



*Vocational Technical Education Framework*



**Business & Consumer Services Occupational Cluster**

***Marketing (VMARK)***

CIP Code 190203

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**Massachusetts Department of Elementary and Secondary Education**

**Office for Career/Vocational Technical Education**

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# Acknowledgements

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## Commissioner's Letter

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Mitchell D. Chester, Ed.D.  
Commissioner

July 2014

Dear Colleagues,

I am pleased to present to you the *Massachusetts Vocational Technical Education Frameworks*, adopted by the Department of Elementary and Secondary Education in June 2014. These frameworks, one for each of the 44 vocational technical programs, include standards in multiple strands representing all aspects of the industries that students in the vocational technical education program are preparing to enter.

The frameworks also include a crosswalk between the technical standards and relevant standards in Massachusetts Curriculum Frameworks to support effective integration of academic and technical content.

The comments and suggestions received during revision of the 2007 *Massachusetts Vocational Technical Education Frameworks* have strengthened these frameworks. We will continue to work with schools and districts to implement the 2014 *Massachusetts Vocational Technical Education Frameworks* over the next several years, and we encourage your comments.

I want to thank everyone who worked with us to create challenging learning standards for Massachusetts students. I am proud of the work that has been accomplished.

Sincerely,

Mitchell D. Chester, Ed.D.  
Commissioner of Elementary and Secondary Education

# Introduction

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## Overview & Organization and Key Changes

### Overview

The Massachusetts Department of Elementary and Secondary Education understands the necessity of maintaining current Vocational Technical Education Frameworks which ensure career/vocational technical education students across the Commonwealth are taught the most rigorous standards aligned to the needs of business and industry.

With the advent of the Massachusetts Teaching & Learning System the Office for Career/Vocational Technical Education (CVTE) recognized the significance of including career/vocational technical education in the system and developed a comprehensive plan for including vocational technical education. The plan was designed in a Two Phase Process. Phase One included the revision of strands two, three, and six, of all of the Vocational Technical Education Frameworks. Phase Two consisted of three major components (projects) all equally crucial;

1. The revision of Strands One, Four, and Five to complete the revision of all six strands of the Vocational Technical Education Frameworks;
2. Statewide Professional Development on all revised strands, with training on strands two, three, and six delivered fall 2013, and training on strands one, four, and five delivered spring 2014;
3. The creation and development of additional Model Curriculum Unit (MCU) Teams.

The Office for Career/Vocational Technical Education Framework Team, with support from consultants, began Phase One in the 2012-2013 school year, to revise three of the six strands contained in all of the Vocational Technical Education (VTE) Frameworks. The state was organized into “Collaborative Partnerships” comprised of teams of project administrators, highly qualified subject matter educators, and business and industry partners, whose task was to revise Strand Two – Technical, Strand Three – Embedded Academics, and Strand Six – Technology Literacy. Each team met with a vocational advisory committee which included business and industry representatives and postsecondary education professionals, whose mission was to review and revise the team’s draft document during the revisionary process. Once strand two was revised, academic teachers (typically one English Language Arts teacher, one Mathematics teacher, and one Science teacher) worked with the technical subject matter teachers to develop a crosswalk between academic curricula standards and the technical standards, and provided examples of embedded academic content.

The Office for Career/Vocational Technical Education solicited statewide input from technical and academic teachers and administrators at the annual Massachusetts Association of Vocational Administrators (MAVA)/Massachusetts Vocational Association (MVA) - Connecting for Success Conference. Each framework team met with their content colleagues and reviewed the draft revisions and obtained

valuable feedback. Additionally, all drafts were reviewed and revised by the Massachusetts Vocational Technical Teacher Testing Program, to ensure appropriate measurable language.

Project consultants designed a new template to ensure all framework teams entered new standards and additional resources in a consistent manner. The framework teams created an “Appendix” listing potential industry recognized credentials attainable by secondary students; lists of professional, student, and relevant government organizations; and useful resources and websites. *\* It is important to note that although most Framework Teams provided information for the “Appendix”, not all teams did. Therefore, sub-headings within the “Appendix” without information have been deleted. Disclaimer: Reference in the Appendices Section to any specific commercial products, processes, or services, or the use of any trade, firm or corporation name is for the information and convenience of the public, and does not constitute endorsement or recommendation by the Massachusetts Department of Elementary and Secondary Education.*

The Office for Career/Vocational Technical Education facilitated a comprehensive vetting process throughout the Commonwealth. During the fall of 2012 districts throughout Massachusetts solicited feedback from each Vocational Program’s Advisory Committee members at the Fall Board meetings. Additionally, the Office for Career/Vocational Technical Education met with various licensing boards at the Massachusetts Division of Professional Licensure and provided the applicable draft framework to each board for review. All framework drafts were posted on the CVTE website for public comment. Comments and suggested revisions received were shared with each framework team for response and edits, as appropriate.

The Phase I Process was completed on an accelerated timetable and resulted in all Vocational Technical Education Frameworks; Strand Two and Strand Six, revised with current, rigorous, relevant standards. Strand Three has been redesigned into a crosswalk which directly correlates academic and technical standards. An appendix of useful material for technical teachers recommended by their peers was added to each framework.

Phase II of the Framework Revision Process consisted of three major projects;

1. The Strands One, Four & Five Project, to complete the revision of all six strands of the Vocational Technical Education Frameworks;
2. Statewide Professional Development on all revised strands, with training on strands two, three, and six delivered fall 2013, and training on strands one, four, and five delivered spring 2014;
3. The creation and development of additional Model Curriculum Unit (MCU) Teams.

The Strands One, Four, & Five Project began in the fall of 2013 with the formation of a leadership team and three work groups. Co-Managers led the leadership team comprised of three Strand Coordinators who facilitated work teams and reviewed, researched, and revised these common strands. All skills specific to the vocational technical program have been included into Strand Two Technical.

The Strand One Team revised the safety knowledge and skills that all students need to acquire. The team included relevant issues (i.e., bullying, climate), laws, regulations, guidelines and policies pertaining to safety.

The Strand Four Team revised the Employability Knowledge and Skills that all students need to acquire. Teams considered current research on career readiness, including the work of the College Career Readiness Task Force convened by the Department, changes in workplace, technological changes that impact how people perform their work (i.e., communications methods), and included standards that emphasize the need for lifelong learning and adaptability given the multiple career changes over and an individual's working life. The team recommended this strand be renamed to: Career Readiness.

The Strand Five Team revised the Management & Entrepreneurship Knowledge and Skills that all students need to acquire. All business owners and employees must possess management and financial skills to be productive members of society. Skills included financial knowledge and basic business management skills.

All Strand One, Four and Five Project Teams worked collaboratively with staff from the Department of Elementary and Secondary Education and the Advisors of the Massachusetts Career and Technical Student Organizations to crosswalk standards to national Career & Technical Student Organizations Curricula, as applicable.

The Office for Career/Vocational Technical Education contracted the MAVA Consultant Team to work closely with the office to complete all of the work accomplished during Phase II of the Project.

A remarkable amount of work was accomplished through the efforts of hundreds of professionals who collaborated and diligently supported this work. The Office for Career/Vocational Technical Education is grateful for all the support received from the field, particularly all of the teachers (technical and academic), administrators, advisory committee members, business and industry representatives, the Division of Professional Licensure - boards, the Massachusetts Association of Vocational Administrators, the MAVA Consultants, and the Massachusetts Vocational Association, whose contributions were tremendous.

Special thanks to all staff in the Office for Career/Vocational Technical Education and the CVTE Framework Revision Team who provided guidance and numerous contributions during Phase One of the project.

## Organization and Key Changes

This section contains the following:

- Highlights of Changes to the Vocational Technical Education Frameworks; which includes a summary of changes made to each strand.
- Organization of the Frameworks – Strand Two illustrates structure of topic headings, standards and objectives, and performance examples.

### Highlights of Changes to the Vocational Technical Education Frameworks:

#### Strand One:

Safety and Health Knowledge and Skills have been revised to contain the safety standards that are common to all programs. The Strand One Team worked collaboratively with staff from the Department of Elementary and Secondary Education and the Advisors of the Career and Technical Student Organizations (CTSO) to crosswalk standards to national CTSO Curricula, as applicable.

- No objectives were deleted, only modified.
- Language and wording was clarified.
- Additions included a focus on maintaining a safe school and workplace in terms of creating a positive climate/environment.
- Student safety credential program has been revised.
- Safety attire has been revised.
- Emergency equipment and fire safety has been revised.
- Many new Performance Examples have been included.
- Within each strand, standards and objectives were grouped under Topic Headings, which are displayed in bold. Each standard is followed by a performance example. See the section below titled: "Organization of the Frameworks – Strand Two". All strands were organized in that manner, with the exception of the former Strand Three.

#### Strand Two:

The Technical Standards Knowledge and Skills have been revised to reflect business and industry changes since the adoption of the 2007 Vocational Technical Education Frameworks (VTEF). There are additional changes to Strand Two below:

- The Technical Knowledge and Skills (Strand Two) section contains standards specific to the particular vocational program; suffix "a" (as common to all programs) and suffix "c" (as common within a cluster) have been removed.
- Each VTEF Strand Two begins with safety and health knowledge and skills specific to the particular vocational program.
- Within each strand, standards and objectives were grouped under Topic Headings, which are displayed in bold. Each standard is followed by a performance example. See the section below titled: "Organization of the Frameworks – Strand Two". All strands were organized in that manner, with the exception of the former Strand Three.

- Strand Two of the Frameworks for Animal Science, Environmental Science and Technology, and Horticulture, begin with core standards required for all participants in the programs, followed by a series of standards organized in concentrations. See the section below titled: “Organization of the Frameworks – Strand Two” for more information.
- An update to some of the vocational programs framework is the addition of advanced or supplemental standards which are noted in Strand Two by an asterisk (\*). *These standards are not required, but are provided as suggestions that districts may choose to use to increase the depth of a particular topic, or add additional topics, particularly for advanced students or for those seniors who do not participate in cooperative education.* See the section below titled: “Organization of the Frameworks – Strand Two” for more information.

### Strand Three:

Since the purpose of Strand Three was to correlate academic content that was *embedded* in the knowledge and skills necessary to perform certain technical skills, it was logical to highlight those connections through a crosswalk between the academic curriculum standards and the technical standards (Strand Two). The crosswalk directly correlates the English Language Arts (2011) and Mathematics (2011) Frameworks, incorporating the Common Core Standards and the Science and Technology/Engineering Frameworks. The crosswalk can be found in the appendix of each vocational framework. The crosswalk also includes performance examples which illustrate integrated academic and technical content.

- Embedded Academics has been replaced with a crosswalk between the academic curriculum standards and the technical knowledge and skills standards. The crosswalk is located in the Appendices.

### Strand Four:

Employability (and Career Readiness) Knowledge and Skills focused on providing students with general knowledge and skills to be college and career ready. The Strand Four Team worked collaboratively with staff from the Department of Elementary and Secondary Education and the Advisors of the Career and Technical Student Organizations to crosswalk standards to national CTSO Curricula, as applicable.

- Language and wording were clarified.
- Additions included a focus on providing students with skills for employability/career readiness.
- Modifications included Career Exploration & Navigation, Communication in the Workplace, and Work Ethic & Professionalism.
- New Performance Examples have been included.
- Within each strand, standards and objectives were grouped under Topic Headings, which are displayed in bold. Each standard is followed by a performance example. See the section below titled: “Organization of the Frameworks – Strand Two”. All strands were organized in that manner, with the exception of the former Strand Three.

### Strand Five:

Strand Five contains Management and Entrepreneurship Knowledge and Skills that are general for all students. The Strand Five Team worked collaboratively with staff from the Department of Elementary and Secondary Education and the Advisors of the Massachusetts Career and Technical Student Organizations to crosswalk standards to national Career & Technical Student Organizations Curricula, as applicable.

- Language and wording were clarified and organized into a logical format.
- The Strand Five Team felt that the 2007 curriculum remained valid.
- Additions included a focus on providing students with skills for management and entrepreneurship applicable to all vocational programs.
- Modifications included Starting and Managing a Business, Marketing, and Financial Concepts & Applications in Business, and Legal/Ethical/Social Responsibilities.
- New Performance Examples have been included.
- Within each strand, standards and objectives were grouped under Topic Headings, which are displayed in bold. Each standard is followed by a performance example. See the section below titled: "Organization of the Frameworks – Strand Two". All strands were organized in that manner, with the exception of the former Strand Three.

### Strand Six

Strand Six Technology Literacy Knowledge and Skills has been replaced with the 2008 Massachusetts Technology Literacy Standards and Expectations Framework.

## Appendix<sup>1</sup>

Each framework contains an “Appendix” section which includes an Embedded Academic Crosswalk, Industry Recognized Credentials, Statewide Articulation Agreements, Professional, Governmental, and Student Organizations, Resources, and relevant websites.

The Appendix<sup>2</sup> contains:

- Embedded Academic crosswalks for English Language Arts, Mathematics, and Science & Technology/Engineering.
- Statewide Articulations: Current statewide Articulation Agreements and/or Apprenticeship Programs available to the specific vocational program are listed on this page. The development of new statewide articulations continues, and therefore these pages will be revised as new agreements are finalized.
- Industry-Recognized Credentials: Technical Teacher Teams generated lists of credentials for the vocational programs. Program Advisory Committees throughout the state reviewed and provided recommendations through the validation process. *The credential list has been provided as a resource only and districts are not obligated to provide all of the specified credentials for students.*
- Other: These pages provide lists of reference materials, government agencies, professional and student organizations, and useful websites created by each framework team. These are intended as helpful resources for technical teachers, identified by peers. These are not recommended or required by the Department of Elementary & Secondary Education.

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<sup>1</sup> *Note: Although most Framework Teams provided information for the “Appendix”, not all teams did. Therefore, sub-headings within the “Appendix” without information have been deleted.*

*Disclaimer: Reference in the Appendices Section to any specific commercial products, processes, or services, or the use of any trade, firm or corporation name is for the information and convenience of the public, and does not constitute endorsement or recommendation by the Massachusetts Department of Elementary and Secondary Education.*

## Organization of the Frameworks – Strand Two

The Vocational Technical Education Frameworks contain knowledge and skills covering all aspects of industry, reflected in six strands: Safety and Health, Technical, Embedded Academics, Employability, Management and Entrepreneurship, and Technological.

Within each strand, standards and objectives were grouped under topic headings, which are displayed in bold. Each standard is followed by a performance example. In the excerpt below, 2.A is the topic; 2.A.01 is the first standard and 2.A.01.01 and 2.A.01.02 are the objectives under that standard.

### **2.A Automotive Technology Specific Safety Practices**

- 2.A.01 Identify and describe safety procedures when dealing with different types of automotive lifts according to current industry standards.
- 2.A.01.01 Demonstrate procedures for safe lift operations.
  - 2.A.01.02 Demonstrate safe use, placement and storage of floor jacks and jack stands.

2.A.01 Performance Example:

- Student will set up lift using manufacturer’s suggested lift points.

- 2.A.02 Demonstrate and describe safety procedures when dealing with high pressure systems including necessary ventilation according to current industry standards.
- 2.A.02.01 Describe and demonstrate the importance of safety procedures to be used when servicing high pressurized systems (fuel systems, brakes, air conditioning, suspension, hydraulic systems, etc.).
  - 2.A.02.02 Describe and demonstrate safe use of oxygen/acetylene torches and electric welding equipment.
  - 2.A.02.03 Demonstrate ventilation procedures to be followed when working in the lab/shop area.

2.A.02 Performance Example:

- Student will relieve fuel system pressure to perform necessary repairs.

- 2.A.03 Identify and describe safety procedures when dealing with electrical circuits according to current industry standards.
- 2.A.03.01 Describe safety procedures to be followed when servicing supplemental restraint systems.
  - 2.A.03.02 Demonstrate safety awareness of high voltage circuits of electric or hybrid electric vehicles and related safety precautions.

2.A.03 Performance Example:

- Safely disable Supplemental Restraint System (SRS) air bag for repair using manufacturer’s recommendations.

There are additional changes to some of the Frameworks Strand Two (Technical Knowledge and Skills). Specifically, Strand Two of the Frameworks for Animal Science, Environmental Science and Technology and Horticulture begin with core standards required for all participants in the programs, followed by a series of standards organized in concentrations. For example, Strand Two of the Horticulture Framework begins with the core standards required of all Horticulture students

(Topics 2.A through 2.I). These standards are followed by the three concentrations: Arboriculture (Topics 2.J through 2.L), Greenhouse Management and Floriculture (Topics 2.J. through 2.L) and Landscape and Turf Management (Topics 2.M through 2.Q).

### **Advanced / Supplemental Standards (Not Required)**

Another variation that is new to the revised Strand Two Frameworks is the addition of advanced or supplemental standards which are noted with the use of an asterisk (\*). *These standards are not required, but are provided as suggestions that districts may choose to use to increase the depth of a particular topic, or add additional topics, particularly for advanced students or for those seniors who do not participate in cooperative education.*

The following is an example from Automotive Technology, where entire topics were added:

#### ***Advanced Automotive Technology Technical Knowledge and Skills***

*Note: The following competencies are optional, supplementary competencies suitable for advanced students. These are not required.*

### **2.CC Demonstrate appropriate engine repair techniques.**

2.CC.01 Perform appropriate cylinder Head Repair.

2.CC.01.01\* Diagnose, remove and replace cylinder head(s).

2.CC.01.02\* Clean and visually inspect a cylinder head for cracks; check gasket surface areas for warpage and surface finish; check passage condition; determine necessary action.

The following is an example from the Strand Two Radio and Television Broadcasting Framework that shows the addition of an advanced objective, 2.B.04.08\*:

2.B.04 Explain concepts fundamental to shooting in cinema and video.

- 2.B.04.01 Compare and contrast a single-camera and a multiple-camera production.
- 2.B.04.02 Explain the importance of shooting for the edit (i.e., match on action, sequencing, coverage).
- 2.B.04.03 Explain the importance of continuity.
- 2.B.04.04 Explain the 180° Rule line, and its application in various cinema scenarios.
- 2.B.04.05 Identify and establish a specific point-of-view when shooting from a script.
- 2.B.04.06 Analyze the methods in which specific shots can evoke emotion from an audience.
- 2.B.04.07 Define drop frame and non-drop frame code shooting and explain how to account for both when preparing for an edit.
- 2.B.04.08\* Describe various cinematographic methods necessary when shooting scenes that incorporate post-production visual effect

2.B.04 Performance Examples:

- Students will list similarities and differences of single-camera and multiple-camera shoots.
- Students will describe multiple shooting considerations that are useful in streamlining the editing process.

# *Business & Consumer Services Occupational Cluster*

## *Marketing Framework (VMARK)*

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

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#### **1.A Fundamentals of Health and Safety**

- 1.A.01 Describe and apply health and safety regulations.
- 1.A.01.01 Identify, describe and apply health and safety regulations that apply to specific tasks and jobs. Students must complete a safety credential program, e.g., Occupational Safety and Health Administration 10, CareerSafe and ServSafe.
  - 1.A.01.02 Identify, describe and apply Environmental Protection Agency (EPA) and other environmental protection regulations that apply to specific tasks and jobs in the specific occupational area.
  - 1.A.01.03 Identify, describe and apply Right-To-Know (Hazard Communication Policy) and other communicative regulations that apply to specific tasks and jobs in the specific occupational area.
  - 1.A.01.04 Explain procedures for documenting and reporting hazards to appropriate authorities.
  - 1.A.01.05 Identify and describe potential consequences for non-compliance with appropriate health and safety regulations.
  - 1.A.01.06 Identify and list contact information for appropriate health and safety agencies and resources.

1. A.01 Performance Examples:

- List and define OSHA Health and Safety Regulations, EPA and other environmental protection regulations to occupational area.
- List and define Right-to-Know regulations and reporting of hazards and contact information for appropriate health and safety agencies.
- List the laws and rules of regulatory agencies governing sanitation and safety.
- Utilize OSHA as well as health and safety websites for purposes of research.

- 1.A.02 Demonstrate appropriate health and safety practices based on the specific occupational area.
- 1.A.02.01 Identify, describe and demonstrate the effective use of Safety Data Sheets (SDS).
  - 1.A.02.02 Read and interpret chemical, product and equipment labels to determine appropriate health and safety considerations.
  - 1.A.02.03 Identify, describe and demonstrate personal, shop and job site safety practices and procedures.
  - 1.A.02.04 Demonstrate safe dress and use of relevant safety gear, personal protective equipment (PPE) and ergonomics, e.g., wrist rests, adjustable workspaces, equipment, gloves, proper footwear, earplugs, eye protection and breathing apparatus.
  - 1.A.02.05 Demonstrate appropriate safe body mechanics, including appropriate lifting techniques and ergonomics.

- 1.A.02.06 Locate emergency equipment, first aid kit, SDS information directories and emergency action/response plan/escape routes in your lab, shop and classroom, including labels and signage that follow OSHA Hazard Communication Program (HAZCOM), eyewash stations, shower facilities, sinks, fire extinguishers, fire blankets, telephone, master power switches and emergency exits.
- 1.A.02.07 Demonstrate the safe use, storage, and maintenance of every piece of equipment in the lab, shop and classroom, e.g., the OSHA Lockout/Tagout Program (LOTO).
- 1.A.02.08 Describe safety practices and procedures to be followed when working with and around electricity, e.g., ground fault circuit interrupter (GFCI) and frayed wiring.
- 1.A.02.09 Handle, store, dispose of and recycle hazardous, flammable and combustible materials, according to EPA, OSHA and product specifications.
- 1.A.02.10 Demonstrate appropriate workspace cleaning, sanitation, disinfection and sterilization procedures required in specific occupational areas, e.g., Workplace Housekeeping OSHA Regulations.

1. A.02 Performance Examples:

- Identify, describe and demonstrate the use of SDS.
- List and demonstrate shop dress code, safety procedures and location of emergency equipment in labor classroom.
- Define and demonstrate safe storage and maintenance of equipment and proper disposal or recycling of hazardous, flammable and combustible materials.
- Identify, describe and demonstrate the Universal Precautions set of guidelines.

- 1.A.03 Demonstrate appropriate responses to situations that may threaten health and safety.
  - 1.A.03.01 Describe First Aid procedures for potential injuries and other health concerns in the specific occupational area.
  - 1.A.03.02 Describe the importance of emergency preparedness and an emergency action/response plan.
  - 1.A.03.03 Describe procedures used to handle emergency situations, defensive measures and accidents, including identification, reporting, response, evacuation plans and follow-up procedures.
  - 1.A.03.04 Identify, describe and demonstrate safety practices in specific occupational areas used to avoid accidents.
  - 1.A.03.05 Identify and describe fire protection, protection, precautions and response procedures.
  - 1.A.03.06 Discuss the role of the individual and the company/organization in ensuring workplace safety including transportation to and from school, school activities and the workplace.
  - 1.A.03.07 Discuss ways to identify, prevent and report school and workplace violence, discrimination, harassment and bullying.
  - 1.A.03.08 Demonstrate positive and appropriate behavior that contributes to a safe and healthy environment in school and the workplace.

1. A.03 Performance Example:

- Define first aid procedures and protocols used to handle emergency situations and practices used to avoid accidents.
- View safety videos and discuss the role of workplace safety.
- Attend or participate in a human rights alliance organization presentation.
- Observe and/or demonstrate the appropriate use of a fire extinguisher using the (PASS) technique: Pull, Aim, Squeeze, Sweep.
- Review and discuss specific policies, procedures and protocols regarding discrimination, harassment and bullying.
- Discuss and/or role-play proper and respectful behavior that contributes to a positive climate.
- Discuss and/or demonstrate behavior that contributes to a collaborative/teamwork environment.

### *Selected Websites*

- Bullying Prevention and Intervention Resources : [www.doe.mass.edu/bullying](http://www.doe.mass.edu/bullying)
- Centers for Disease Control and Prevention: [www.cdc.gov](http://www.cdc.gov)
- Environmental Protection Agency : [www.epa.gov](http://www.epa.gov)
- “Lost Youth – Four Stories of Injured Young Workers”– WorkSafeBC:  
<http://www2.worksafebc.com/Publications/Multimedia/Videos.asp?reportid=34291>
- Massachusetts Department of Elementary and Secondary Education. (2011). Career/Vocational Technical Education Safety Guide: [www.doe.mass.edu/cte](http://www.doe.mass.edu/cte)
- Massachusetts Department of Elementary and Secondary Education: [www.doe.mass.edu](http://www.doe.mass.edu)
- Massachusetts Emergency Management Agency: [www.mass.gov/eopss/agencies/mema](http://www.mass.gov/eopss/agencies/mema)
- Massachusetts General Law: [www.malegislature.gov](http://www.malegislature.gov)
- Massachusetts Health and Human Services: [www.mass.gov/dph](http://www.mass.gov/dph)
- Massachusetts Right to Know Law Summary:  
<http://www.mass.gov/lwd/docs/dos/mwshp/hib397.pdf>
- Safety Data Sheet: [www.sdsonline.com](http://www.sdsonline.com)
- National Fire Protection Association: [www.nfpa.org](http://www.nfpa.org)
- Protection of Student Rights: Massachusetts General Law:  
<https://malegislature.gov/Laws/GeneralLaws/PartI/TitleXII/Chapter76/Section5>
- Occupational Safety and Health Administration: [www.osha.gov](http://www.osha.gov)
- Readiness and Emergency Management for Schools: [www.rems.ed.gov](http://www.rems.ed.gov)
- Safe and Healthy Learning Environments: [www.doe.mass.edu/ssce/safety.html](http://www.doe.mass.edu/ssce/safety.html)

## Strand 2: Technical Knowledge and Skills

### 2.A Marketing Safety Health Knowledge and Skills

- 2.A.01 Utilize Ergonomic Safety.
  - 2.A.01.01 Define Ergonomics.
  - 2.A.01.02 Explain carpal tunnel syndrome and related repetitive strain injury and list exercises to reduce such injury.
  - 2.A.01.03 Describe causes and remedies for eyestrain.

2.A.01 Performance Example:

- Students will define and demonstrate hand and body exercises designed to eliminate static posture.

### 2.B Fundamentals of Customer Relations

- 2.B.01 Develop product/service knowledge.
  - 2.B.01.01 Participate in available product-relevant training through variety of sources.
  - 2.B.01.02 Describe relevant features and benefits of product/service appropriate to specific customer needs.
  - 2.B.01.03 Describe comparable/competitor's products and services.

2.B.01 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.

- 2.B.02 Assess customer needs.
  - 2.B.02.01 Approach the customer in a manner appropriate to the situation and/or industry.
  - 2.B.02.02 Solicit information on intended use of product/service.
  - 2.B.02.03 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.

- 2.B.03 Educate the customer.
  - 2.B.03.01 Provide accurate information about service policies (return policies, warranties, guarantees, service plans, layaways, rain checks).
  - 2.B.03.02 Provide follow-up plan to customer, if necessary.
  - 2.B.03.03 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.

### 2.C Fundamentals of Marketing

- 2.C.01 Explain the role and function of business marketing to facilitate economic exchanges with customers.
  - 2.C.01.01 Define marketing.
  - 2.C.01.02 Explain the seven functions of marketing.
  - 2.C.01.03 Explain the marketing concept.

- 2.C.01.04 Analyze the benefits of marketing.
- 2.C.01.05 Apply the concept of a utility.
- 2.C.01.06 Describe the concept of market.
- 2.C.01.07 Differentiate between consumer and industrial markets.
- 2.C.01.08 Describe and examine market share.
- 2.C.01.09 Define target market.
- 2.C.01.10 List the components of the marketing mix.
- 2.C.01.11 Determine the marketing mix for a product/service.

2.C.01 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.

- 2.C.02 Summarize the important components of a Marketing Plan.
  - 2.C.02.01 Conduct a Strength, Weaknesses, Opportunities, Threats (SWOT) analysis.
  - 2.C.02.02 List and describe key areas of an internal company analysis.
  - 2.C.02.03 Identify the factors in an environmental scan.
  - 2.C.02.04 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.

- 2.C.03 Identify and analyze markets.
  - 2.C.03.01 Explain the concept of market segmentation.
  - 2.C.03.02 Differentiate between demographics, geographics, and psychographics.
  - 2.C.03.03 Create a customer profile.
  - 2.C.03.04 Create and analyze a target market for a product/service.
  - 2.C.03.05 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.

## 2.D Financial Analysis

- 2.D.01 Explain the fundamental principles of monetary exchanges.
  - 2.D.01.01 Describe appropriate cash handling practices in a business.
  - 2.D.01.02 Perform entry-level record keeping/accounting records.
  - 2.D.01.03 Handle cash and monetary instruments.

2.D.01 Performance Example:

- Students will participate in a simulation that demonstrates cash handling methods including making change from customer cash purchases.

- 2.D.02 Analyze financial needs and goals to determine financial requirements.
  - 2.D.02.01 Explain the goals of pricing.
  - 2.D.02.02 Differentiate between market share and market position.
  - 2.D.02.03 Analyze demand elasticity and supply and demand theory.
  - 2.D.02.04 Describe options for obtaining capital to start up, maintain or expand a business.
  - 2.D.02.05 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.

- 2.D.03 Manage personal finances to achieve financial goals.
- 2.D.03.01 Calculate net pay.
  - 2.D.03.02 List advantages and disadvantages of hourly and salaried pay options.
  - 2.D.03.03 Analyze payroll calculations.
  - 2.D.03.04 Distinguish between simple and compound interest.
  - 2.D.03.05 Develop a personal financial statement.
  - 2.D.03.06 Compare and contrast investment strategies to set and achieve financial goals.
  - 2.D.03.07 Explain the purpose of financial documents.

- 2.D.03 Performance Example:
- Students will create a personal budget.

- 2.D.04 Manage financial resources to ensure solvency.
- 2.D.04.01 Describe and apply the fundamentals of accounting.
  - 2.D.04.02 Examine the importance of accounting in a business.
  - 2.D.04.03 Estimate business income and expenses.
  - 2.D.04.04 Prepare standard accounting reports used in business operations.
  - 2.D.04.05 Prepare and maintain financial records.
  - 2.D.04.06 Describe the importance of cost containment in a company.
  - 2.D.04.07 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.

## 2.E Business Operations

- 2.E.01 Develop policies and procedures to protect workplace security.
- 2.E.01.01 Explain the nature and scope of risk management.
  - 2.E.01.02 Describe various ways businesses can manage risk.

- 2.E.01 Performance Example:
- Students will review employee manuals or attend guest speaker presentations to prepare a workplace security policy.

- 2.E.02 Utilize project-management skills to improve workflow and minimize costs.
- 2.E.02.01 Explain how horizontally organized companies differ from vertically organized companies.
  - 2.E.02.02 Define scope of work to achieve individual and group goals.
  - 2.E.02.03 Identify stakeholders and decision makers.
  - 2.E.02.04 Evaluate project requirements including resources and budget.
  - 2.E.02.05 Estimate time requirements.
  - 2.E.02.06 Evaluate risks and develop a contingency plan.
  - 2.E.02.07 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.

- 2.E.03 Implement purchasing procedures to obtain business supplies, equipment and services.
- 2.E.03.01 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.E.03.02 Demonstrate ability to place orders/reorders.
  - 2.E.03.03 Explain how to purchase products and/or services from vendors, sales representatives and trade shows.
  - 2.E.03.04 Explain how purchasing differs between an industrial market and a consumer market.
  - 2.E.03.05 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.

## 2.F Selling

- 2.F.01 Demonstrate foundational knowledge of the principles of selling.
- 2.F.01.01 Define selling.
  - 2.F.01.02 Explain the purpose and goals of the selling function.
  - 2.F.01.03 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.
  - 2.F.01.04 Define Maslow's hierarchy of needs and explain its role in effective selling.
  - 2.F.01.05 Differentiate between emotional and rational buying motives.
  - 2.F.01.06 List the different types of selling situations.
  - 2.F.01.07 List the seven steps of a sale.
  - 2.F.01.08 Develop effective consultation methods to best determine needs and solutions.
  - 2.F.01.09 Identify and develop strategies to increase individual sales performance consistent with company sales goals.

2.F.01 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.

- 2.F.02 Utilize available internal and external data to optimize sales.
- 2.F.02.01 Develop prospecting methods to acquire new customers.
  - 2.F.02.02 Maximize existing relationships with existing customers.
  - 2.F.02.03 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.

## 2.G Channel Management

- 2.G.01 Demonstrate foundational knowledge of channel management.
  - 2.G.01.01 Explain the concept of channel of distribution.
  - 2.G.01.02 Compare channels of distribution for consumer and industrial products.
  - 2.G.01.03 Describe the nature and scope of physical distribution.
  - 2.G.01.04 Explain the effect of the internet on distribution planning.

### 2.G.01 Performance Example:

- Students will illustrate different channels of distribution for consumer or industrial markets.

- 2.G.02 Manage channel activities to minimize costs and to determine distribution strategies.
  - 2.G.02.01 Identify transportation systems and services that move products from manufacturers to consumers.
  - 2.G.02.02 Demonstrate effective practices of receiving, handling and shipping merchandise.
  - 2.G.02.03 Explain the difference between storage and distribution of perishable and non-perishable goods.
  - 2.G.02.04 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.

## 2.H Promotion

- 2.H.01 Demonstrate an understanding of the role of promotion in business and marketing.
  - 2.H.01.01 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.H.01.02 Describe elements of a promotional mix.
  - 2.H.01.03 Identify both traditional and current technology-based promotional tools.
  - 2.H.01.04 Develop a cost-benefit analysis of a promotional plan.

### 2.H.01 Performance Example:

- Students will develop a cost-benefit analysis of a promotional plan for a small local business.

- 2.H.02 Differentiate between paid and unpaid forms of promotional communications with targeted audiences.
  - 2.H.02.01 Explain the concept and purpose of advertising in the promotional mix.
  - 2.H.02.02 Identify the different types of advertising media.
  - 2.H.02.03 Describe the planning and selection of media.
  - 2.H.02.04 Explain the use of public relations activities to communicate with targeted audiences.
  - 2.H.02.05 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.

## 2.I Marketing Information Management

- 2.I.01 Demonstrate foundational knowledge of marketing information management.
  - 2.I.01.01 Describe the purpose of marketing research.
  - 2.I.01.02 Identify multiple methods of conducting marketing research.
  - 2.I.01.03 Identify primary and secondary data sources.
  - 2.I.01.04 Develop data collection methods to determine appropriateness for the research objective.
  - 2.I.01.05 Design a marketing research survey.
  - 2.I.01.06 Describe trends and limitations in marketing research.
  - 2.I.01.07 Identify procedures for gathering information using technology.

### 2.I.01 Performance Example:

- Students will review magazines to choose a product advertisement and identify methods of marketing research they would conduct to market products.

- 2.I.02 Evaluate market research results.

- 2.I.02.01 Provide research analysis reports and present findings.
- 2.I.02.02 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.

## 2.J Entrepreneurship

- 2.J.01 Explain the role of business in a free enterprise system.
  - 2.J.01.01 Define entrepreneurship.
  - 2.J.01.02 List the characteristics and skills of an entrepreneur.
  - 2.J.01.03 Explain the disadvantages and advantages of being an entrepreneur.
  - 2.J.01.04 Compare and contrast forms of ownership.
  - 2.J.01.05 Define legal steps in establishing a business.
  - 2.J.01.06 Measure feasibility of a new business venture.
  - 2.J.01.07 Determine resources needed for a new business to contribute to its startup viability.
  - 2.J.01.08 Explain the importance of small business in various economies.

### 2.J.01 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.

## 2.K Economics

- 2.K.01 Explain the concept of an economy.
  - 2.K.01.01 Cite examples of various economic systems.
  - 2.K.01.02 List the factors of production.
  - 2.K.01.03 Explain the concept of scarcity.
  - 2.K.01.04 List the goals of a healthy economy.
  - 2.K.01.05 Explain how an economy is measured.
  - 2.K.01.06 Analyze the key phases of the business cycle.

- 2.K.01 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.

- 2.K.02 Define the concept of international business.
- 2.K.02.01 Explain the interdependence of nations.
  - 2.K.02.02 Examine balance of trade.
  - 2.K.02.03 Differentiate between the three types of trade barriers.
  - 2.K.02.04 List three significant trade agreements and alliances.
  - 2.K.02.05 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.

- 2.K.03 Identify the role of business in society.
- 2.K.03.01 Explain the characteristics of a free enterprise system.
  - 2.K.03.02 Explain the theory of supply and demand.
  - 2.K.03.03 Compare and contrast for-profit and non-profit organizations.
  - 2.K.03.04 Distinguish between the public and private sectors.
  - 2.K.03.05 Explain the role of government in a free enterprise system.
  - 2.K.03.06 Identify federal regulatory agencies and laws that protect consumers, investors and environment.
  - 2.K.03.07 Provide examples of the impact of government on business.
  - 2.K.03.08 Provide examples of business's social responsibilities.
  - 2.K.03.09 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.

## 2.L Pricing

- 2.L.01 Develop foundational knowledge of pricing in marketing.
- 2.L.01.01 Distinguish between price and non-price competition.
  - 2.L.01.02 Define profit and markup.
  - 2.L.01.03 Distinguish between cost and selling price.
  - 2.L.01.04 Analyze cost of goods sold (COGS) role in pricing.
  - 2.L.01.05 Analyze economics of one unit's role in pricing.
  - 2.L.01.06 Explain return on investment.
  - 2.L.01.07 Name three pricing methods used to establish a base price.
  - 2.L.01.08 Compare and contrast cost-oriented, demand-oriented and competition-oriented pricing methods.
  - 2.L.01.09 Explain legal considerations for pricing.

- 2.L.01 Performance Example:
- Students will identify a product and calculate the profit and markup.

## **2.M Product/Service Management**

- 2.M.01 Demonstrate foundational knowledge of product/service management.
  - 2.M.01.01 Describe the steps in product planning.
  - 2.M.01.02 Identify the four stages of the product life cycle.
  - 2.M.01.03 Apply quality assurances to enhance product/service offerings.
  - 2.M.01.04 Explain the importance of warranties in product planning.
  - 2.M.01.05 Develop return and exchange policies appropriate for your business model.

2.M.01 Performance Example:

- Students will list the strategies used to manage a product during the declining stage of its life cycle.

- 2.M.02 Employ product- mix strategies to meet profit goals.
  - 2.M.02.01 Explain how to develop, maintain and improve a product mix in a dynamic market.
  - 2.M.02.02 Position product/service and brand to acquire desired business image.
  - 2.M.02.03 Describe product positioning techniques.
  - 2.M.02.04 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.

## **2.N Communication Skills**

- 2.N.01 Apply effective skills in all domains of communication.
  - 2.N.01.01 Demonstrate effective verbal and nonverbal communication for appropriate audiences and settings.
  - 2.N.01.02 Exhibit effective listening skills.
  - 2.N.01.03 Employ awareness of cultural differences in communication.
  - 2.N.01.04 Explain how to organize and present your idea in speech and writing.
  - 2.N.01.05 Demonstrate professional communication etiquette using a variety of electronic formats.
  - 2.N.01.06 Exhibit knowledge of your audience, your purpose and your subject.
  - 2.N.01.07 Select and utilize the appropriate formats for professional business writing.

2.N.01 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.

## **2.O Accounting Practices and Procedures**

- 2.O.01 Explain changes that affect the accounting equation.
  - 2.O.01.01 Define and identify accounting terms related to business and changes that affect the accounting equation.
  - 2.O.01.02 Describe how transactions affect accounts in an accounting equation.

2.O.01 Performance Example:

- Students will classify accounts as assets, liabilities, or owner's equity and demonstrate their relationships in the accounting equation.

- 2.O.02 Analyze and record transactions into debit and credit parts.

2.0.02 Performance Examples:  
▪ Students will utilize T accounts to analyze transactions showing which accounts are debited or credited.

2.0.03 Define debit and credit.  
2.0.03.01 Classify transactions into debit and credit parts.  
2.0.03.02 Explain how transactions to set up a business affect accounts.  
2.0.03.03 Analyze how transactions affect owner's equity account.

2.0.03 Performance Example:  
▪ Prove and rule a five-column journal and prove cash.

2.0.04 Journalize Transactions.  
2.0.04.01 Define and identify accounting terms related to journalizing transactions.  
2.0.04.02 Record transactions to set up a business in a five-column journal.  
2.0.04.03 Record transactions to buy insurance for cash and supplies in a five-column journal.  
2.0.04.04 Record transactions that affect owner's equity and receiving cash on account in a five-column journal.

2.0.04 Performance Example:  
▪ Students will complete a business simulation that requires posting to a general ledger.

2.0.05 Post to a General Ledger.  
2.0.05.01 Define and identify terms related to posting from a journal.  
2.0.05.02 Prepare a chart of accounts for a business.  
2.0.05.03 Post separate amounts from a journal to a general ledger.  
2.0.05.04 Post column totals from a journal to a general ledger.  
2.0.05.05 Analyze and journalize correcting entries.

2.0.05 Performance Example:  
▪ Students will transfer/Update an income statement and balance sheet from a previous time period.

2.0.06 Prepare Financial Statements.  
2.0.06.01 Define and identify accounting concepts and practices related to preparation of financial statements for a service business organized as a proprietorship.  
2.0.06.02 Prepare an income statement for a service business organized as a proprietorship and analyze an income statement using component percentages.  
2.0.06.03 Prepare a balance sheet.

2.0.06 Performance Example:  
▪ Students will create an income statement and balance sheet from a five-column journal.

## **2.P Strategic Management**

- 2.P.01 Explain the concepts, systems and tools needed to gather, access, synthesize, evaluate and disseminate information in making business decisions.
- 2.P.01.01 Describe management's role to understand its contribution to business success.
  - 2.P.01.02 Name the three functions of management.
  - 2.P.01.03 Describe the management techniques used by effective managers.
  - 2.P.01.04 Utilize planning tools to guide organization's/department's activities.
  - 2.P.01.05 Identify organizational planning considerations.
  - 2.P.01.06 Describe how to control an organization's/department's activities to encourage growth and development.

2.P.01 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.

## **2.Q Web-based Marketing**

- 2.Q.01 Identify and utilize various electronic media for promotional marketing, information and training and general communications.
- 2.Q.01.01 Develop strategies to develop and/or increase on-line sales.
  - 2.Q.01.02 Explain how to use electronic media as a tool for developing brand recognition and product positioning.
  - 2.Q.01.03 Explain various ways in which a company can utilize its website.
  - 2.Q.01.04 Describe the impact a webpage has on traditional marketing techniques.
  - 2.Q.01.05 Explain the potential impact of a viral event on the Internet.
  - 2.Q.01.06 Describe the lasting impact of a chain of viral activity on the Internet.
  - 2.Q.01.07 Analyze effective viral and buzz marketing strategies.
  - 2.Q.01.08 Analyze social media to develop effective communications with specific target markets.

2.Q.01 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

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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](#)

[Appendix B:](#) [Mathematics](#)

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

Earth and Space Science

Life Science (Biology)

Physical Science (Chemistry and Physics)

Technology/Engineering

## Strand 4: Employability and Career Readiness

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### 4.A Career Exploration and Navigation

- 4.A.01 Develop a career plan and portfolio.
  - 4.A.01.01 Develop and revise career plan annually based on workplace awareness and skill attainment.
  - 4.A.01.02 Assess personal strengths and interest areas to determine potential careers, career pathways and career ladders.
  - 4.A.01.03 Examine potential career field(s)/discipline(s) and identify criteria to select, secure and keep employment in chosen field(s).
  - 4.A.01.04 Research and evaluate a variety of careers utilizing multiple sources of information and resources to determine potential career(s) and alternatives.
  - 4.A.01.05 Identify training and education requirements that lead to employment in chosen field(s) and demonstrate skills related to evaluating employment opportunities.
  - 4.A.01.06 Explore and evaluate postsecondary educational opportunities including degrees and certifications available, traditional and nontraditional postsecondary pathways, technical school and apprenticeships, cost of education, financing methods including scholarships and loans and the cost of loan repayment.
  - 4.A.01.07 Create a portfolio showcasing academic and career growth including a career plan, safety credential, resume and a competency profile demonstrating the acquisition of the knowledge and skills associated with at least two years of full-time study in the Chapter 74 program.
  
- 4.A.02 Demonstrate job search skills.
  - 4.A.02.01 Conduct a job search and complete written and electronic job applications, resumes, cover letters and related correspondence for a chosen career path.
  - 4.A.02.02 Explore and evaluate postsecondary job opportunities and career pathways specific to career technical areas.
  - 4.A.02.03 Identify role and use of social media and networking for staying current with career and employment trends as well as networking, job seeking and career development opportunities.
  - 4.A.02.04 Demonstrate ability to use social media and networking to develop useful occupational contacts, job seeking and career development opportunities.
  
- 4.A.03 Demonstrate all phases of the job interview process.
  - 4.A.03.01 Gather relevant information about potential employer(s) from multiple print and digital sources, assessing the credibility and accuracy of each source.
  - 4.A.03.02 Identify employment eligibility criteria, such as drug/alcohol free status, clean driving record, etc.

- 4.A.03.03 Practice effective interviewing skills: appearance, inquiry and dialogue with interviewer, positive attitude and evidence of work ethic and skills.
- 4.A.03.04 Explore and evaluate employment benefit packages including wages, vacation, health care, union dues, cafeteria plans, tuition reimbursement, retirement and 401K.

4. A Performance Examples:
- Conduct research to analyze and present on specific careers within a cluster.
  - Conduct web-based job search using sites such as Monster.com, CareerBuilder.com, Indeed.com, Snagajob.com, Simplyhired.com and others.
  - Create profile on social media/networking site such as LinkedIn and/or LinkedIn University for postsecondary research and employment opportunities.
  - Complete online job application.
  - Conduct and videotape practice interviews for instructor and student analysis.
  - Provide students with sample employment and benefit packages for evaluation.

#### **4.B Communication in the Workplace**

- 4.B.01 Demonstrate appropriate oral and written communication skills in the workplace.
  - 4.B.01.01 Communicate effectively using the language and vocabulary appropriate to a variety of audiences within the workplace including coworkers, supervisors and customers.
  - 4.B.01.02 Read technical and work-related documents and demonstrate understanding in oral discussion and written exercise.
  - 4.B.01.03 Demonstrate professional writing skills in work-related materials and communications (e.g., letters, memoranda, instructions and directions, reports, summaries, notes and/or outlines).
  - 4.B.01.04 Use a variety of writing/publishing/presentation applications to create and present information in the workplace.
  - 4.B.01.05 Identify, locate, evaluate and use print and electronic resources to resolve issues or problems in the workplace.
  - 4.B.01.06 Use a variety of financial and data analysis tools to analyze and interpret information in the workplace.
  - 4.B.01.07 Orally present technical and work-related information to a variety of audiences.
  - 4.B.01.08 Identify and demonstrate professional non-verbal communication.
- 4.B.02 Demonstrate active listening skills.
  - 4.B.02.01 Listen attentively and respectfully to others.
  - 4.B.02.02 Focus attentively, make eye contact or other affirming gestures, confirm understanding and follow directions.
  - 4.B.02.03 Show initiative in improving communication skills by asking follow-up questions of speaker in order to confirm understanding.

4. B Performance Examples:
- Read and analyze technical instructions to learn what makes them effective.
  - Read and analyze technical instructions to follow directions and/or solve a problem.
  - Examine a technical document and use it to write a set of instructions for another student to follow and evaluate.
  - Analyze websites for effective technical writing and design.
  - Create brochures and presentations using software and/or Web 2.0 tools to convey technical information.
  - Conduct research using the Internet, print documents, observations and interviews to create a technical guide.

#### **4.C Work Ethic and Professionalism**

- 4.C.01 Demonstrate attendance and punctuality.
- 4.C.01.01 Identify and practice professional time-management and attendance behaviors including punctuality, reliability, planning and flexibility.
- 4.C.02 Demonstrate proper workplace appearance.
- 4.C.02.01 Identify and practice professional appearance specific to the workplace.
- 4.C.02.02 Identify and practice personal hygiene appropriate for duties specific to the workplace.
- 4.C.02.03 Identify and wear required safety gear specific to the workplace.
- 4.C.03 Accepts direction and constructive criticism.
- 4.C.03.01 Demonstrate ability (both verbally and non-verbally) to accept direction and constructive criticism and to implement solutions to change behaviors.
- 4.C.03.02 Ask appropriate questions to clarify understanding of feedback.
- 4.C.03.03 Analyze own learning style and seek instructions in a preferred format that works best for their understanding (such as oral, written or visual instruction).
- 4.C.04 Demonstrate motivation and initiative.
- 4.C.04.01 Evaluate assigned tasks for time to completion and prioritization.
- 4.C.04.02 Demonstrate motivation through enthusiasm, engagement, accurate completion of tasks and activities.
- 4.C.04.03 Demonstrate initiative by requesting new assignments and challenges.
- 4.C.04.04 Explain proposed solutions to challenges observed in the workplace.
- 4.C.04.05 Demonstrate the ability to evaluate multiple solutions to problems and challenges using critical reasoning and workplace/industry knowledge and select the best solution to the problem.
- 4.C.04.06 Implement solution(s) to challenges and/or problem(s) observed in the workplace.
- 4.C.04.07 See projects through completion and check work for quality and accuracy.
- 4.C.05 Demonstrate awareness of workplace culture and policy.

- 4.C.05.01 Display ethical behavior in use of time, resources, computers and information.
- 4.C.05.02 Identify the mission of the organization and/or department.
- 4.C.05.03 Explain the benefits of a diverse workplace.
- 4.C.05.04 Demonstrate a respect for diversity and its benefit to the workplace.
  
- 4.C.06 Interact appropriately with coworkers.
  - 4.C.06.01 Work productively with individuals and in teams.
  - 4.C.06.02 Develop positive mentoring and collaborative relationships within work environment.
  - 4.C.06.03 Show respect and collegiality, both formally and informally.
  - 4.C.06.04 Explain and follow workplace policy on the use of cell phones and other forms of social media.
  - 4.C.06.05 Maintain focus on tasks and avoid negative topics or excessive personal conversations in the workplace.
  - 4.C.06.06 Negotiate solutions to interpersonal and workplace conflicts.

4. C Performance Examples:

- Complete a learning style analysis tool.
- Develop a rubric to assess work ethic and professionalism as detailed in the standards above.

### Student Organizations

Business Professionals of America

[www.bpa.org](http://www.bpa.org)

### *Selected Websites*

- 5 Ways to Ace a Job Interview: [http://kidshealth.org/teen/school\\_jobs/jobs/tips\\_interview.html](http://kidshealth.org/teen/school_jobs/jobs/tips_interview.html)
- America’s Career Resource Network: <http://acrn.ovae.org/teachers/careerexpclassrm.htm>
- Career Cruiser – Florida Department of Education: <http://www.fldoe.org/workforce/pdf/cruiser.pdf>
- Career Development Guide and Glossary: <http://www.doe.mass.edu/connect/cde.html>
- Career One Stop: <http://www.careeronestop.org/>
- Career Plan: <http://www.doe.mass.edu/cd/plan/intro.html>
- Career Plan Model: [http://www.doe.mass.edu/ccr/epp/samples/cpmodel\\_11x17.pdf](http://www.doe.mass.edu/ccr/epp/samples/cpmodel_11x17.pdf)
- Checklist: <http://www.doe.mass.edu/cd/plan/checklist.pdf>
- Career Tech: [http://www.okcareertech.org/cac/Pages/resources\\_products/ethics\\_web\\_sites.htm](http://www.okcareertech.org/cac/Pages/resources_products/ethics_web_sites.htm)
- Ethics Resource Center: <http://www.ethics.org/>
- Interaction in the Workplace: <http://hrweb.berkeley.edu/guides/managing-hr/interaction/communication>
- Individual Learning Plans: How-to Guide: “Promoting Quality Individualized Learning Plans: A How to Guide on the High School Years” <http://www.ncwd-youth.info/ilp/how-to-guide>

- ILP Fact Sheet: <http://www.ncwd-youth.info/fact-sheet/individualized-learning-plan>
- ILP Policy Brief: <http://www.ncwd-youth.info/ilp/produce-college-and-career-ready-high-school-graduates>
- ILP Resources Home Page: <http://www.ncwd-youth.info/ilp>
- Interview Skills Lesson Plans:  
<http://www.amphi.com/media/1220281/interview%20skills%20lesson%20plan.doc>
- Labor and Workforce Development: <http://www.mass.gov/lwd/employment-services/preparing-for-your-job-search/>
- Maine Community College System – Center for Career Development:  
[http://www.ccd.me.edu/careerprep/CareerPrepCurriculum\\_LP-6.pdf](http://www.ccd.me.edu/careerprep/CareerPrepCurriculum_LP-6.pdf)
- Massachusetts Work-Based Learning: <http://skillspages.com/masswbl>
- North Dakota Association of Agriculture Educators:  
[http://www.ndaae.org/attachments/File/Preparing\\_students\\_for\\_a\\_Job\\_Interview.pptx](http://www.ndaae.org/attachments/File/Preparing_students_for_a_Job_Interview.pptx)
- NY CTE Learning Standards—Career Development and Occupational Studies (CDOS) Resource Guide with Core Curriculum: <http://www.p12.nysed.gov/cte/cdlearn/cdosresourceguide.html>
- Occupational Outlook Handbook: <http://www.bls.gov/ooh/>
- Purdue OWL Job Search Resources (for writing resumes, applications, and letters):  
<https://owl.english.purdue.edu/engagement/34/>
- Soft Skills to Pay the Bills — Mastering Soft Skills for Workplace Success:  
<http://www.dol.gov/odep/topics/youth/softskills/>
- US Department of Labor: <http://www.dol.gov/dol/audience/aud-unemployed.htm>
- Workplace Communication:  
<http://www.regionalskillstraining.com/sites/default/files/content/WC%20Book%201.pdf>
- Your Plan For the Future: <http://www.yourplanforthefuture.org>

## Strand 5: Management and Entrepreneurship Knowledge and Skills

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### 5.A Starting a Business

- 5.A.01 Demonstrate an understanding of the practices required to start a business.
- 5.A.01.01 Define entrepreneurship and be able to recognize and describe the characteristics of an entrepreneur.
  - 5.A.01.02 Compare and contrast types of business ownership (i.e., sole proprietorships, franchises, partnerships, corporations).
  - 5.A.01.03 Identify and explain the purpose and contents of a business plan.
  - 5.A.01.04 Demonstrate an understanding of the principles and concepts of a business's supply chain (i.e., suppliers, producers and consumers).

5. A Performance Examples:

- Develop a presentation pertaining to an entrepreneur and their business.
- Communicate with a business owner and discuss the pros and cons of starting and owning a business. Summarize the main points of the discussion.
- Choose a product or service and describe the process leading to distribution.
- Write a business plan for a business in your community.

### 5.B Managing a Business

- 5.B.01 Demonstrate an understanding of managing a business.
- 5.B.01.01 Formulate short- and long-term business goals.
  - 5.B.01.02 Demonstrate effective verbal, written and visual communication skills.
  - 5.B.01.03 Utilize a decision-making process to make effective business decisions.
  - 5.B.01.04 Identify a business's chain of command and define its organizational structure.
  - 5.B.01.05 Identify and apply effective customer service skills and practices.
  - 5.B.01.06 Identify, interpret and develop written operating procedures and policies.
  - 5.B.01.07 Track inventory, productivity and labor cost.
  - 5.B.01.08 Demonstrate business meeting skills.
  - 5.B.01.09 Identify professional organizations and explore their benefits.

5. B Performance Examples:

- Working as a team, role-play situations that an entrepreneur might face in dealing with customers or employees.
- Contact a relevant professional organization and request information about its benefits, membership requirements and costs.
- Plan and conduct a business meeting.
- Identify companies that are known for customer service and list the practices that help differentiate themselves from all others in their industry.

### 5.C Marketing a Business

- 5.C.01 Demonstrate an understanding of marketing and promoting a business.
- 5.C.01.01 Explain the role of business in the economy.
  - 5.C.01.02 Describe the relationship between business and community.
  - 5.C.01.03 Describe methods of market research and identifying target markets.

- 5.C.01.04 Describe and apply the concepts of a marketing mix (the 4Ps of marketing: product, price, place and promotion).
- 5.C.01.05 Compare and contrast the promotional tools and techniques used to sell products, services, images and ideas.
- 5.C.01.06 Describe the impact of supply and demand on a product or business.
- 5.C.01.07 Identify direct and indirect competition on a business.
- 5.C.01.08 Identify and use sales techniques to meet client needs and wants.
- 5.C.01.09 Discuss strategies to acquire and retain a customer base.

5. C Performance Examples:
- Research reliable sources to identify marketing and industry data related to a business.
  - Conduct market research by developing a survey and presenting the results.
  - Create a promotional campaign using a variety of media.
  - Write a marketing plan for a product.

## 5.D Financial Concepts and Applications in Business

- 5.D.01 Demonstrate an understanding of financial concepts and applications.
  - 5.D.01.01 Identify essential financial reports and understand their purpose (i.e., budget, balance sheet and income statement).
  - 5.D.01.02 Describe payroll practices (i.e., deductions – federal, FICA and state taxes and insurances).
  - 5.D.01.03 Identify the importance of maintaining accurate records.
  - 5.D.01.04 Apply practices related to pricing, purchasing and billing.
  - 5.D.01.05 Maintain and reconcile a checking account.
  - 5.D.01.06 Identify the options for funding a business.

5. D Performance Examples:
- Given an employee time card and rate of pay, calculate gross pay, taxes, deductions and net pay.
  - Develop a budget for a simulated business or project.
  - Analyze and discuss financial documents from a company.
  - Research various methods of funding a business.

## 5.E Legal/Ethical/Social Responsibilities

- 5.E.01 Demonstrate an understanding of legal, ethical and social responsibility for businesses.
  - 5.E.01.01 Identify state and federal laws and regulations related to managing a business.
  - 5.E.01.02 Describe and identify ethical business practices.
  - 5.E.01.03 Demonstrate an understanding of business contracts.
  - 5.E.01.04 Explain the role of diversity in the workplace.
  - 5.E.01.05 Explain the role of labor organizations.
  - 5.E.01.06 Identify practices that support clean energy technologies and encourage environmental sustainability.
  - 5.E.01.07 Demonstrate an understanding of how technology advancements impact business practices.

- 5.E Performance Example:
- Read and interpret a contract.
  - Complete an application for a license, permit or certificate.
  - Research federal, state and local regulations and laws required for a business.
  - Participate in and summarize a discussion with a member of a labor or civil rights organization.

### *Selected Websites*

- CVTE Strand 1, 4, and 5 Resources: <https://sites.google.com/a/mccanntech.org/cvte-strands-1-4-and-5-resources/>
- Entrepreneur: <http://www.entrepreneur.com>
- Inc. Magazine: <http://www.inc.com/>
- Junior Achievement “Be Entrepreneurial Program”: <https://www.juniorachievement.org/web/ja-usa/home>
- Kahn Academy Interviews with Entrepreneurs: <https://www.khanacademy.org/economics-finance-domain/entrepreneurship2/interviews-entrepreneurs>
- Kauffman Founders School: <http://www.entrepreneurship.org/en/founders-school.aspx>
- National Federation of Independent Business: [www.nfib.com](http://www.nfib.com)
- National Foundation for Teaching Entrepreneurship (NFTE): [www.nfte.com](http://www.nfte.com)
- SBA Loans: <http://www.sba.gov>
- SkillsUSA Professional Development Program Competency List: <http://www.skillsusa.org/downloads/PDF/lessons/professional/PDPPreview.pdf>
- Small Business Administration: [www.sba.gov](http://www.sba.gov)

### *Glossary*

<b>Term</b>	<b>Definition</b>
Balance sheet	A statement of the assets, liabilities and capital of a business at a particular point in time.
Budget	An estimate of income and expenditure for a set period of time.
Business Ownership	Types of business ownership refer to the legal structure of an organization. Legal structures include: Sole Proprietorship, Partnerships, Corporations and Limited Liability Companies.
Business Plan	A written document that describes in detail your business goals and how you are going to achieve them from a marketing, operational and financial point of view.

**Term**

Chain of Command and Organizational Structure

**Definition**

Refers to the management structure of an organization. It identifies lines of authority, lines of communication, and reporting relationships. Organizational structure determines how the roles, power and responsibilities are assigned and coordinated and how information flows between the different levels of management. (A visual representation of this structure is called an org chart).

FICA

Federal Insurance Contributions Act requires taxes deducted from pay for supporting Social Security.

Income Statement

A financial statement providing operating results for a specific time period showing a business's revenues, expenses and profit or loss.

Market Research

- Primary: Surveys, Focus Groups, Observation
- Secondary: Websites, Internet

Marketing Mix

A set of controlled variables that formulate the strategic position of a product or service in the marketplace. These variables are known as the 4 P's of marketing and include product, place, price and promotion.

Methods to Track Inventory, Productivity and Labor Cost

Refers to the processes a business uses to account for: 1) the inflows and outflows of inventory and materials related to inventory; 2) the efficiency of operations and 3) the cost of labor including salary and benefits.

Promotional Tools and Techniques

The six elements of a promotional mix are: advertising, visual merchandising, public relations, publicity, personal selling and sales promotion.

Supply Chain

The supply chain, or channel of distribution, describes how the product is handled and/or distributed from suppliers with materials, to the manufacturer, wholesaler or retailer and finally to the consumer.

Target Market

Those who are most likely to buy your product or service.

## Strand 6: Technology Literacy Knowledge and Skills

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### 6.A Technology Literacy Knowledge and Skills (Grades 9 through 12)

- 6.A.01 Demonstrate proficiency in the use of computers and applications, as well as an understanding of the concepts underlying hardware, software, and connectivity.
  - 6.A.01.01 Use online help and other support to learn about features of hardware and software, as well as to assess and resolve problems.
  - 6.A.01.02 Install and uninstall software; compress and expand files (if the district allows it).
  - 6.A.01.03 Explain effective backup and recovery strategies.
  - 6.A.01.04 Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, and styles) to improve the appearance of documents and materials.
  - 6.A.01.05 Use editing features appropriately (e.g., track changes, insert comments).
  - 6.A.01.06 Identify the use of word processing and desktop publishing skills in various careers.
  - 6.A.01.07 Identify the use of database skills in various careers.
  - 6.A.01.08 Define and use functions of a spreadsheet application (e.g., sort, filter, find).
  - 6.A.01.09 Explain how various formatting options are used to convey information in charts or graphs.
  - 6.A.01.10 Identify the use of spreadsheet skills in various careers.
  - 6.A.01.11 Use search engines and online directories.
  - 6.A.01.12 Explain the differences among various search engines and how they rank results.
  - 6.A.01.13 Explain and demonstrate effective search strategies for locating and retrieving electronic information (e.g., using syntax and Boolean logic operators).
  - 6.A.01.14 Describe good practices for password protection and authentication.
- 6.A.02 Demonstrate the responsible use of technology and an understanding of ethics and safety issues in using electronic media at home, in school, and in society.
  - 6.A.02.01 Demonstrate compliance with the school's Acceptable Use Policy.
  - 6.A.02.02 Explain issues related to the responsible use of technology (e.g., privacy, security).
  - 6.A.02.03 Explain laws restricting the use of copyrighted materials.
  - 6.A.02.04 Identify examples of plagiarism, and discuss the possible consequences of plagiarizing the work of others.
- 6.A.03 Design and implement a personal learning plan that includes the use of technology to support lifelong learning goals.
  - 6.A.03.01 Evaluate the authenticity, accuracy, appropriateness, and bias of electronic resources, including Web sites.
  - 6.A.03.02 Analyze the values and points of view that are presented in media messages.
  - 6.A.03.03 Describe devices, applications, and operating system features that offer accessibility for people with disabilities.

- 6.A.03.04 Evaluate school and work environments in terms of ergonomic practices.
- 6.A.03.05 Describe and use safe and appropriate practices when participating in online communities (e.g., discussion groups, blogs, and social networking sites).
- 6.A.03.06 Explain and use practices to protect one's personal safety online (e.g., not sharing personal information with strangers, being alert for online predators, reporting suspicious activities).
- 6.A.03.07 Explain ways individuals can protect their technology systems and information from unethical users.
- 6.A.04 Demonstrate the ability to use technology for research, critical thinking, problem solving, decision making, communication, collaboration, creativity, and innovation.
  - 6.A.04.01 Devise and demonstrate strategies for efficiently collecting and organizing information from electronic sources.
  - 6.A.04.02 Compare, evaluate, and select appropriate electronic resources to locate specific information.
  - 6.A.04.03 Select the most appropriate search engines and directories for specific research tasks.
  - 6.A.04.04 Use a variety of media to present information for specific purposes (e.g., reports, research papers, presentations, newsletters, Web sites, podcasts, blogs), citing sources.
  - 6.A.04.05 Demonstrate how the use of various techniques and effects (e.g., editing, music, color, rhetorical devices) can be used to convey meaning in media.
  - 6.A.04.06 Use online communication tools to collaborate with peers, community members, and field experts as appropriate (e.g., bulletin boards, discussion forums, listservs, Web conferencing).
  - 6.A.04.07 Plan and implement a collaborative project with students in other classrooms and schools using telecommunications tools (e.g., e-mail, discussion forums, groupware, interactive Web sites, video conferencing).

## Appendices

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The framework teams created an “Appendix” listing potential industry recognized credentials attainable by secondary students; lists of professional, student, and relevant government organizations; and useful resources and websites. ***\* It is important to note that although most Framework Teams provided information for the “Appendix”, not all teams did. Therefore, sub-headings within the “Appendix” without information have been deleted.***

***Disclaimer: Reference in the Appendices Section to any specific commercial products, processes, or services, or the use of any trade, firm or corporation name is for the information and convenience of the public, and does not constitute endorsement or recommendation by the Massachusetts Department of Elementary and Secondary Education.***

## Embedded Academic Crosswalks

### Embedded English Language Arts and Literacy

CVTE Learning Standard Number	Strand Coding Designation Grades ELAs Learning Standard Number	Text of English Language Arts Learning Standard
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: <ul style="list-style-type: none"> <li>Students will analyze data and create a written marketing plan including SWOT analysis, customer profiles, financial reports, and analysis of target markets/demographics.</li> </ul>		
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 sequences
Performance Example: <ul style="list-style-type: none"> <li>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.</li> </ul>		
2.Q.01	W Grades 9-12 #6	Use technology, including the internet, to produce and publish writing and to interact and collaborate with others
Performance Example: <ul style="list-style-type: none"> <li>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.</li> </ul>		
2.I.01-04 2.E.04	W Grades 9-12 #7 W 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: <ul style="list-style-type: none"> <li>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.</li> </ul>		
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: <ul style="list-style-type: none"> <li>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.</li> </ul>		
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, and audience

<p>Performance Example:</p> <ul style="list-style-type: none"> <li>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.</li> </ul>		
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 reference materials, as appropriate.
<p>Performance Example:</p> <ul style="list-style-type: none"> <li>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.</li> </ul>		
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; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.
<p>Performance Example:</p> <ul style="list-style-type: none"> <li>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.</li> </ul>		
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 text
<p>Performance Example:</p> <ul style="list-style-type: none"> <li>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.</li> </ul>		
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.
<p>Performance Example:</p> <ul style="list-style-type: none"> <li>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.</li> </ul>		

## Embedded Mathematics

CVTE Learning Standard Number	Math Content Conceptual Category and Domain Code Learning Standard Number	Text of Mathematics Learning Standard
2.C.01	N-Q1-3 A-REI 1-3 S-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.
<b>Performance Example:</b> <ul style="list-style-type: none"> <li>Using marketing research, students will develop a marketing plan for products and services.</li> </ul>		
2.C.03	N-Q1-3 A-APR 1 A-CED1-4 A-SSE 1,3 A-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.
<b>Performance Example:</b> <ul style="list-style-type: none"> <li>Students will develop a marketing plan based on statistical research.</li> </ul>		
2.D.01	N-Q1-3 A-APR 1 A-CED1-4 A-SSE 1,3 A-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.
<b>Performance Example:</b> <ul style="list-style-type: none"> <li>Students will open/close and calculate the financial impact for the steps for all types of sales.</li> </ul>		
2.D.02	A-SSE1-4 A-APR 1 A-CED1-4 F-IF 4-6 F-BF 1a-c S-ID 1-9 S-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.
<b>Performance Example:</b> <ul style="list-style-type: none"> <li>Students will identify and calculate the cost associated with doing business.</li> </ul>		
2.E.02	N-Q1-3 A-APR 1 A-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.
<b>Performance Example:</b> <ul style="list-style-type: none"> <li>Students will calculate the cost of operations.</li> </ul>		
2.E.03	N-Q1-3 A-APR 1 A-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.
<b>Performance Example:</b> <ul style="list-style-type: none"> <li>Students will assemble and complete purchase orders and associated calculations.</li> </ul>		
2.J.01	N-Q1-3 A-APR 1 A-CED1-4 A-SSE 1,3 A-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: <ul style="list-style-type: none"> <li>Students will develop a marketing plan based on statistical research.</li> </ul>		
2.K.01	N-Q1-3 A-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: <ul style="list-style-type: none"> <li>Students will calculate the impact of inflation on prices.</li> </ul>		
2.K.01	N-Q1-3 A-APR 1 A-CED1-4 A-SSE 1,3 A-REI 1-3 S-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: <ul style="list-style-type: none"> <li>Students will determine the optimal pricing for market conditions</li> </ul>		
2.L.01	N-Q1-3 A-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: <ul style="list-style-type: none"> <li>Students will determine the optimal pricing strategy for products or services for a geographic area.</li> </ul>		

## Embedded Science and Technology/Engineering

### *Life Science (Biology)*

CVTE Learning Standard Number	Subject Area, Topic Heading and Learning Standard Number	Text of Biology Learning Standard
2.E.01	Biology SIS 2	<p>SIS2. Design and conduct scientific investigations.</p> <p>Articulate and explain the major concepts being investigated and the purpose of an investigation.</p> <p>Select required materials, equipment, and conditions for conducting an experiment.</p> <p>Identify independent and dependent variables.</p> <p>Write procedures that are clear and replicable.</p> <p>Employ appropriate methods for accurately and consistently</p> <ul style="list-style-type: none"> <li>○ making observations</li> <li>○ making and recording measurements at appropriate levels of precision</li> <li>○ collecting data or evidence in an organized way</li> </ul> <p>Properly use instruments, equipment, and materials (e.g., scales, probeware, meter sticks, microscopes, computers) including set-up, calibration (if required), technique, maintenance, and storage.</p> <p>Follow safety guidelines.</p>

<p>Performance Example:</p> <ul style="list-style-type: none"> <li>Students will design and conduct their own experiments on which policies and procedures work best in a workplace.</li> </ul>		
2.E.02	Biology SIS 1	<p>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.</p> <p>Read, interpret, and examine the credibility and validity of scientific claims in different sources of information, such as scientific articles, advertisements, or media stories.</p>
<p>Performance Example:</p> <ul style="list-style-type: none"> <li>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.</li> </ul>		
2.G.02	SIS 2	<p>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</p> <ul style="list-style-type: none"> <li>making observations</li> <li>making and recording measurements at appropriate levels of precision</li> <li>collecting data or evidence in an organized way</li> </ul> <p>Properly use instruments, equipment, and materials (e.g., scales, probeware, meter sticks, microscopes, computers) including set-up, calibration (if required), technique, maintenance, and storage.</p> <p>Follow safety guidelines.</p>
<p>Performance Example:</p> <ul style="list-style-type: none"> <li>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.</li> </ul>		
2.D.01	Biology Mathematical Skills	<p>Students are expected to know the content of the <i>Massachusetts Mathematics Curriculum Framework</i>, through grade 8. Below are some specific skills from the <i>Mathematics Framework</i> that students in this course should have the opportunity to apply:</p> <ul style="list-style-type: none"> <li>✓ Construct and use tables and graphs to interpret data sets.</li> <li>✓ Solve simple algebraic expressions.</li> <li>✓ Perform basic statistical procedures to analyze the center and spread of data.</li> <li>✓ Measure with accuracy and precision (e.g., length, volume, mass, temperature, time)</li> <li>✓ Convert within a unit (e.g., centimeters to meters).</li> <li>✓ Use common prefixes such as <i>milli-</i>, <i>centi-</i>, and <i>kilo-</i>.</li> <li>✓ Use scientific notation, where appropriate.</li> <li>✓ Use ratio and proportion to solve problems.</li> </ul>
<p>Performance Example:</p> <ul style="list-style-type: none"> <li>Students will create a spreadsheet of accounting records.</li> </ul>		

2.H.02	Biology SIS 1	<p>SIS1. Make observations, raise questions, and formulate hypotheses.</p> <p>Observe the world from a scientific perspective. Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.</p> <p>Read, interpret, and examine the credibility and validity of scientific claims in different sources of information, such as scientific articles, advertisements, or media stories.</p>
<p>Performance Example:</p> <ul style="list-style-type: none"> <li>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</li> </ul>		
2.O.02	Biology Mathematical Skills	<p>Students are expected to know the content of the <i>Massachusetts Mathematics Curriculum Framework</i>, through grade 8. Below are some specific skills from the <i>Mathematics Framework</i> that students in this course should have the opportunity to apply:</p> <p>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 <i>milli-</i>, <i>centi-</i>, and <i>kilo-</i>. Use scientific notation, where appropriate. Use ratio and proportion to solve problems.</p>
<p>Performance Example:</p> <ul style="list-style-type: none"> <li>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.</li> </ul>		
2.P.01	Biology SIS 3	<p>SIS3. Analyze and interpret results of scientific investigations. Present relationships between and among variables in appropriate forms.</p> <ul style="list-style-type: none"> <li>Represent data and relationships between and among variables in charts and graphs.</li> <li>Use appropriate technology (e.g., graphing software) and other tools.</li> </ul> <p>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.</p>
<p>Performance Example:</p> <ul style="list-style-type: none"> <li>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.</li> </ul>		

## Technology/Engineering

CVTE Learning Standard Number	Subject Area, Topic Heading and Learning 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, and redesign.
Performance Example: <ul style="list-style-type: none"> <li>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.</li> </ul>		
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, and redesign.
Performance Example: <ul style="list-style-type: none"> <li>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 the problem has been resolved.</li> </ul>		
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, and redesign.
Performance Example: <ul style="list-style-type: none"> <li>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</li> </ul>		
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, and redesign.
Performance Example: <ul style="list-style-type: none"> <li>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.</li> </ul>		
2.I.02	Technology Mathematical Skills	<ul style="list-style-type: none"> <li>✓ Construct and use tables and graphs to interpret data sets.</li> <li>✓ Solve simple algebraic expressions.</li> <li>✓ Perform basic statistical procedures to analyze the center and spread of data.</li> </ul>

		<ul style="list-style-type: none"> <li>✓ Measure with accuracy and precision (e.g., length, volume, mass, temperature, time)</li> <li>✓ Use both metric/standard international (SI) and U.S. Customary (English) systems of measurement.</li> <li>✓ Convert within a unit (e.g., centimeters to meters, inches to feet).</li> <li>✓ Use common prefixes such as <i>milli-</i>, <i>centi-</i>, and <i>kilo-</i>.</li> <li>✓ Use scientific notation, where appropriate.</li> <li>✓ Use ratio and proportion to solve problems.</li> </ul>
<p>Performance Example:</p> <ul style="list-style-type: none"> <li>• 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.</li> </ul>		
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 been modified to advance society, and explain why and how they were modified.
<p>Performance Example:</p> <ul style="list-style-type: none"> <li>• 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.</li> </ul>		
2.O.03- 2.O.05	Technology /Engineering Mathematical Skills	<ul style="list-style-type: none"> <li>✓ Construct and use tables and graphs to interpret data sets.</li> <li>✓ Solve simple algebraic expressions.</li> <li>✓ Perform basic statistical procedures to analyze the center and spread of data.</li> <li>✓ Measure with accuracy and precision (e.g., length, volume, mass, temperature, time)</li> <li>✓ Use both metric/standard international (SI) and U.S. Customary (English) systems of measurement.</li> <li>✓ Convert within a unit (e.g., centimeters to meters, inches to feet).</li> <li>✓ Use common prefixes such as <i>milli-</i>, <i>centi-</i>, and <i>kilo-</i>.</li> <li>✓ Use scientific notation, where appropriate.</li> </ul> <p>Use ratio and proportion to solve problems.</p>
<p>Performance Example:</p> <ul style="list-style-type: none"> <li>• 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.</li> </ul>		
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 were modified.
<p>Performance Example:</p> <ul style="list-style-type: none"> <li>• 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.</li> </ul>		

## Social Science and History

CVTE Learning Standard Number	Subject Area, Topic Heading and Learning 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: <ul style="list-style-type: none"> <li>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.).</li> </ul>		
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: <ul style="list-style-type: none"> <li>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.</li> </ul>		
2.D.04	Economics 1.10	Formulate a savings or financial investment plan for a future goal (e.g., college or retirement).
Performance Example: <ul style="list-style-type: none"> <li>Students must compare investment in a business to saving for retirement.</li> </ul>		
2.F.01	Economics 2.2	Describe the role of buyers and sellers in determining the equilibrium price.
Performance Example: <ul style="list-style-type: none"> <li>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.</li> </ul>		
2.F.02	Economics 2.4	Recognize that consumers ultimately determine what is produced in a market economy (consumer sovereignty).
Performance Example: <ul style="list-style-type: none"> <li>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.</li> </ul>		
2.K.01	Economics 1.1	Define each of the productive resources (natural, human, capital) and explain why they are necessary for the production of goods and services.
Performance Example: <ul style="list-style-type: none"> <li>Students will create two column notes on the concept of economy.</li> </ul>		
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 production decisions of households, firms, and government.
Performance Example: <ul style="list-style-type: none"> <li>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.</li> </ul>		

## DESE Statewide Articulation Agreements

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No Statewide Articulation Agreements at this time.

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

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- 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.

## Other

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### Reference Materials

- MarkEd National Standards
- National Retailer Federation National Standards
- Glencoe McGraw-Hill, Glencoe Marketing Essentials, 2006-2012 Editions
- MBA Research and Curriculum Center,  
<http://www.mbaresearch.org/2.0/Joomla/images/PDFs/FinalMarketingClusterReport11-19-2007.pdf>
- National Retailers Federation Customer Service Standards

### Related National, Regional, and State Professional Organizations

- MBA Research and Curriculum Center
- Business Educators Association
- American Marketing Association (AMA)
- MarkEd
- National Retailer Federation
- Public Relations Society of America (PRSA)
- National Banking Foundation

### Student Organizations

- Distributive Education Clubs of America, (DECA)
- Public Relations Student Society of America (PRSSA)
- Skills USA

### Selected Websites

- American Marketing Association - [www.marketingpower.com/](http://www.marketingpower.com/)
- MBA Research and Curriculum Center - [www.mbaresearch.org/](http://www.mbaresearch.org/)
- National Retail Federation - [www.nrf.com/](http://www.nrf.com/)
- PRSSA: Public Relations Student Society of America - [www.prssa.org/](http://www.prssa.org/)
- Business Professionals of America - [www.bpa.org/](http://www.bpa.org/)
- DECA, Distributive Education Clubs of America - [www.deca.org/](http://www.deca.org/)
- SkillsUSA – [www.skillsusa.org](http://www.skillsusa.org)
- Marketing Resources and Strategies for Marketing Professionals - [www.marketingprofs.com/](http://www.marketingprofs.com/)