Massachusetts Career Technical Education

Marketing Framework

2014

DESE is in the process of updating all CTE Frameworks. This framework was adopted in 2014. More information about the process to update frameworks will be provided in DESE’s CCTE Newsletter.

# [Strand 2: Technical Knowledge and Skills](#_bookmark0)

###### Marketing Safety Health Knowledge and Skills

* + 1. Utilize Ergonomic Safety.
			1. Define Ergonomics.
			2. Explain carpel tunnel syndrome and related repetitive strain injury and list exercises to reduce such injury.
			3. Describe causes and remedies for eyestrain.
		2. Performance Example:
			- Students will define and demonstrate hand and body exercises designed to eliminate static posture.

###### Fundamentals of Customer Relations

* + 1. Develop product/service knowledge.
			1. Participate in available product-relevant training through variety of sources.
			2. Describe relevant features and benefits of product/service appropriate to specific customer needs.
			3. Describe comparable/competitor’s products and services.
		2. Performance Example:
			- Students will prepare a features-and-benefits chart for a product of student choice, and describe the customer’s profile; present the chart along with a picture and profile of the customer to the class.
		3. Assess customer needs.
			1. Approach the customer in a manner appropriate to the situation and/or industry.
			2. Solicit information on intended use of product/service.
			3. Identify customer objectives, concerns and problems as they pertain to the product/service.

2.B.02 Performance Example:

* Students will write a script for a skit set in a retail store that has an employee and a customer who is looking to make a purchase. Employee must assess customer needs and address concerns of the customer. Students will then act out the skit in front of class.
	+ 1. Educate the customer.
			1. Provide accurate information about service policies (return policies, warranties, guarantees, service plans, layaways, rain checks).
			2. Provide follow-up plan to customer, if necessary.
			3. Provide timely follow up to provide ongoing customer support.

2.B.03 Performance Example:

* Students will write a return and exchange policy for a school store or fictitious business.

###### Fundamentals of Marketing

* + 1. Explain the role and function of business marketing to facilitate economic exchanges with customers.
			1. Define marketing.
			2. Explain the seven functions of marketing.
			3. Explain the marketing concept.
			4. Analyze the benefits of marketing.
			5. Apply the concept of a utility.
			6. Describe the concept of market.
			7. Differentiate between consumer and industrial markets.
			8. Describe and examine market share.
			9. Define target market.
			10. List the components of the marketing mix.
			11. Determine the marketing mix for a product/service.
		2. Performance Example:
			- To show marketing is all around us, students will use mail order catalogs to describe the variety of products offered, including pointing out that these are all examples of marketing.
		3. Summarize the important components of a Marketing Plan.
			1. Conduct a Strength, Weaknesses, Opportunities, Threats (SWOT) analysis.
			2. List and describe key areas of an internal company analysis.
			3. Identify the factors in an environmental scan.
			4. Explain the basic elements of all Marketing Plans.

2.C.02 Performance Example:

* Students will develop a marketing plan for a retail product or service.
	+ 1. Identify and analyze markets.
			1. Explain the concept of market segmentation.
			2. Differentiate between demographics, geographics, and psychographics.
			3. Create a customer profile.
			4. Create and analyze a target market for a product/service.
			5. Determine when mass marketing versus market segmentation is justified.

2.C.03 Performance Example:

* Students will select an advertisement and provide a customer profile for the specific ad.

###### Financial Analysis

* + 1. Explain the fundamental principles of monetary exchanges.
			1. Describe appropriate cash handling practices in a business.
			2. Perform entry-level record keeping/accounting records.
			3. Handle cash and monetary instruments.
		2. Performance Example:
			- Students will participate in a simulation that demonstrates cash handling methods including making change from customer cash purchases.
		3. Analyze financial needs and goals to determine financial requirements.
			1. Explain the goals of pricing.
			2. Differentiate between market share and market position.
			3. Analyze demand elasticity and supply and demand theory.
			4. Describe options for obtaining capital to start up, maintain or expand a business.
			5. Describe key implications for establishing and managing credit as both borrower and lender in business operations.

2.D.02 Performance Example:

* Students will use a spreadsheet program to create a chart that depicts supply and demand curves for a product of their choice and select equilibrium point to determine price.
	+ 1. Manage personal finances to achieve financial goals.
			1. Calculate net pay.
			2. List advantages and disadvantages of hourly and salaried pay options.
			3. Analyze payroll calculations.
			4. Distinguish between simple and compound interest.
			5. Develop a personal financial statement.
			6. Compare and contrast investment strategies to set and achieve financial goals.
			7. Explain the purpose of financial documents.

2.D.03 Performance Example:

* Students will create a personal budget.
	+ 1. Manage financial resources to ensure solvency.
			1. Describe and apply the fundamentals of accounting.
			2. Examine the importance of accounting in a business.
			3. Estimate business income and expenses.
			4. Prepare standard accounting reports used in business operations.
			5. Prepare and maintain financial records.
			6. Describe the importance of cost containment in a company.
			7. Explain how Return on Investment (ROI) affects a marketing plan.

2.D.04 Performance Example:

* Students will prepare a profit and loss statement on a business based on financial data provided.

###### Business Operations

* + 1. Develop policies and procedures to protect workplace security.
			1. Explain the nature and scope of risk management.
			2. Describe various ways businesses can manage risk.
		2. Performance Example:
			- Students will review employee manuals or attend guest speaker presentations to prepare a workplace security policy.
		3. Utilize project-management skills to improve workflow and minimize costs.
			1. Explain how horizontally organized companies differ from vertically organized companies.
			2. Define scope of work to achieve individual and group goals.
			3. Identify stakeholders and decision makers.
			4. Evaluate project requirements including resources and budget.
			5. Estimate time requirements.
			6. Evaluate risks and develop a contingency plan.
			7. Develop a method to evaluate and improve.

2.E.02 Performance Example:

* Students will determine project requirements including resources and budget for a school project or fundraiser.
	+ 1. Implement purchasing procedures to obtain business supplies, equipment and services.
			1. Describe purchasing in terms of products, quantities and timing of purchases (First In, First Out (FIFO)/Last In, First Out (LIFO)/Just-in-Time).
			2. Demonstrate ability to place orders/reorders.
			3. Explain how to purchase products and/or services from vendors, sales representatives and trade shows.
			4. Explain how purchasing differs between an industrial market and a consumer market.
			5. Describe the various internet purchasing methods.

2.E.03 Performance Examples:

* Students will complete a purchase requisition order form to order supplies, equipment or services.

###### Selling

* + 1. Demonstrate foundational knowledge of the principles of selling.
			1. Define selling.
			2. Explain the purpose and goals of the selling function.
			3. Describe the scope of the sales profession including setting sales goals, reaching quotas, commission versus salary pay, analysis of past performance and forecasting future sales.
			4. Define Maslow’s hierarchy of needs and explain its role in effective selling.
			5. Differentiate between emotional and rational buying motives.
			6. List the different types of selling situations.
			7. List the seven steps of a sale.
			8. Develop effective consultation methods to best determine needs and solutions.
			9. Identify and develop strategies to increase individual sales performance consistent with company sales goals.
		2. Performance Examples:
			- Students will research a variety of sales positions using traditional print classified ads or electronic job boards such as Monster.com and either:
				1. Develop a sales position job posting for a school store position.
				2. Develop a sales position job posting for a fictitious company.
				3. Develop a resume and cover letter for one of the above scenarios.
		3. Utilize available internal and external data to optimize sales.
			1. Develop prospecting methods to acquire new customers.
			2. Maximize existing relationships with existing customers.
			3. Maintain customer databases of both new and existing customers.

2.F.02 Performance Examples:

* Students will create a customer profile based on themselves as a consumer for a particular product of their choice, OR
* Students will develop five different customer profiles for five different (real or fictitious) products or services including geographical information and recent purchasing history.

###### Channel Management

* + 1. Demonstrate foundational knowledge of channel management.
			1. Explain the concept of channel of distribution.
			2. Compare channels of distribution for consumer and industrial products.
			3. Describe the nature and scope of physical distribution.
			4. Explain the effect of the internet on distribution planning.
		2. Performance Example:
			- Students will illustrate different channels of distribution for consumer or industrial markets.
		3. Manage channel activities to minimize costs and to determine distribution strategies.
			1. Identify transportation systems and services that move products from manufacturers to consumers.
			2. Demonstrate effective practices of receiving, handling and shipping merchandise.
			3. Explain the difference between storage and distribution of perishable and non-perishable goods.
			4. Demonstrate inventory management strategies.

2.G.02 Performance Example:

* Students will write a report telling how technology is being used to improve safety, transportation and fuel costs.

###### Promotion

* + 1. Demonstrate an understanding of the role of promotion in business and marketing.
			1. 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.
			2. Describe elements of a promotional mix.
			3. Identify both traditional and current technology-based promotional tools.
			4. Develop a cost-benefit analysis of a promotional plan.
		2. Performance Example:
			- Students will develop a cost-benefit analysis of a promotional plan for a small local business.
		3. Differentiate between paid and unpaid forms of promotional communications with targeted audiences.
			1. Explain the concept and purpose of advertising in the promotional mix.
			2. Identify the different types of advertising media.
			3. Describe the planning and selection of media.
			4. Explain the use of public relations activities to communicate with targeted audiences.
			5. Distinguish between public relations and publicity.

2.H.02 Performance Example:

* Students will study the Web sites of various advertising agencies, choose one, and write a paragraph or two describing the overall message the Web site sends to potential clients.

###### Marketing Information Management

* + 1. Demonstrate foundational knowledge of marketing information management.
			1. Describe the purpose of marketing research.
			2. Identify multiple methods of conducting marketing research.
			3. Identify primary and secondary data sources.
			4. Develop data collection methods to determine appropriateness for the research objective.
			5. Design a marketing research survey.
			6. Describe trends and limitations in marketing research.
			7. Identify procedures for gathering information using technology.
		2. Performance Example:
			- Students will review magazines to choose a product advertisement and identify methods of marketing research they would conduct to market products.
		3. Evaluate market research results.
			1. Provide research analysis reports and present findings.
			2. Interpret research results and forecast relevant market implications.

2.I.02 Performance Example:

* Students will create an online survey such as, Survey Monkey, and present research results in a classroom presentation.

###### Entrepreneurship

* + 1. Explain the role of business in a free enterprise system.
			1. Define entrepreneurship.
			2. List the characteristics and skills of an entrepreneur.
			3. Explain the disadvantages and advantages of being an entrepreneur.
			4. Compare and contrast forms of ownership.
			5. Define legal steps in establishing a business.
			6. Measure feasibility of a new business venture.
			7. Determine resources needed for a new business to contribute to its startup viability.
			8. Explain the importance of small business in various economies.
		2. Performance Example:
			- Students will choose a specific type of entrepreneurship, such as opening a web design company, and list both the specific skills and general attributes needed to succeed in this business.

###### Economics

* + 1. Explain the concept of an economy.
			1. Cite examples of various economic systems.
			2. List the factors of production.
			3. Explain the concept of scarcity.
			4. List the goals of a healthy economy.
			5. Explain how an economy is measured.
			6. Analyze the key phases of the business cycle.
		2. Performance Example:
			- Students will select a foreign country and compare its economic system and factors of production with that of the United States and present their findings in a multimedia presentation.
		3. Define the concept of international business.
			1. Explain the interdependence of nations.
			2. Examine balance of trade.
			3. Differentiate between the three types of trade barriers.
			4. List three significant trade agreements and alliances.
			5. Identify factors that affect international business.

2.K.02 Performance Examples:

* Students will examine the effects of international trade on the US and on the countries with whom the US trades and name the three biggest US exports and imports; OR
* Students will select a country of your choice and name their three biggest exports and imports.
	+ 1. Identify the role of business in society.
			1. Explain the characteristics of a free enterprise system.
			2. Explain the theory of supply and demand.
			3. Compare and contrast for-profit and non-profit organizations.
			4. Distinguish between the public and private sectors.
			5. Explain the role of government in a free enterprise system.
			6. Identify federal regulatory agencies and laws that protect consumers, investors and environment.
			7. Provide examples of the impact of government on business.
			8. Provide examples of business’s social responsibilities.
			9. Explain the nature of business ethics.

2.K.03.10 Demonstrate ethical behavior.

2.K.03 Performance Example:

* Students will identify one local municipal agency that regulates local businesses in their community.

###### Pricing

* + 1. Develop foundational knowledge of pricing in marketing.
			1. Distinguish between price and non-price competition.
			2. Define profit and markup.
			3. Distinguish between cost and selling price.
			4. Analyze cost of goods sold (COGS) role in pricing.
			5. Analyze economics of one unit’s role in pricing.
			6. Explain return on investment.
			7. Name three pricing methods used to establish a base price.
			8. Compare and contrast cost-oriented, demand-oriented and competition- oriented pricing methods.
			9. Explain legal considerations for pricing.
		2. Performance Example:
			- Students will identify a product and calculate the profit and markup.

###### Product/Service Management

* + 1. Demonstrate foundational knowledge of product/service management.
			1. Describe the steps in product planning.
			2. Identify the four stages of the product life cycle.
			3. Apply quality assurances to enhance product/service offerings.
			4. Explain the importance of warranties in product planning.
			5. Develop return and exchange policies appropriate for your business model.
		2. Performance Example:
			- Students will list the strategies used to manage a product during the declining stage of its life cycle.
		3. Employ product- mix strategies to meet profit goals.
			1. Explain how to develop, maintain and improve a product mix in a dynamic market.
			2. Position product/service and brand to acquire desired business image.
			3. Describe product positioning techniques.
			4. Explain how product-mix impacts market position.

2.M.02 Performance Example:

* Students will list strategies used to position a product in the marketplace and to give an example of each.

###### Communication Skills

* + 1. Apply effective skills in all domains of communication.
			1. Demonstrate effective verbal and nonverbal communication for appropriate audiences and settings.
			2. Exhibit effective listening skills.
			3. Employ awareness of cultural differences in communication.
			4. Explain how to organize and present your idea in speech and writing.
			5. Demonstrate professional communication etiquette using a variety of electronic formats.
			6. Exhibit knowledge of your audience, your purpose and your subject.
			7. Select and utilize the appropriate formats for professional business writing.
		2. Performance Example:
			- Using a word processing program, students will locate the template for an interoffice memorandum, describe the kinds of subject matter they are used to convey and type an interoffice memorandum with appropriate subject matter.

###### Accounting Practices and Procedures

* + 1. Explain changes that affect the accounting equation.
			1. Define and identify accounting terms related to business and changes that affect the accounting equation.
			2. Describe how transactions affect accounts in an accounting equation.
		2. Performance Example:
			- Students will classify accounts as assets, liabilities, or owner’s equity and demonstrate their relationships in the accounting equation.
		3. Analyze and record transactions into debit and credit parts.

2.O.02 Performance Examples:

* Students will utilize T accounts to analyze transactions showing which accounts are debited or credited.
	+ 1. Define debit and credit.
			1. Classify transactions into debit and credit parts.
			2. Explain how transactions to set up a business affect accounts.
			3. Analyze how transactions affect owner’s equity account.

2.O.03 Performance Example:

* Prove and rule a five-column journal and prove cash.
	+ 1. Journalize Transactions.
			1. Define and identify accounting terms related to journalizing transactions.
			2. Record transactions to set up a business in a five-column journal.
			3. Record transactions to buy insurance for cash and supplies in a five-column journal.
			4. Record transactions that affect owner’s equity and receiving cash on account in a five-column journal.

2.O.04 Performance Example:

* Students will complete a business simulation that requires posting to a general ledger.
	+ 1. Post to a General Ledger.
			1. Define and identify terms related to posting from a journal.
			2. Prepare a chart of accounts for a business.
			3. Post separate amounts from a journal to a general ledger.
			4. Post column totals from a journal to a general ledger.
			5. Analyze and journalize correcting entries.

2.O.05 Performance Example:

* Students will transfer/Update an income statement and balance sheet from a previous time period.
	+ 1. Prepare Financial Statements.
			1. Define and identify accounting concepts and practices related to preparation of financial statements for a service business organized as a proprietorship.
			2. Prepare an income statement for a service business organized as a proprietorship and analyze an income statement using component percentages.
			3. Prepare a balance sheet.

2.O.06 Performance Example:

* Students will create an income statement and balance sheet from a five-column journal.

###### Strategic Management

* + 1. Explain the concepts, systems and tools needed to gather, access, synthesize, evaluate and disseminate information in making business decisions.
			1. Describe management’s role to understand its contribution to business success.
			2. Name the three functions of management.
			3. Describe the management techniques used by effective managers.
			4. Utilize planning tools to guide organization’s/department’s activities.
			5. Identify organizational planning considerations.
			6. Describe how to control an organization’s/department’s activities to encourage growth and development.
		2. Performance Example:
			- Students will conduct research on the Internet and prepare a presentation to describe the guidelines that must be followed by businesses in their state as part of management’s job to make sure business records conform to state and federal laws.

###### Web-based Marketing

* + 1. Identify and utilize various electronic media for promotional marketing, information and training and general communications.
			1. Develop strategies to develop and/or increase on-line sales.
			2. Explain how to use electronic media as a tool for developing brand recognition and product positioning.
			3. Explain various ways in which a company can utilize its website.
			4. Describe the impact a webpage has on traditional marketing techniques.
			5. Explain the potential impact of a viral event on the Internet.
			6. Describe the lasting impact of a chain of viral activity on the Internet.
			7. Analyze effective viral and buzz marketing strategies.
			8. Analyze social media to develop effective communications with specific target markets.
		2. Performance Example:
			- Students will visit online retail site and ask students to describe what sort of information the site can gather from each person who browses the site and how that information can be used by the business for the user’s future visits or for other customers.

# [Strand 3: Embedded Academics](#_bookmark0)

Strand 3: Embedded Academics, a critical piece of a Vocational Technical Education Framework, are presented as Crosswalks between the Massachusetts Vocational Technical Education Frameworks and the Massachusetts Curriculum Frameworks. These Crosswalks are located in the Appendix of this Framework.

##### Academic Crosswalks

[Appendix A: English Language Arts](#_bookmark20) [Appendix B: Mathematics](#_bookmark20)

[Appendix C: Science and Technology/Engineering](#_bookmark22) Earth and Space Science

Life Science (Biology)

Physical Science (Chemistry and Physics) Technology/Engineering

# [Embedded Academic Crosswalks](#_bookmark0)

### [Embedded English Language Arts and Literacy](#_bookmark0)

|  |  |  |
| --- | --- | --- |
| CVTE | Strand Coding Designation Grades ELAsLearning Standard Number |  |
| LearningStandard | Text of English Language Arts Learning Standard |
| Number |  |
| 2.C.02-03 | W Grades 9-12 #2 | Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.Performance Example:Students will analyze data and create a written marketing plan including SWOT analysis, customer profiles, financial reports, and analysis of target markets/demographics. |
| 2.B.01 | W Grades 9-12 #3 | Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequencesPerformance Example:* Students will write customer profiles/financial statements based on real/imaginary scenarios and

situations provided by instructors and written in a format that matches standards set forth for a professional presentation of the information. |
| 2.Q.01 | W Grades 9-12 #6 | Use technology, including the internet, to produce and publish writing and to interact and collaborate with othersPerformance Example:* Students will create digital media, online social media, and digital advertising to sell a product of their

creation. Students will create a well-organized and clear that markets to a specific demographic based on research studies from real/imaginary scenarios. |
| 2.I.01-042.E.04 | W Grades 9-12 #7W Grades 9-12 #10 | Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation. |
|  |  | 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.Performance Example:* Students will conduct marketing research based on methods and strategies outlined in their vocational program. Students will conduct market research over a set time frame, recording and analyzing the data from the research study. Students will then report on their findings and analysis of the results in a concise research paper/presentation that meets with ELA standards on research papers/presentations and market

reports format. |
| 2.H.01 | SL Grades 9-12 #2 | Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.Performance Example:* Students will verbally and in writing present a thorough analysis of an existing promotional/advertising campaign for a real/imaginary product and/or company. Students will demonstrate proficiency in communicating their findings in both formats and coming to relevant conclusions on the nature of

advertising from their analysis. |
| 2.H.01-05 | SL Grades 9-12 #4 | Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, andAudiencePerformance Example:* Students will create an advertising campaign for a real/imaginary product and initiate their campaign in a research study among their peers. Students will record their findings and come to an analytical conclusion on marketing to their demographic (age group). Students will present their findings in a visual and verbal format presenting evidence of their findings and their conclusions. Students will create a digital format of presenting their data and findings to their audience. Students will isolate areas of success and areas of

improvement for future advertising endeavors. |
| 2.F.01-03 | L Grades 9-12 #4 | Determine or clarify the meaning of unknown and multiple-meaning words and phrases by using context clues, analyzing meaningful word parts, and consulting general and specialized referencematerials, as appropriate.Performance Example:* From their reads in their vocational shop and viewings of digital media/videos on the nature of marketing, students will put together a “Marketing for Dummies” guide for future students. Students will outline the world of the marketing and define key terms in their own words. The final product will be bound and kept

for future generations within their vocational shop. |
| 2.K.01-03 | L Grades 9-12 #6 | Acquire and use accurately a range of general academic and domain- specific words and phrases sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrateindependence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.Performance Example:* Students will create index cards with vocabulary words on one and definitions on another for multi-use

practice such as a word wall, or matching cards with classmates, teacher can read definition and student will raise their hand if they believe they have the correct vocabulary word. |
| 2.J.01-06 | RL Grades 9-12 #3 | Analyze how and why individuals, events, and ideas develop and interact over the course of a textPerformance Example:* Students will do a research case study on a famous company, entrepreneur, or product. Students will find book sources, articles, first-person accounts, editorials, online videos, and research materials of a diverse nature. Students will put together a profile outline the rise of this product/individual and do a careful analysis of why it met with either success or failure. Students will highlight key points, events, pitfalls,

lesson learned, and any other relevant information. |
| 2.Q.01 | RL Grades 9-12 #7 | Integrate and evaluate content presented in diverse formats and media, including visually and quantitatively, as well as in words.Performance Example:* Students will do research into a product and do a careful analysis to focus on its positives and negatives. Students will look into critical reviews and praise for said product. Students will use editorials, articles, video presentations, news program presentations, pundit programming, and other relevant sources of information. Students will learn to vet their findings and decipher between bias and real facts. Students will present their findings in a multimedia visual presentation citing fact from fiction and coming to a

conclusion on the effectiveness of their product. |

### [Embedded Mathematics](#_bookmark0)

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| --- | --- | --- |
| CVTELearning Standard Number | Math Content Conceptual Category and Domain Code Learning Standard Number | Text of Mathematics Learning Standard |
| 2.C.01 | N-Q1-3A-REI 1-3S-IC 1-2 | N-Q1-3 Use units, define quantities, and choose appropriate levels of accuracy for modeling.A-REI 1-3 Create equations and use them to solve problems. |
|  |  | S-IC 1-2 Using statistics as a model for a population and using that model to make conclusions.Performance Example:Using marketing research, students will develop a marketing plan for products and services. |
| 2.C.03 | N-Q1-3 A-APR 1A-CED1-4 A-SSE 1,3A-REI 1-3 | N-Q1-3 Use units, define quantities, and choose appropriate levels of accuracy for modeling.A-APR 1 Perform arithmetic operations on polynomials.A-CED1-4 Create equations that describe numbers and relationships. A-SSE 1,3 Choose and interpret expressions for quantity in terms of context.A-REI 1-3 Create equations and use them to solve problems.Performance Example:Students will develop a marketing plan based on statistical research. |
| 2.D.01 | N-Q1-3 A-APR 1A-CED1-4 A-SSE 1,3A-REI 1-3 | N-Q1-3 Use units, define quantities, and choose appropriate levels of accuracy for modeling.A-APR 1 Perform arithmetic operations on polynomials.A-CED1-4 Create equations that describe numbers and relationships. A-SSE 1,3 Choose and interpret expressions for quantity in terms of context.A-REI 1-3 Create equations and use them to solve problems.Performance Example:Students will open/close and calculate the financial impact for the steps for all types of sales. |
| 2.D.02 | A-SSE1-4 A-APR 1 A-CED1-4 F-IF 4-6F-BF 1a-c S-ID 1-9S-IC 1-6 S-CP1-3 S-MD1-4 | A-SSE1-4 Interpret expressions that represent quantities in context, write equivalent expressions to solve problems, using formulas to solve problems.A-APR 1 Perform arithmetic operations on polynomials.A-CED1-4 Create equations that describe numbers and relationships. F-IF 4-6 Interpret functions in terms of context.F-BF 1a-c Write a function that models the relationship between two quantities.S-ID 1-9 Interpret categorical and quantitative data.S-IC 1-6 Making inferences and justifying conclusions. S-CP1-3 Using conditional probability to interpret data.S-MD1-4 Calculate expected values and use them to solve problems.Performance Example:Students will identify and calculate the cost associated with doing business |
| 2.E.02 | N-Q1-3 A-APR 1A-CED1-4 | N-Q1-3 Use units, define quantities, and choose appropriate levels of accuracy for modeling.A-APR 1 Perform arithmetic operations on polynomials.A-CED1-4 Create equations that describe numbers and relationships.Performance Example:Students will calculate the cost of operations. |
| 2.E.03 | N-Q1-3 A-APR 1A-CED1-4 | N-Q1-3 Use units, define quantities, and choose appropriate levels of accuracy for modeling.A-APR 1 Perform arithmetic operations on polynomials.A-CED1-4 Create equations that describe numbers and relationships.Performance Example:Students will assemble and complete purchase orders and associated calculations. |
| 2.J.01 | N-Q1-3 A-APR 1A-CED1-4 A-SSE 1,3A-REI 1-3 | N-Q1-3 Use units, define quantities, and choose appropriate levels of accuracy for modeling.A-APR 1 Perform arithmetic operations on polynomials.A-CED1-4 Create equations that describe numbers and relationships. A-SSE 1,3 Choose and interpret expressions for quantity in terms of context. |
|  |  | A-REI 1-3 Create equations and use them to solve problems.Performance Example:Students will develop a marketing plan based on statistical research. |
| 2.K.01 | N-Q1-3A-SSE1-4 | N-Q1-3 Use units, define quantities, and choose appropriate levels of accuracy for modeling.A-SSE1-4 Interpret expressions that represent quantities in context,write equivalent expressions to solve problems, using formulas to solve problems.Performance Example:Students will calculate the impact of inflation on prices. |
| 2.K.01 | N-Q1-3 A-APR 1A-CED1-4 A-SSE 1,3A-REI 1-3S-IC 1-2 | N-Q1-3 Use units, define quantities, and choose appropriate levels of accuracy for modeling.A-APR 1 Perform arithmetic operations on polynomials.A-CED1-4 Create equations that describe numbers and relationships. A-SSE 1,3 Choose and interpret expressions for quantity in terms of context.A-REI 1-3 Create equations and use them to solve problems.S-IC 1-2 Using statistics as a model for a population and using that model to make conclusions.Performance Example:Students will determine the optimal pricing for market conditions |
| 2.L.01 | N-Q1-3A-REI 1-3 | N-Q1-3 Use units, define quantities, and choose appropriate levels of accuracy for modeling.A-REI 1-3 Create equations and use them to solve problems.Performance Example:Students will determine the optimal pricing strategy for products or services for a geographic area. |

### [Embedded Science and Technology/Engineering](#_bookmark0)

#### [Life Science (Biology)](#_bookmark0)

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| CVTELearning Standard Number | Subject Area, Topic Heading andLearning Standard Number | Text of Biology Learning Standard |
| 2.E.01 | Biology SIS 2 | SIS2. Design and conduct scientific investigations.Articulate and explain the major concepts being investigated and the purpose of an investigation.Select required materials, equipment, and conditions for conducting an experiment.Identify independent and dependent variables. Write procedures that are clear and replicable.Employ appropriate methods for accurately and consistently* making observations
* making and recording measurements at appropriate levels of precision
* collecting data or evidence in an organized way Properly use instruments, equipment, and materials (e.g., scales,

probeware, meter sticks, microscopes, computers) including set-up, calibration (if required), technique, maintenance, and storage.Follow safety guidelines.Performance Example:Students will design and conduct their own experiments on which policies and procedures work best in a workplace. |
| 2.E.02 | Biology SIS 1 | SIS1. 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.Read, interpret, and examine the credibility and validity of scientific claims in different sources of information, such asscientific articles, advertisements, or media stories.Performance Example:* After identifying who the stakeholders and decision-makers will be for a fictional start-up company, the

students will conduct research on how similar companies manage themselves and then hypothesize as to which style to best suit their start-up company. |
| 2.G.02 | SIS 2 | SIS2. Design and conduct scientific investigations.Articulate and explain the major concepts being investigated and the purpose of an investigation.Select required materials, equipment, and conditions for conducting an experiment.Identify independent and dependent variables. Write procedures that are clear and replicable.Employ appropriate methods for accurately and consistently* making observations
* making and recording measurements at appropriate levels of precision
* collecting data or evidence in an organized way Properly use instruments, equipment, and materials (e.g., scales,

probeware, meter sticks, microscopes, computers) including set-up, calibration (if required), technique, maintenance, and storage.Follow safety guidelines.Performance Example:* Students will conduct an experiment on different storage techniques for perishable and non-perishable goods. Results of this experiment will inform the students on best practices with goods and the most cost—

effective channel activities for specific market items. |
| 2.D.01 | Biology Mathematical Skills | Students are expected to know the content of the *Massachusetts Mathematics Curriculum Framework,* through grade 8. Below are some specific skills from the *Mathematics Framework* that students in this course should have the opportunity to apply:* Construct and use tables and graphs to interpret data sets.
* Solve simple algebraic expressions.
* Perform basic statistical procedures to analyze the center and spread of data.
* Measure with accuracy and precision (e.g., length, volume, mass, temperature, time)
* Convert within a unit (e.g., centimeters to meters).
* Use common prefixes such as *milli-, centi-,* and *kilo-*.
* Use scientific notation, where appropriate.
* Use ratio and proportion to solve problems.

Performance Example:Students will create a spreadsheet of accounting records. |
| 2.H.02 | Biology SIS 1 | SIS1. 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.Read, interpret, and examine the credibility and validity of scientific claims in different sources of information, such as scientific articles, advertisements, or media stories.Performance Example:* Students are to observe multiple forms of advertisements and then they are to fill in a graphic organizer

with their hypotheses as to: a) what types/forms of advertising exist; b) how those different types/forms are used to target specific demographics |
| 2.O.02 | Biology Mathematical Skills | Students are expected to know the content of the *Massachusetts Mathematics Curriculum Framework,* through grade 8. Below are some specific skills from the *Mathematics Framework* that students in this course should have the opportunity to apply:Construct and use tables and graphs to interpret data sets. Solve simple algebraic expressions.Perform basic statistical procedures to analyze the center and spread of data.Measure with accuracy and precision (e.g., length, volume, mass, temperature, time)Convert within a unit (e.g., centimeters to meters). Use common prefixes such as *milli-, centi-,* and *kilo-*. Use scientific notation, where appropriate.Use ratio and proportion to solve problems.Performance Example:Students will construct tables allocating expenses as debit or credit. They will then use basic algebra to demonstrate the outcome of long-term use of debit or credit on an individual’s bank accounts. |
| 2.P.01 | Biology SIS 3 | SIS3. Analyze and interpret results of scientific investigations.Present relationships between and among variables in appropriate forms.* Represent data and relationships between and among variables in charts and graphs.
* Use appropriate technology (e.g., graphing software) and other tools.

Use mathematical operations to analyze and interpret data results.Assess the reliability of data and identify reasons for inconsistent results, such as sources of error or uncontrolled conditions.Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.State questions raised by an experiment that may require further investigation.Performance Example:* Students will research behavioral experiments with different management techniques. From the experiments they will construct charts to demonstrate which management style works best with which type of business establishment and employee personality. The charts must take into account possible sources of error either stated in the research or via conclusions drawn by the student. The student will

then compose a one to three paragraph interpretation of their data results. |

#### [Technology/Engineering](#_bookmark0)

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| CVTELearning Standard Number | Subject Area, Topic Heading andLearning Standard Number | Text of Chemistry Learning Standard |
| 2.A.01 | Technology/Engineering 1.1 | Identify and explain the steps of the engineering design process: identify the problem, research the problem, develop possible solutions, select the best possible solution(s), construct prototypes and/or models, test and evaluate, communicate the solutions, andredesign.Performance Example:* Students conduct research project into work-related injuries (i.e., eye strain, carpal tunnel syndrome, etc.).

Students must locate scientific research articles and explain them to their class using laymen’s terms and thereby demonstrating an understanding of the steps towards research. |
| 2.B.01-2.B.03 | Technology/Engineering 1.1 | Identify and explain the steps of the engineering design process: identify the problem, research the problem, develop possible solutions, select the best possible solution(s), construct prototypes and/or models, test and evaluate, communicate the solutions, andredesign.Performance Example:* Students will engage in a role-play game where they must engage with an unhappy customer. Using the fundamentals of customer relations, they must resolve the client’s problem by: 1. Identifying the problem;

2. Research how to resolve the problem; 3. Develop possible solutions for the problem; 4. Model the solution to the problem for the client; 5. Test the solution; 6. Engage with the customer to determine if theproblem has been resolved. |
| 2.H.01 | Technology/Engineering 1.1 | Identify and explain the steps of the engineering design process: identify the problem, research the problem, develop possible solutions, select the best possible solution(s), construct prototypes and/or models, test and evaluate, communicate the solutions, andredesign.Performance Example:* The students are about to start an advertising campaign for a pretend company. They have to design a name, logo, promotional materials, and engage in various forms of advertising to promote this new company. To determine the best type of logo and advertising to use, the students will have to identify what best fits the needs of the new company, research successful and failed campaigns with the type of product

this company will produce and make decisions based on this information. This will be Part B of this project. Part A is explained under standard 2.I.01 |
| 2.I.01 | Technology/Engineering 1.1 | Identify and explain the steps of the engineering design process: identify the problem, research the problem, develop possible solutions, select the best possible solution(s), construct prototypes and/or models, test and evaluate, communicate the solutions, andredesign.Performance Example:* Students will engage in detailed research for the pretend company in standard 2.H.01. In order to determine how to best market this pretend company, they have to conduct market research for the type of product they are trying to advertise and how to best manage the campaign. This will serve as part A of this

project. |
| 2.I.02 | Technology Mathematical Skills | * Construct and use tables and graphs to interpret data sets.
* Solve simple algebraic expressions.
* Perform basic statistical procedures to analyze the center and spread of data.
* Measure with accuracy and precision (e.g., length, volume, mass, temperature, time)
* Use both metric/standard international (SI) and U.S. Customary (English) systems of measurement.
* Convert within a unit (e.g., centimeters to meters, inches to feet).
* Use common prefixes such as *milli-, centi-,* and *kilo-*.
* Use scientific notation, where appropriate.
* Use ratio and proportion to solve problems.

Performance Example:* From the project described under the performance examples for 2.H.01 and 2.I.01, students will have to present the data they collected from their research in table and charts. This will involve identifying data sets,. Identifying dependent and independent variables, creating basic charts (histograms, bar charts, pie charts, etc…), and the use of basic statistical analyses to prove to their customer how they should promote
* their product.
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| 2.N.01 | Technology/Engineering 1.2 | Understand that the engineering design process is used in the solution of problems and the advancement of society. Identify examples of technologies, objects, and processes that have beenmodified to advance society, and explain why and how they were modified.Performance Example:* Students will select a single product that has been marketed over many years and compare the advertising for it over different decades (at least two). They will compare and contrast how the marketing campaign used in these different decades reflects the culture of the place and time the product is being advertised for and demonstrate how the product affected society. For example, the students could compare how coca-
* cola was advertised in the 1960s and 70s to how it was advertised in the 2000s.
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| 2.O.03-2.O.05 | Technology /Engineering Mathematical Skills | * Construct and use tables and graphs to interpret data sets.
* Solve simple algebraic expressions.
* Perform basic statistical procedures to analyze the center and spread of data.
* Measure with accuracy and precision (e.g., length, volume, mass, temperature, time)
* Use both metric/standard international (SI) and U.S. Customary (English) systems of measurement.
* Convert within a unit (e.g., centimeters to meters, inches to feet).
* Use common prefixes such as *milli-, centi-,* and *kilo-*.
* Use scientific notation, where appropriate. Use ratio and proportion to solve problems.

Performance Example:* Students will receive mock receipts for a company that has been in business for 3 months. They must take these receipts (both costs and earnings) and convert them into a journalizing transaction, and then they must post the information to a general ledger and then finally prepare a financial statement. This will require the use of basic mathematical functions, a spreadsheet and creating charts of accounts for the

business. |
| 2.Q.01 | Technology/Engineering 1.2 | Understand that the engineering design process is used in the solution of problems and the advancement of society. Identify examples of technologies, objects, and processes that have been modified to advance society, and explain why and how they weremodified.Performance Example:* Students must write a John Collins type 3 essay in which they explain how the internet changed marketing. They are to focus on the impact of specific webpages, viral marketing campaigns and social media
* networks.
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#### [Social Science and History](#_bookmark0)

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| CVTELearning Standard Number | Subject Area, Topic Heading andLearning Standard Number | Text of Social Science and History Learning Standard |
| 2.C.01 | Economics 1.7 | Compare and contrast how the various economic systems(traditional, market, command, mixed) try to answer the questions: What to produce? How to produce it? And for whom to produce?Performance Example:* Students fill in two-column notes on the fundamentals of marketing (including defining marketing, explaining the seven functions of marketing, analyzing the benefits of marketing, defining target market,

etc.). |
| 2.D.02 | Economics 2.6 | Demonstrate how supply and demand determine equilibrium price and quantity in the product, resource, and financial markets.Performance Example:* Students write a John Collins type 3 assignment where they analyze financial needs and goals to determine financial requirements. They must explain the goals of pricing, differentiate between market share and market position, analyze demand elasticity and supply and demand theory, assess options to start up,

maintain or expand a business, and describe key implications for establishing and managing credit as both a borrower and a lender. |
| 2.D.04 | Economics 1.10 | Formulate a savings or financial investment plan for a future goal (e.g., college or retirement).Performance Example:Students must compare investment in a business to saving for retirement. |
| 2.F.01 | Economics 2.2 | Describe the role of buyers and sellers in determining the equilibrium price.Performance Example:Students play a matching game where they have to organize bits of information under the categories: selling situations, purpose/goals of selling, and Maslow’s hierarchy of needs. |
| 2.F.02 | Economics 2.4 | Recognize that consumers ultimately determine what is produced in a market economy (consumer sovereignty).Performance Example:* Students make a slide show presentation or poster explaining how to communicate a product’s benefits to a customer and how to ensure its appropriateness for a customer since ultimately, consumers determine

what is produced in a market economy. |
| 2.K.02 | Economics 7.1 | Explain the benefits of trade among individuals, regions, and countries. |
| 2.K.03 | Economics 5.5 | Recognize that a country’s overall level of income, employment, and prices are determined by the individual spending and productiondecisions of households, firms, and government.Performance Example:Students will conduct a jigsaw activity where they will identify the role of business in society. Together, they will identify the characteristics of a free trade system, explain the theory of supply and demand, compare and contrast for profit and non-profit organizations. |

 [Industry Recognized Credentials](#_bookmark0) (Licenses and Certifications/Specialty Programs)

* Occupational Safety and Health Administration (OSHA) – Ten-hour General Industry Certification
* National Retailers Federation Customer Service Certification

The role of marketing has evolved with the dynamic changes that the internet has brought to business. Professionals working in a marketing capacity must be well rounded in sales, management, advertising, customer service, cultural diversity, and both qualitative and quantitative analysis. Unfortunately, no nationally-recognized license or certification is available for this skill set.