical values, business practice, and legal responsibility.
- 2.H.02c Explain the distinctions between both personal and professional conduct.
- 2.H.03c Identify strategies for improving professional conduct in specific business situations.

**2.I Use word processing software to produce documents (text and paragraphs).**

- 2.I.01 Proofread, edit, and format text within a document.
- 2.I.02 Check writing for grammar, spelling and usage errors using resource tools, e.g., thesaurus, dictionary, etc.
- 2.I.03 Create, modify, and import objects, graphics, and charts in a document.
- 2.I.04 Insert and edit headers and footers, set margins, and define page orientation.
- 2.I.05 Prepare and print envelopes and labels.
- 2.I.06 Create and manage mail merge.
- 2.I.07 Create and modify tables.
- 2.I.08 Format business documents with columns, bullets, and borders.
- 2.I.09 Import, export, and link documents to and from other applications (including e-mail attachments).

**Performance Example:**

1. Student will complete an office simulation to include: a business letter, memorandum, report with table, mail merge, envelopes and labels.

**2.J Use word processing software to produce documents (format documents).**

- 2.J.01 Replace text, formats, special characters, and nonprinting elements using advanced techniques.
- 2.J.02 Outline, bullet, and number lists using advanced techniques.

- 2.J.03 Publish a word processing document as a web page.
- 2.J.04 Align text vertically and horizontally.
- 2.J.05 Create and apply style formatting.
- 2.J.06 Apply character effects.
- 2.J.07 Set character, line, paragraph spacing, and indentation options.
- 2.J.08 Set, delete, and modify tabs.
- 2.J.09 Sort lists, paragraphs, and tables.
- 2.J.10 Track changes using advanced proofreading tools.
- 2.J.11 Apply borders and shading.

**2.K Use word processing software to produce documents (design).**

- 2.K.01 Design, create, modify a document using newspaper columns.
- 2.K.02 Create sections with formatting that differs from other sections.
- 2.K.03 Create a table of contents, index, and table of figures/authorities using automated functions.
- 2.K.04 Create, apply, and edit macros.
- 2.K.05 Create, save, modify, and use on-line forms.

**2.L Use word processing software to produce tables, graphics, objects and charts.**

- 2.L.01 Create, format, and modify tables.
- 2.L.02 Enter, edit, and sort data.
- 2.L.03 Perform calculations in a table.
- 2.L.04 Add graphics to document using drawing feature.
- 2.L.05 Insert, position and resize graphics, objects, and charts.
- 2.L.06 Group and ungroup graphics to delete, add, or modify elements.
- 2.L.07 Place graphics into the document from different storage media and sources.
- 2.L.08 Align text with graphics and charts using advanced features.
- 2.L.09 Link and embed data and objects between applications.

**2.M Create and manage a mail merge using word processing software.**

- 2.M.01 Design or modify a document for mail merge.
- 2.M.02 Design a database to be used for merge.
- 2.M.03 Merge letters, reports, labels, envelopes, or catalogs with varying data sources.
- 2.M.04 Sort and query records within a data source.
- 2.M.05 Modify database source structure.

**Performance Example:**

1. Prepare conference materials to include name badges, participant lists and personalized acceptance letters/envelopes.

**2.N Define and demonstrate the fundamental functions of a spreadsheet.**

- 2.N.01 Define spreadsheet terminology.
- 2.N.02 Identify and locate cells, columns, and rows.
- 2.N.03 Format cells, rows, and columns.
- 2.N.04 Enter, edit, and sort data.
- 2.N.05 Demonstrate the advanced use of page setup and printing features.
- 2.N.06 Create, edit, and save a worksheet.
- 2.N.07 Perform basic functions such as average, sum, count, min/max.
- 2.N.08 Create and use hyperlinks.
- 2.N.09 Import, export, and link data to and from other applications.
- 2.N.10 Create, edit, print, and save a chart.

- 2.N.11 Insert, move, and delete an object.
- 2.N.12 Link multiple worksheets within a workbook.

**Performance Example:**

1. Create a workbook using basic formulas and charts to solve a budget simulation.

**2.O Format a spreadsheet.**

- 2.O.01 Format and align data, columns and rows.
- 2.O.02 Create, apply, and edit styles.
- 2.O.03 Apply predefined styles.
- 2.O.04 Paste formulas, values, formats, and links.
- 2.O.05 Customize and personalize worksheets using clip art, drawing, and objects.
- 2.O.06 Demonstrate the advanced use of conditional formatting.

**2.P Demonstrate how to use formulas, functions, printing features of a spreadsheet.**

- 2.P.01 Create, copy, edit, and apply a formula.
- 2.P.02 Calculate absolute and relative references.
- 2.P.03 Calculate basic functions and basic financial functions (payment, future value).
- 2.P.04 Demonstrate the advanced use of the lookup, reference and logical functions.
- 2.P.05 Preview and print selections, worksheets, and workbooks.
- 2.P.06 Change page formatting, orientation, and scaling.
- 2.P.07 Create and edit headers/footers.
- 2.P.08 Set print options.

**2.Q Use advanced features to create and manage workbooks, charts and lists.**

- 2.Q.01 Create, edit and save a workbook.
- 2.Q.02 Create multiple worksheets within a workbook.
- 2.Q.03 Link and embed data between worksheets.
- 2.Q.04 Perform OLE (Object Linking and Embedding) functions with external sources.
- 2.Q.05 Select the data and perimeters to chart.
- 2.Q.06 Edit and format chart.
- 2.Q.07 Export chart to external document.
- 2.Q.08 Define list fields.
- 2.Q.09 Enter data using a data form.
- 2.Q.10 Demonstrate the advanced use of data validation.
- 2.Q.11 Sort and subtotal a list.
- 2.Q.12 Modify records.
- 2.Q.13 Apply filter functions.
- 2.Q.14 Demonstrate proper use of noncontiguous cells and ranges.
- 2.Q.15 Add and edit comments.
- 2.Q.16 Demonstrate how to protect cells.
- 2.Q.17 Add macros and pivot tables.
- 2.Q.18 Import from and export to text files.
- 2.Q.19 Import data from a web page.

**Performance Example:**

1. Develop a budget for a specified project
2. Create quarterly sales worksheets and charts and link to an annual sales report worksheet within a workbook.

3. Enter and edit data from a fundraising project and determine totals, subtotals and filtered lists.

**2.R Demonstrate how to create and utilize a database, tables and records, and reports.**

- 2.R.01 Describe the purpose and uses of a database and its components.
- 2.R.02 Create and modify tables, forms and reports.
- 2.R.03 Integrate a database with other software applications.
- 2.R.04 Create a table using a table wizard.
- 2.R.05 Build, modify and maintain data in tables.
- 2.R.06 Set primary keys.
- 2.R.07 Modify field properties.
- 2.R.08 Demonstrate the advanced use of multiple data types.
- 2.R.09 Demonstrate the advanced use of input and look up features.
- 2.R.10 Build and modify forms.
- 2.R.11 Create custom forms using controls.
- 2.R.12 Modify format properties of controls (font, style, color, etc.).
- 2.R.13 Create and organize records.
- 2.R.14 Enter, modify, delete data into datasheet view of table.
- 2.R.15 Enter, modify, delete data using form view.
- 2.R.16 Apply filters and sorts.
- 2.R.17 Specify criteria and run a query.
- 2.R.18 Create calculated fields in a query.
- 2.R.19 Establish relationships between tables.
- 2.R.20 Create and modify reports.
- 2.R.21 Create reports using defaults.
- 2.R.22 Create custom reports.
- 2.R.23 Modify format properties (font, style, color).
- 2.R.24 Export reports.
- 2.R.25 Integrate a database with other applications.

**Performance Example:**

1. Develop a membership database and create queries and reports to track current membership, dues and produce contract lists.
2. Using a business scenario, design and utilize a database to manage product or client information.
3. Use forms, queries and reports to enter and extract information based on a specific business need.

**2.S Demonstrate advanced techniques used to create, modify, and display presentation graphics.**

- 2.S.01 Create a presentation.
- 2.S.02 Navigate among different views.
- 2.S.03 Customize and modify a presentation.
- 2.S.04 Create, modify, and import objects, graphics, and charts in a presentation.
- 2.S.05 Create outputs in various formats.
- 2.S.06 Deliver a presentation.
- 2.S.07 Create a slide show using wizards and templates.
- 2.S.08 Create masters to maintain consistency.
- 2.S.09 Insert graphics, objects and tables.
- 2.S.10 Customize design layout.
- 2.S.11 Format paragraphs.

- 2.S.12 Use build techniques, transitions, and custom animations.
- 2.S.13 Delete, copy, and move slides within and among presentations.
- 2.S.14 Change a slide layout.
- 2.S.15 Use the search and replace feature.
- 2.S.16 Move, copy, size, and delete paragraphs.
- 2.S.17 Create and modify headers and footers.
- 2.S.18 Set, modify, and delete tabs.
- 2.S.19 Link and embed data between applications.
- 2.S.20 Create and edit action buttons and hyperlinks.

**Performance Example:**

1. Create a presentation on a business topic based on the information given in a business report or an Internet site.

**2.T Demonstrate how to use advanced multimedia elements to create and deliver a presentation.**

- 2.T.01 Demonstrate the advanced use of the scale and size feature.
- 2.T.02 Demonstrate the advanced use of, crop, rotate, and fill features.
- 2.T.03 Create text boxes and wrap around objects.
- 2.T.04 Create tables within a presentation.
- 2.T.05 Add, build, and modify an organizational chart.
- 2.T.06 Add music and narrations.
- 2.T.07 Print slides, handouts, and speaker notes.
- 2.T.08 Print slides as an outline.
- 2.T.09 Set and rehearse timings on a presentation to automatically advance.
- 2.T.10 Convert a presentation to HTML and preview as a web page for viewing on all types of computers.
- 2.T.11 Operate audio visual equipment.

**Performance Example:**

1. Create a professional resume portfolio using PowerPoint tools.

**2.U Demonstrate correct keyboarding technique.**

- 2.U.01 Develop proper input techniques for the alphabetic keyboard.
- 2.U.02 Enter and manipulate numeric data using the touch method on the numeric keypad.
- 2.U.03 Keyboard for five minutes at 50 words per minute with three or fewer errors on a timed writing that is at least 1/5 in syllabic intensity.

**Performance Example:**

1. Use proper keyboarding technique with a minimum speed of 30 wpm and 95% accuracy on a three-minute timed writing; data entry of 150 kpm/cpm and 95% accuracy.
2. Interview an administrative office worker by e-mail or in person to determine (1) what skills a person must possess in order to be successful in this position; (2) what changes have taken place in this field within the last five years; (3) what are the desirable/undesirable features of this position; and (4) what educational preparation is necessary for a person in this position? Prepare a two-page summary of your findings.
3. As part of the business scenario, format letters, memos and emails to clients using proper style and language.

## **2.V Identify and demonstrate office skills necessary to performing in a business office.**

- 2.V.01 Identify the responsibilities for administrative and clerical support occupations.
- 2.V.02 Identify U.S. postal mail classifications and services.
- 2.V.03 Explain services provided by private mail services.
- 2.V.04 Demonstrate the proper techniques and procedures of transmitting information using various telecommunications technologies and mail systems.
- 2.V.05 Format business letters and memorandums.
- 2.V.06 Format e-mail correspondence.
- 2.V.07 Format business reports and related documents.
- 2.V.08 Format tables, graphs, and charts.
- 2.V.09 Plan business travel using appropriate procedures.
- 2.V.10 Prepare appropriate travel documents including an itinerary.
- 2.V.11 Summarize the importance of travel etiquette, safety and resources available.
- 2.V.12 Identify the components of a paper filing system.
- 2.V.13 Describe alphabetic and numeric filing systems.
- 2.V.14 Index records using coding techniques.
- 2.V.15 Illustrate cross-referencing techniques.
- 2.V.16 Apply efficient filing procedures.
- 2.V.17 Describe storage and transfer plans for inactive files.
- 2.V.18 Identify duplicating machine features and operating procedures.
- 2.V.19 Set priorities and plan daily activities.
- 2.V.20 Manage time effectively.
- 2.V.21 Enter and manage data using electronic handheld devices as well as paper planner/organizer.
- 2.V.22 Schedule appointments appropriately.
- 2.V.23 Effectively manage and set-up workspace.
- 2.V.24 Relate ergonomics to individual health and well-being.
- 2.V.25 Describe expectations related to work appearance and manners.
- 2.V.26 Explain attitudes that contribute to the success of an organization.
- 2.V.27 Use appropriate electronic etiquette (voice mail, cellular phones, e-mail, speakerphones).

### **Performance Example:**

1. Interview an administrative office worker by e-mail or in person to determine (1) what skills a person must possess in order to be successful in this position; (2) what changes have taken place in this field within the last five years; (3) what are the desirable/undesirable features of this position; and (4) what educational preparation is necessary for a person in this position? Prepare a two-page summary of your findings.
2. As part of the business scenario, format letters, memos and emails to clients using proper style and language.
3. List various mail services offered by the U.S. postal service.
4. Prepare a complete itinerary for a five-day business trip to a major U.S. city to include plane flights, hotels, ground transportation, restaurants, and entertainment using online resources. Prepare an accompanying memorandum explaining why you chose the particular flight and hotel. The memorandum should also include a variety of restaurant possibilities and entertainment for four.
5. Code twenty pieces of business correspondence according to the ARMA alphabetic filing rules and prepare the necessary cross-reference sheets.

6. Place the letters and cross-reference sheets in correct order for an alphabetic filing system.
7. Continually demonstrate appropriate appearance, decorum, and etiquette in working relationships with the instructor and classmates.
8. Complete simulated office assignments that involve setting priorities and scheduling appointments.

**2.W Plan, produce and manage an office website.**

- 2.W.01 Plan a website.
- 2.W.02 Define the target audience and purpose of the web page.
- 2.W.03 Create a storyboard.
- 2.W.04 Demonstrate information, interaction, and presentation design concepts.
- 2.W.05 Analyze site effectiveness.
- 2.W.06 Produce a website.
- 2.W.07 Explain the basic syntax/control of HTML/XHTML.
- 2.W.08 List and properly code common document tags.
- 2.W.09 Properly code list tags (e.g. ordered, unordered, definition lists).
- 2.W.10 Demonstrate the advanced use of text and formatting styles tags.
- 2.W.11 Insert a table.
- 2.W.12 Define and properly use GIF and JPEG image graphics.
- 2.W.13 Create links to other pages and websites.
- 2.W.14 Demonstrate ways to test an HTML document.
- 2.W.15 Discuss ways to manage a website.
- 2.W.16 Explain impact of website design on information accessibility.
- 2.W.17 Demonstrate how to upload a web page to a web server.
- 2.W.18 Identify security concerns.
- 2.W.19 Edit and update a website.

**Performance Example:**

1. Design a three-page website for an event or activity taking place in your school or community.

**2.X Explain fundamental financial concepts and applications.**

- 2.X.01 Compare and contrast the services offered by a bank, credit union, mortgage company, and loan company.
- 2.X.02 Describe income, sales, property, and excise tax.
- 2.X.03 Explain the forms and purposes of life, property, health, and auto insurance.
- 2.X.04 Track the performance of a currently traded stock.
- 2.X.05 Explain the function of a credit bureau.
- 2.X.06 Calculate the cost of a mortgage, car loan, and personal loan.
- 2.X.07 Open, maintain, and reconcile a personal checking account.
- 2.X.08 Research the benefits of a savings account, money market, certificate of deposit, U.S. Savings Bond and mutual fund.
- 2.X.09 Calculate the cost of a credit card or installment plan purchase.
- 2.X.10 Prepare a personal budget.
- 2.X.11 Compare and contrast the benefits of leasing vs. buying.

**Performance Example:**

1. Prepare and present a slide show on one of the following topics: current trends in banking, how the stock market works, or the importance of a credit rating.

**2.Y Perform fundamental accounting and bookkeeping functions.**

- 2.Y.01 Define terms related to accounting (e.g. debts, credits, balance sheets, etc.).
- 2.Y.02 Define generally accepted auditing procedures and standards.
- 2.Y.03 Perform basic accounts payable and accounts receivable functions and calculations.
- 2.Y.04 Create and manage a balance sheet.
- 2.Y.05 Demonstrate fundamental accounting principles.
- 2.Y.06 Create and organize ledgers, journals, and financial statements.
- 2.Y.07 Compare and contrast methods of tracking cash and inventory.
- 2.Y.08 Analyze data relevant for taxation purposes.
- 2.Y.09 Calculate an amortization table.
- 2.Y.10 Calculate common depreciation tables and values for capital and equipment.

## **Strand 3: Embedded Academic Knowledge and Skills**

### **3.A English Language Arts**

<b>VTE #</b>	<b>Acad #</b>	<b>Standard</b>	<b>Grade</b>	<b>Topic</b>
3.A.01c	19.21	Write reports based on research that include quotations, footnotes or endnotes, and a bibliography.	Pre-9th	Composition
3.A.02c	24.4	Apply steps for obtaining information from a variety of sources, organizing information, documenting sources, and presenting research in individual projects:	Pre-9th	Composition
3.A.03c	2.4	Integrate relevant information gathered from group discussions and interviews for reports.	Pre-9th	Language
3.A.04c	13.19	Identify and use knowledge of common graphic features (charts, maps, diagrams).	Pre-9th	Reading
3.A.05c	20.5	Use different levels of formality, style, and tone when composing for different audiences.	9-10	Composition
3.A.06c	24.5	Formulate open-ended research questions and apply steps for obtaining and evaluating information from a variety of sources, organizing information, documenting sources in a consistent and standard format, and presenting research.	9-10	Composition
3.A.07c	1.5	Identify and practice techniques such as setting time limits for speakers and deadlines for decision-making to improve productivity of group discussions.	9-10	Language
3.A.08c	2.5	Summarize in a coherent and organized way information and ideas learned from a focused discussion.	9-10	Language
3.A.09c	26.5	Analyze visual or aural techniques used in a media message for a particular audience and evaluate their effectiveness.	9-10	Media
3.A.10c	19.27	Write well-organized research papers that prove a thesis statement using logical organization, effective supporting evidence, and variety in sentence structure.	11-12	Composition
3.A.11c	22.10	Use all conventions of standard English when writing and editing.	11-12	Composition
3.A.12c	24.6	Formulate original, open-ended questions to explore a topic of interest, design and carry out research, and evaluate the quality of the research paper in terms of the adequacy of its questions, materials, approach, and documentation of sources.	11-12	Composition

VTE #	Acad #	Standard	Grade	Topic
3.A.13c	3.17	Deliver formal presentations for particular audiences using clear enunciation and appropriate organization, gestures, tone, and vocabulary.	11-12	Language
3.A.14c	4.27	Use general dictionaries, specialized dictionaries, thesauruses, histories of language, books of quotations, and other related references as needed.	11-12	Language
3.A.15c		Select and utilize a variety of reading strategies based on task at hand (skim reading, technical documentation, accounts, editing tasks, analysis and evaluation tasks).		Voc
3.A.16c		Write formal communication documents using correct format and language rules to convey a message, announcement or directive.		Voc
3.A.17c		Identify and use language features for data and document management. (i.e. file management, customer account management, etc).		Voc

### 3.B Mathematics

VTE #	Acad #	Standard	Grade	Topic
3.B.01c	8.M.2	Given the formulas, convert from one system of measurement to another. Use technology as appropriate.	Pre-9th	Measure
3.B.02c	8.N.1	Compare, order, estimate, and translate among integers, fractions and mixed numbers (i.e., rational numbers), decimals, and percents.	Pre-9th	Numbers
3.B.03c	10.D.1	Select, create, and interpret an appropriate graphical representation (e.g., scatterplot, table, stem-and-leaf plots, box-and-whisker plots, circle graph, line graph, and line plot) for a set of data and use appropriate statistics (e.g., mean, median, range, and mode) to communicate information about the data. Use these notions to compare different sets of data.	9-10	Data Analysis, Statistics and Probability
3.B.04c	10.P.8	Solve everyday problems that can be modeled using systems of linear equations or inequalities. Apply algebraic and graphical methods to the solution. Use technology when appropriate. Include mixture, rate, and work problems.	9-10	Patterns, relations, algebra

## **Strand 4: Employability Knowledge and Skills**

### **4.A Develop employability skills to secure and keep employment in chosen field.**

- 4.A.01a Evaluate industries, organizations, and careers based on multiple sources of research and information.
- 4.A.02a Assess interest areas to determine potential career pathways, including career ladders.
- 4.A.03a Develop a career plan with alternatives.
- 4.A.04a Complete job applications and related employment documents (e.g. W-4).
- 4.A.05a Create professional cover letters, resumes, and portfolios in a variety of formats (print and electronic).
- 4.A.06a Apply job search skills to seek, evaluate, apply for, and accept employment.
- 4.A.07a Demonstrate good interviewing skills.
- 4.A.08a Demonstrate employability skills needed to get and keep a job.
- 4.A.09a Assess alternative occupational choices (e.g. working conditions, benefits, and opportunities to change).

#### **Performance Examples:**

1. Research positions open within a variety of companies and compare/contrast their descriptions, duties, and expectations.
2. Prepare responses to standard interview questions.
3. Participate in a mock-interview with industry professionals.

### **4.B Communicate in multiple modes to address needs within the career and technical field.**

- 4.B.01a Apply strategies to enhance effectiveness of all types of communications in the workplace.
- 4.B.02a Apply reading skills and strategies to work-related documents.
- 4.B.03a Locate information from books, journals, magazines, and the Internet.
- 4.B.04a Apply basic writing skills to work-related communication.
- 4.B.05a Write work-related materials.
- 4.B.06a Explain information presented graphically.
- 4.B.07a Use writing/publishing/presentation applications.
- 4.B.08a Apply basic skills for work-related oral communication.
- 4.B.09a Explain proper telephone etiquette and skills.
- 4.B.10a Lead formal and informal group discussions.
- 4.B.11a Demonstrate effective negotiation and conflict management.
- 4.B.12a Apply active listening skills to obtain and clarify information.
- 4.B.13a Communicate with others in a diverse workforce.

#### **Performance Examples:**

1. Review a professional journal; choose one article to summarize.
2. Call the publisher for free products in journal.
3. Develop an oral presentation regarding an article in a journal.
4. Summarize trends presented in a graph.

### **4.C Solve problems using critical thinking.**

- 4.C.01a Demonstrate skills used to define and analyze a given problem.
- 4.C.02a Explain the importance and dynamics of individual and teamwork approaches of problem solving.
- 4.C.03a Describe methods of researching and validating reliable information relevant to the problem.

- 4.C.04a Explain strategies used to formulate ideas, proposals and solutions to problems.
- 4.C.05a Select potential solutions based on reasoned criteria.
- 4.C.06a Implement and evaluate solution(s).
  
- 4.D **Demonstrate positive work behaviors.**
  - 4.D.01a Identify time management and task prioritization skills.
  - 4.D.02a Explain the importance of following workplace etiquette/protocol.
  - 4.D.03a Demonstrate willingness to learn and further develop skills.
  - 4.D.04a Demonstrate self-management skills.
  - 4.D.05a List causes of stress and effective stress management techniques.
  - 4.D.06a Describe the importance of having a positive attitude and techniques that boost morale.
  - 4.D.07a Show initiative by coming up with unique solutions and taking on extra responsibilities.
  - 4.D.08a Explain the importance of setting goals and demonstrate the ability to set, reach, and evaluate goals.
  - 4.D.09a Explain the importance of taking pride in work accomplished and extrinsic and intrinsic motivators that can be used to increase pride.
  - 4.D.10a Value the importance of professionalism, including reliability, honesty, responsibility, and ethics.
  - 4.D.11a Demonstrate a respect for diversity and its benefit to the workplace.

## **Strand 5: Management and Entrepreneurship Knowledge and Skills**

### **5.A Analyze basic business practices required to start and run a company/organization.**

- 5.A.01a Define entrepreneurship.
- 5.A.02a Describe the relationship between suppliers, producers, and consumers.
- 5.A.03a Compare and contrast types of businesses, including sole proprietorships, small businesses, companies, corporations, governmental agencies, and non-profit organizations.
- 5.A.04a Describe practices that ensure quality customer service.
- 5.A.05a Explain the value of competition in business/field.

#### **Performance Examples:**

1. Prepare a business plan for a new company in your community.
2. Participate in a discussion with members of a local small-business incubator or chamber of commerce, identifying opportunities and summarizing best practices of new companies.
3. Create an equipment list, with costs, of equipment required for doing specific tasks.
4. Identify local zoning and environmental laws that apply to businesses in your industry.

### **5.B Manage all resources related to a business/organization.**

- 5.B.01a Identify a company's/organization's chain of command and organizational structure.
- 5.B.02a Define and demonstrate leadership and teamwork skills.
- 5.B.03a Explain ways a company or organization can market itself, including choosing a name, designing logos and promotional materials, advertising, and the importance of word-of-mouth.
- 5.B.04a Identify methods to track inventory, productivity, income, expenses, and personnel.
- 5.B.05a Explain the importance of written operating procedures and policies.
- 5.B.06a Identify professional organizations and their benefits.
- 5.B.07a Explain methods to effectively run a meeting.

#### **Performance Examples:**

1. Create a plan to keep track of tools and supplies in your classroom/shop.
2. Work as a team to complete a project, including running and participating in problem-solving meetings.
3. Contact a relevant professional organization and request information about its benefits, membership requirements, and costs.
4. Clip print advertisements from local companies, identifying common themes and contrasting different styles.

### **5.C Describe methods for managing, organizing, retrieving and reporting financial data.**

- 5.C.01a Explain the role of small businesses in the economy.
- 5.C.02a Extract and extrapolate data from financial documents, such as a pay-stub, budget, tax statement, and financial report.

#### **Performance Examples:**

1. Create and follow a budget for an in-class project.
2. Identify equipment in your shop/lab that are considered as capital.

3. From a pay-stub, determine gross salary, deductions, and net pay for a calendar year.
4. Create a rate card or other list of standardized costs for services provided, based on research of local rates and practices.

**5.D Apply labor and civil rights law and guidelines to business practice and decisions.**

- 5.D.01a List federal and state mandated employee rights.
- 5.D.02a Describe proper working conditions for your industry.
- 5.D.03a Explain the role of labor organizations.
- 5.D.04a Discuss the importance of diversity and list methods of encouraging diversity in the workplace.
- 5.D.05a Describe standard forms of employment contracts applicable to your industry.
- 5.D.06a State the current minimum wage, as well as wages for common jobs found within the field.
- 5.D.07a List opportunities for continual professional development.

**Performance Examples:**

1. Participate in and summarize a discussion with a member of a labor organization.
2. Participate in and summarize a discussion with a member of a civil rights organization.
3. While participating in a group project, write and follow job descriptions for each member of the team.
4. Evaluate a shop/lab in terms of safety, ergonomics, and workflow.

**5.E Evaluate the effects of community relations on companies and the industry.**

- 5.E.01a Describe the role that the industry/organization plays in different communities.
- 5.E.02a Describe the role that community interests play in a company's/organization's decision-making process.

**Performance Example:**

1. Participate in a service project or community-centered event.

**5.F Apply legal requirements and ethical considerations to business practice and decisions.**

- 5.F.01a Identify laws that regulate businesses/organizations in your field.
- 5.F.02a Define the requirements for and protections given by copyright and trademark law.
- 5.F.03a Define the impact of the Americans with Disabilities Act and other civil rights legislation on your business/organization, employees, and customers.
- 5.F.04a Define ethical business practices for your field.
- 5.F.05a Identify trade-specific practices that support clean energy technologies and encourage environmental sustainability.

**Performance Examples:**

1. Research the ethical guidelines set forth by a professional organization related to your industry and participate in a debate over how to apply these guidelines to a variety of situations.
2. Create a portfolio of a variety of completed contracts and their uses.
3. Participate in and summarize a discussion with a lawyer, consumer advocate, or other legal professional.
4. Create a quick reference outline listing legal topics and related resources.

## **Strand 6: Technological Knowledge and Skills**

- 6.A Demonstrate proficiency in the use of computers and applications as well as an understanding of concepts underlying hardware, software, and connectivity.**
- 6.A.01a Select and utilize the appropriate technology to solve a problem or complete a task.
  - 6.A.02a Demonstrate file management skills (e.g., install new software, compress and expand files as needed, download files as appropriate).
  - 6.A.03a Differentiate between different operating systems and demonstrate use of at least one to open and switch between programs and files.
  - 6.A.04a Identify and demonstrate resolutions to simple hardware and software problems as they occur (e.g., frozen screen, disk error, printing problems).
  - 6.A.05a Save, retrieve, load, format, and import data into, and export a variety of electronic documents (word processing, spreadsheet, database, AND desktop publishing).
  - 6.A.06a Demonstrate the proper use of a variety of external peripherals and how they connect to a computer.
  - 6.A.07a Illustrate methods of selecting and using search engines.
  - 6.A.08a Send, receive, and manage electronic correspondence and files, in accordance with school policy.
  - 6.A.09a Demonstrate proper use of electronic proofreading tools and explain reasons why these shouldn't be relied upon solely.

**Performance Example:**

1. In the development of work-based projects, students demonstrate computer skills inherent in the word processing techniques used, the organization of data, use of photographic representation, research projects, and other relevant project based activities.

- 6.B Demonstrate responsible use of technology and an understanding of ethics and safety issues in using electronic media.**
- 6.B.01a Identify ways in which technology is used in the workplace and in society.
  - 6.B.02a Summarize the rights and responsibilities of the school's Acceptable Use Policy.
  - 6.B.03a Explain laws restricting use of copyrighted materials on the Internet.
  - 6.B.04a Discuss the concerns about electronic communications, privacy and security, including protection from spyware and viruses.

**Performance Example:**

1. Describe how computers are used to increase efficiency, accuracy, and professionalism in the industry.

- 6.C Demonstrate ability to use technology for research, problem solving, and communication.**
- 6.C.01a Locate, evaluate, collect, and process information from a variety of electronic sources.
  - 6.C.02a Demonstrate the use of telecommunications and other media to interact or collaborate with peers, experts, and other audiences.
  - 6.C.03a Demonstrate the use of appropriate electronic sources to conduct research (e.g., Web sites, online periodical databases, and online catalogs).
  - 6.C.04a Demonstrate proper style (with correct citations) when integrating electronic research results into a research project.

- 6.C.05a Collect, organize, analyze, and graphically present data using the most appropriate tools.
- 6.C.06a Present information, ideas, and results of work using any of a variety of communications technologies (e.g., multimedia presentations, Web pages, videotapes, desktop-published documents).
- 6.C.07a Identify capabilities of technology resources and describe how they can be used for lifelong learning.
- 6.C.08a Demonstrate the proper use of electronic tools and office communications equipment (telephone, fax, copier, etc).

**Performance Example:**

1. Student is able to effectively use various technologies in the workplace.