



Vocational Technical Education Framework



Arts & Communication Services Occupational Cluster

Design & Visual Communications (VDVC)

CIP Code 500401

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Massachusetts Department of Elementary and Secondary Education
Office for Career/Vocational Technical Education
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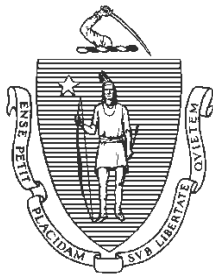
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Commissioner's Letter



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Mitchell D. Chester, Ed.D.
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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

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.

Appendix¹

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 Appendix² 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.

¹ *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.*

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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.

Arts & Communication Services Occupational Cluster

Design & Visual Communications Framework (VDVC)

Strand 1: Safety and Health Knowledge and Skills

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
- Centers for Disease Control and Prevention: www.cdc.gov
- Environmental Protection Agency : 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
- Massachusetts Department of Elementary and Secondary Education: www.doe.mass.edu
- Massachusetts Emergency Management Agency: www.mass.gov/eopss/agencies/mema
- Massachusetts General Law: www.malegislature.gov
- Massachusetts Health and Human Services: 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
- National Fire Protection Association: 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
- Readiness and Emergency Management for Schools: www.rems.ed.gov
- Safe and Healthy Learning Environments: www.doe.mass.edu/ssce/safety.html

Strand 2: Technical Knowledge and Skills

2.A Fundamentals of Design and Visual Communications Health and Safety

- 2.A.01 Define health and safety concerns specific to Design and Visual Communications.
- 2.A.01.01 Identify the location of safety equipment within the DVC shop area, such as: first aid kit, fire escape routes, fires alarms, eye wash station, fire extinguishers, SDS sheets, specialized shop equipment, and hazardous materials.
- 2.A.01.02 Identify safety and emergency procedures for the shop, and emergency phone numbers.
- 2.A.01.03 Identify copyright infringement laws.
- 2.A.01.04 Identify internet safety procedures.
- 2.A.01.05 Identify principles of ergonomics.
- 2.A.01.06 Identify OSHA recommendations specific to the Design and Visual Communications field.

2.A.01 Performance Examples:

- On a shop map, indicate the location of all relevant safety items and equipment.
- Be able to role play the correct procedure for different emergency scenarios.
- Research and present OSHA recommendations relevant to the Design and Visual Communications field.

- 2.A.02 Demonstrate health and safety practices specific to Design and Visual Communications.
- 2.A.02.01 Demonstrate proper handling of utility knives, safe storage of blades, and safe disposal of used blades.
- 2.A.02.02 Demonstrate the proper use of paper cutters.
- 2.A.02.03 Demonstrate safe handling of aerosol adhesives by wearing a mask/ventilator or spraying in well ventilated areas only, and the use of a spray booth.
- 2.A.02.04 Demonstrate safety habits to protect vision, such as wearing safety glasses when photographing areas that require safety glasses and by limiting the amount of time spent focusing on computer screens.
- 2.A.02.05 Demonstrate safety awareness, while photographing subjects from ladders, step stools, stairs or staging by applying OSHA standards for ladder safety.
- 2.A.02.06 Demonstrate safety awareness when using cords or studio lighting by applying OSHA standards for those items.
- 2.A.02.07 Demonstrate safety awareness in protecting equipment from damage, such as preventing photography or video cameras from falls, bumps, water or extreme temperatures.
- 2.A.02.08 Demonstrate safe internet practices (e.g., protecting ones online image).
- 2.A.02.09 Demonstrate safe network practices, such as following school protocol.
- 2.A.02.10 Follow copyright infringement laws.
- 2.A.02.11 Explain bullying, harassment, and discrimination laws, and school policies.

2.A.02 Performance Examples:

- Complete a written and performance safety test for each safety category.
- Identify hazards and incorrect procedures in “task completion role playing”.
- Demonstrate the correct posture and procedure for working at a computer station.
- Research then present strategies to prevent bullying, harassment or discrimination, which also foster acceptance, teamwork and reduced stress.
- Research, and then create a shop safety poster.

2.B Fundamentals of Design

2.B.01 Describe and apply Elements of Design.

2.B.01.01 Describe and apply Elements of Design to design work, including line, shape, form, color, value, texture, space, and size.

2.B.01 Performance Examples:

- Create a digital presentation defining a design element with visual examples. Create artwork demonstrating a strong use of one or two of the design elements such as positive and negative space rendered in black and white.
- Give a critique of art/design work based on the use of design elements.
- Create a graphic work, which focuses on strong use of one design element such as color, line, or texture.

2.B.02 Describe and apply Principles of Design.

2.B.02.01 Describe and apply Principles of Design to design work, including contrast, repetition, alignment, proximity, balance, movement, rhythm, emphasis, pattern, and unity.

2.B.02.02 Describe and apply principles of visual hierarchy in regards to composition.

2.B.02 Performance Examples:

- Research and then present an artist, whose work demonstrates a clear use of a design principle, then create a unique piece utilizing the artist's application method.
- Create a poster where the use of design principles and visual hierarchy is clearly identifiable.
- Identify the use of design principles within a work and its level of success as a whole.

2.B.03 Demonstrate an understanding of typography.

2.B.03.01 Describe the basic anatomy and history of typography.

2.B.03.02 Define and demonstrate the manipulation of type (i.e. Kerning, tracking, and leading).

2.B.03.03 Describe and apply typography measurements and tools (points, picas, etc).

2.B.03.04 List typographic styles and explain their relationship to a design project.

2.B.03.05 Demonstrate and apply techniques of font management for outsourcing to various media.

2.B.03 Performance Examples:

- Design a poster that identifies and labels the fundamental structures of type, using the standard terms (ascender, descender, mean-line, base-line, font size, etc.) and also demonstrates the differences between a serif and sans serif font.
- Design a business card, showing three different typeface options.
- Design a logo using letterforms only.
- Create a self-portrait, using one typeface and meaningful words in various point sizes and styles (bold, italic, regular, etc.)
- Find three existing logos, which are typographic and explain how they relate to the company they represent.

2.B.04 Demonstrate and apply an understanding of color theory.

- 2.B.04.01 Demonstrate and apply an understanding of color theory as it applies to fine art, design, and digital media.
- 2.B.04.02 Demonstrate and apply an understanding of the color wheel and its component parts, including primaries, secondaries, tertiaries, compliments, color schemes, etc.
- 2.B.04.03 Introduce the seven designations of color contrast by Johannes Itten.
- 2.B.04.04 Explain the difference between additive and subtractive color principles.
- 2.B.04.05 Define and demonstrate the differences between various color modes, such as CMYK, RGB, grayscale, and spot colors.

2.B.04 Performance Examples:

- Define color theory as the theoretical practice of color mixing.
- Explain the psychological effects of color.
- Determine color choices based on customer input, branding requirements and target audience demographics.
- Identify strategies for successful color implementation using applicable traditional or digital methods.
- Mix secondary and tertiary colors using traditional and/or digital methods comparing and contrasting the results.
- Create a project in a monochromatic color scheme, utilizing tints, tones and shades.
- Create a color wheel and review color schemes.
- Mix, additive or subtractive colors using traditional and digital methods comparing and contrasting the results.
- Create a basic image using traditional and/or digital methods to visually communicate the seven designations of color contrast; contrast of hue, light-dark contrast, cold-warm contrast, complementary contrast, simultaneous contrast, contrast of saturation, and contrast of extension.
- Prepare an image saved in various color modes. Compare and contrast the results determining its appropriate use in print and media.

2.C The Creative Process

2.C.01 Employ design strategies.

- 2.C.01.01 Identify and utilize steps in the design process: - 1) Understand the Goal; 2) Research; 3) Brainstorm/Thumbnail Development; 4) Roughs; 5) Final Comp.
- 2.C.01.02 Describe and demonstrate roles and responsibilities of a creative team in dealing with client needs, including a timeline and budget.
- 2.C.01.03 Describe considerations for print, web and video audiences.

2.C.01 Performance Examples:

- Assess a client's visual design problems, needs and marketing objectives; create a proposal including a timeline and budget.

2.C.02 Apply concept development.

2.C.02.01 Maintain a sketchbook.

2.C.02.02 Demonstrate basic understanding and application of marketing and advertising principles, such as target audience, demographics, psychographics, branding and advertising campaigns.

2.C.02.03 Describe and demonstrate different types of brainstorming activities.

2.C.02.04 Write original copy.

2.C.02.05 Produce draft quality drawings, including thumbnails, roughs, comps, storyboards and site maps.

2.C.02.06 Analyze designs throughout the creative process.

2.C.02 Performance Examples:

- Develop a corporate/branding package, including logos, letterheads, business cards, and promotional and marketing materials.
- Develop an advertising campaign.

2.C.03 Employ design execution/production practices.

2.C.03.01 Produce final design solutions.

2.C.03.02 Participate in critique process from both the client's and designer's perspective.

2.C.03.03 Demonstrate copy editing skills by proofreading for grammar and spelling.

2.C.03.04 Save and export digital files in a variety of appropriate formats.

2.C.03 Performance Examples:

- Produce a corporate identity package (logo, letterhead, business card) incorporating client feedback.
- Create a document integrating all elements, including images and text for various applications; taking into account resolution, image size and various file formats.
- Design and create a project, such as a concert ticket, magazine advertisement and/or promotional poster.

2.C.04 Demonstrate presentation skills.

2.C.04.01 Demonstrate industry standards of professionalism, including appropriate attire, speech, attitude, and body language, such as maintaining eye contact and good posture.

2.C.04.02 Present original design pieces meeting client objectives and timeline.

2.C.04.03 Communicate with a variety of audiences using visual aids, written and verbal communication.

2.C.04.04 Participate in a question and answer session upon the conclusion of the presentation.

2.C.04 Performance Examples:

- Develop and present a creative proposal, production schedule and budget for a client.
- Develop a presentation using presentation software.
- Present design concepts to the client from concept through development of the final piece; place thumbnails, sketches and concepts into portfolio in both electronic and hard copy form.

2.D Content Creation Skills

- 2.D.01 Demonstrate illustration skills.
- 2.D.01.01 Examine the history of illustration, graphic design and art.
 - 2.D.01.02 Demonstrate various illustration styles.
 - 2.D.01.03 Maintain a sketchbook.
 - 2.D.01.04 Create a self-portrait.
 - 2.D.01.05 Render an illustration using perspective.
 - 2.D.01.06 Render an illustration using the human figure.
 - 2.D.01.07 Render an illustration from direct observation.
 - 2.D.01.08 Render an illustration demonstrating interpretation and conceptualization.

2.D.01 Performance Examples:

- Research and present a report on a topic pertaining to the history of illustration, graphic design and art, such as hieroglyphics, famous artists and/or genres.
- Create a self-portrait using a mirror or photographic reference.
- Create still life illustration of a found object from direct observation.
- Create an illustration based on a literary or musical reference.
- Using a grid format, enlarge or reduce a drawing by a set percentage of the original.
- Create a poster, which demonstrates the principles of the golden mean/golden ratio.

- 2.D.02 Demonstrate vector based skills.
- 2.D.02.01 Define purpose and use of vector based graphics.
 - 2.D.02.02 Demonstrate the use of tools, palettes, options, clipping masks and compound paths.
 - 2.D.02.03 Demonstrate techniques for converting raster images to vector art.
 - 2.D.02.04 Create a vector illustration, eligible for portfolio inclusion.

2.D.02 Performance Examples:

- Import a raster image, create a template layer and utilize the necessary tools and palettes to reproduce it as a vector image.
- Create an original character and/or scene using the necessary tools and palettes.
- Apply text to a vector based composition as a design element.
- Distort (or manipulate) text by either converting to outlines, warping, duplicating, aligning to a path, placing within a shape, etc... using the necessary tools and functions.
- Design and print out a color logo for client review with design principles in mind, assign Pantone colors, gradients, and effects to create a unified vector image.

- 2.D.03 Demonstrate raster based skills.
- 2.D.03.01 Define raster images and their qualities.
 - 2.D.03.02 Retouch, modify and correct images.
 - 2.D.03.03 Improve color and tonal balance of an image.
 - 2.D.03.04 Demonstrate use of masks, channels and a clipping path.

2.D.03 Performance Examples:

- Retouch or edit a digital image or photograph to correct or repair deficiencies or defects in the image, composition, color, tone and/or exposure.
- Create a photo mosaic comprised of digital images about a period or event in history that uses color or tone to represent the mood and message of the period.
- Create a digital image composition portraying a surrealistic scene comprised of multiple images and layers to evoke a sense of space through the use of scale, lighting and shadows.

- 2.D.04 Demonstrate photography skills.
- 2.D.04.01 Explain the characteristics of commercial, journalistic, portrait, and fine art photography.

- 2.D.04.02 Identify and demonstrate the use of manual settings that control lighting (aperture, shutter speed, etc.) versus automatic settings.
- 2.D.04.03 Explain lighting techniques (natural, supplemental, and flash).
- 2.D.04.04 Photograph a variety of subjects using appropriate photographic principles, styles and techniques.
- 2.D.04.05 Prepare a contact sheet for client review.

2.D.04 Performance Examples:

- Photograph several compositions using one subject in a variety of lighting conditions and compare the images, i.e. portrait and product photography.
- Photograph a specific event or activity for the school's various communications, including print and electronic media.
- Create a photograph which emphasizes the elements of design (line, shape, color, and texture).
- Compose and capture a photograph that demonstrates an understanding of photography principles, such as the rule of thirds and the rule of odds.
- Create a series of photographs that represent a theme.

2.D.05 Demonstrate page layout skills.

- 2.D.05.01 Import copy and design elements into a page layout document.
- 2.D.05.02 Create a multipage document using master pages and style sheets.
- 2.D.05.03 Define and demonstrate standard industry imposition techniques.
- 2.D.05.04 Perform preflight/package operations.

2.D.05 Performance Examples:

- Create a poster, flyer and/or magazine advertisement for a school product, service or event.
- Create a four page newsletter incorporating columns, gutters, bleeds, text, graphics and photographs.
- Create a package design to customer specifications, utilizing bleeds, die cuts, and crop marks.

2.D.06 Demonstrate website design skills.

- 2.D.06.01 Define the history and role of the web in current market trends and various technologies.
- 2.D.06.02 Analyze websites for style, content and usability.
- 2.D.06.03 Design websites consistent with other marketing materials.
- 2.D.06.04 Create a sitemap, prototype, and final website.

2.D.06 Performance Examples:

- Research, review, and report websites from the inception of the world wide web through the present day to identify the evolution of the web and its use in past and current marketing and communication trends.
- Review and critique an existing website identifying the topic, target audience, design elements and the site's purpose.
- Plan and create a new design for an existing website that repurposes the site for a different target audience or specific purpose and prepare that design for presentation and review.
- Plan and design a new website consistent with the customer's marketing materials and branding parameters.

2.D.07 Demonstrate animation skills.

- 2.D.07.01 Create a storyboard then execute an animation based on that storyboard.
- 2.D.07.02 Create graphics suitable for animation, such as characters, objects and backgrounds.

- 2.D.07.03 Describe and demonstrate the use of animation shapes and symbols (create, key frame, edit, nest) and animation techniques including frame by frame or key frame animation, and tweening.
- 2.D.07.04 Incorporate audio into an animation.

2.D.07 Performance Examples:

- Create a multi-layer animation with characters and scenery.
- Create a banner advertisement suitable for web applications and/or portable devices.
- Create a small animation, applying text for titles and credits, multiple scenes, and a minor action script to stop your movie when completed.

2.D.08 Demonstrate video production skills.

- 2.D.08.01 Explain and demonstrate camera and lighting techniques.
- 2.D.08.02 Develop a script and storyboard for a video project.
- 2.D.08.03 Shoot and edit footage for a video project with an audio component.
- 2.D.08.04 Optimize and save final edited footage in appropriate formats.

2.D.08 Performance Examples:

- Storyboard a 15 to 30 second commercial for a product, service or event.
- Shoot and edit a 15 to 30 second public service message.

2.D.09 Demonstrate fundamental technical skills according to current industry standards.

- 2.D.09.01 Demonstrate and apply file management practices, utilizing industry naming conventions.
- 2.D.09.02 Export, save and archive assets and files for future use and editing.
- 2.D.09.03 Demonstrate appropriate use of tools, options and palettes specific to different design software programs.
- 2.D.09.04 Define and demonstrate measurement skills.
- 2.D.09.05 Define the difference between placing and embedding elements into a document.
- 2.D.09.06 Demonstrate the ability to integrate type.
- 2.D.09.07 Define and demonstrate the use of peripheral devices, such as scanners, external hard drives, printers, tablets and cameras.
- 2.D.09.08 Prepare visual content for printing or digital media.

2.D.09 Performance Examples:

- Create a folder for archiving work and assets.
- Save original files in their native format(s) (example: do not flatten your layered work) and create secondary files for client review, allowing for the designer's ability to make changes.
- Create a document with embedded and placed graphic elements and review the differences.
- Compare the difference in document sizes and the consequences of moving elements from their root folder.
- Compare the differences and similarities between the various methods of layer management, palettes, and tools throughout the different software programs.
- Scan an item several ways showcasing the various scanning modes (bitmap, grayscale, and color) and different resolutions, comparing the outcomes.
- Assign projects that are based on specific measurements and may require the use of rulers, guides and/ or margins, and utilize the student's knowledge in the areas of math (i.e. addition, subtraction, division, multiplication, etc.), some of which can be accomplished by using the various shapes and tools provided in the software.
- Have students create a chart indicating the peripheral devices connected to their workstation, how they are connected, and what sort of software is required to run the peripheral.
- Compare the difference in document sizes and the consequences of moving elements from their root folder.
- Students should research and create a chart listing the pros and cons of all current computer platforms.

2.E Career and Portfolio Development

2.E.01 Develop and prepare a body of work.

- 2.E.01.01 Include a minimum of 10 drawings direct from observation, including but not limited to a still life, a self-portrait, an illustration using perspective, and an illustration using the human figure.
- 2.E.01.02 Include a minimum of five drawings with creative concepts that reflect personal style and strengths, including but not limited to fine art, abstract or surrealism, which reflect a higher level of critical thinking.
- 2.E.01.03 Include a minimum of 10 pieces of work from the student's area of focus, which may include photographs, live work and/or a variety of media utilized.
- 2.E.01.04 Create a graphic work, which focuses on strong use of one design element such as color, line, or texture.

2.E.01 Performance Examples:

- Set up a still life display with focus on composition, lighting, color and texture, then draw what you observe.
- Research an artist and create your own work utilizing the same techniques, medium, and similar subject matter.
- Create an original work based on an abstract idea, such as fear or happiness and then be able to explain its relevance and defend your design choices.
- Complete a portfolio piece consistent with a specific college requirement.
- Create one assignment in four different methods, such as a self-portrait in pencil, photography, vector illustration and/or typography.
- Create a business identity system for yourself, showing consistency from one element to another such as print and interactive materials.
- Display work in a polished and professional manner in a number of formats, matted for exhibition, printed within a portfolio binder, digitally and online.

- 2.E.02 Present portfolio.
- 2.E.02.01 Review and explain the opportunities for employment in the Design and Visual Communications Field, such as in Publishing, Entertainment, Education, Fine Art, Advertising, Interactive Media and Graphic Design.
 - 2.E.02.02 Review and critique the body of work created.
 - 2.E.02.03 Develop a resume, artist statement or statement of purpose, college essay or cover letter, business card and other self-promotional materials.
 - 2.E.02.04 Develop a final portfolio from the student's body of work for educational and/or career purposes in both a traditional and digital format.

2.E.02 Performance Examples: Student will:

- Research, summarize and present employment and post-secondary requirements.
- Participate in a critical self examination of the complete body of work.
- Inspect and examine work to meet industry and post-secondary standards and make any necessary changes to increase the visual quality of the work.
- Organize the work with a visual flow to clearly reflect the ideas, interests, and area of self-directed exploration.
- Formulate the statement of purpose clearly showing their passion, creative influences, goals, and any other personal information that would have relevance in supporting the statement of purpose utilizing concise and articulate language.

Strand 3: Embedded Academics

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

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

Selected Websites

- 5 Ways to Ace a Job Interview: 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
- Checklist: <http://www.doe.mass.edu/cd/plan/checklist.pdf>
- Career Tech: 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
- 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
- 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

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
- National Foundation for Teaching Entrepreneurship (NFTE): 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

Glossary

Term	Definition
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**Definition**

Chain of Command and Organizational Structure



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

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, 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

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.A.02	RST 1	Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.
Performance Example: Research and then present an artist whose work demonstrates a clear use of a design principle and create a unique piece utilizing their application method.		
2.A.03	RST 5	Analyze how the text structures information or ideas into categories, demonstrating understanding of ideas.
Performance Example: Find three existing logos, which are typographic, and explain how they relate to the company they represent.		
2.A.04	RST 3	Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text).
Performance Example: Develop a script and storyboard for a video project.		
2.C.01	WHST 2	Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.
Performance Example: Research and present a report on a topic pertaining to the history of illustration, graphic design and art, such as hieroglyphics, famous artists or genres.		
2.C.05	WHST 4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
Performance Example: Create a four page newsletter incorporating columns, gutters, bleeds, text, graphics and photographs.		
2.C.06, 2.D.01	WHST 6	Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.
Performance Examples: <ul style="list-style-type: none"> • Research, review, and report websites from the inception of the world wide web through the present day to identify the evolution of the web and its use in past and current marketing and communication trends. • Review and critique an existing website identifying it's or the site's topic, target audience, design elements and purpose. • Research an artist and create your own work utilizing the same techniques, medium, and similar subject matter. • Create an original work based on an abstract idea, and then explain its relevance and defend your design choices. 		

Embedded Mathematics

CVTE Learning Standard Number	Math Content Conceptual Category and Domain Code Learning Standard Number	Text of Mathematics Learning Standard
2.A.01	8.G.4	Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.
Performance Example: Create an illustration using a vector based program.		
2.B.04	8.EE.4	Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.
Performance Example: Assign projects that are based on specific measurements and may require the use of rulers, guides, margins, and utilize the student's knowledge in the areas of math (i.e. addition, subtraction, division, multiplication, etc.); some of which can be accomplished by using the various shapes and tools provided in the software.		
2.C.02	8.EE.5	Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways.
Performance Example: Develop and present a creative proposal, production schedule, and budget for a client with graphic visuals, such as bar graphs and pie charts.		
2.C.09	8.SP.3	Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.
Performance Example: Develop and present a creative proposal, production schedule, and budget for a client.		
2.C.04	8.G.	Understand congruence and similarity using physical models, transparencies, or geometry software
Performance Example: Create a package design to customer's specifications, utilizing bleeds, die cuts, and crop marks.		
2.C.05	8.EE.2	Understand the connections between proportional relationships, lines, and linear equations.
Performance Example: Create a poster which demonstrates the principles of the golden mean/golden ratio.		
2.C.09	7.G1	Draw, construct, and describe geometrical figures and describe the relationships between them. 1. Solve problems involving scale drawings of geometric figures, such as computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.
Performance Example: Assign projects that are based on specific measurements and may require the use of rulers, guides, margins, and utilizes the student's knowledge in the areas of math measurement.		

Embedded Science and Technology/Engineering

Earth and Space Science

CVTE Learning Standard Number	Subject Area, Topic Heading and Learning Standard Number	Text of Earth and Space Science Learning Standard
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Life Science (Biology)

CVTE Learning Standard Number	Subject Area, Topic Heading and Learning Standard Number	Text of Biology Learning Standard
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Physical Science (Chemistry)

CVTE Learning Standard Number	Subject Area, Topic Heading and Learning Standard Number	Text of Chemistry Learning Standard
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Physical Science (Physics)

CVTE Learning Standard Number	Subject Area, Topic Heading and Learning Standard Number	Text of Physics Learning Standard
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Technology/Engineering

CVTE Learning Standard Number	Subject Area, Topic Heading and Learning Standard Number	Text of Technology/Engineering Learning Standard
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DESE Statewide Articulation Agreements

ARTICULATION AGREEMENT

Between

Massachusetts Community Colleges

And

Massachusetts Chapter 74-Approved Secondary
Career/Vocational Technical Design & Visual Communications Programs

Effective Date: December 5, 2012

for more information, click on

<http://www.masscc.org/partnerships-initiatives/voc-schools-articulation-agreements>

Industry Recognized Credentials (Licenses and Certifications/Specialty Programs)

Optional Certifications

License/Certification	Hours Needed	Website
ACA Visual Communication with Adobe Photoshop		http://www.adobe.com/education/resources/certificate-programs.html
ACA Rich Media Communication with Adobe Flash Professional		http://www.adobe.com/education/resources/certificate-programs.html
ACA Web Communication with Adobe Dreamweaver		http://www.adobe.com/education/resources/certificate-programs.html
ACA Video Communication with Adobe Premiere Pro		http://www.adobe.com/education/resources/certificate-programs.html
ACA Adobe Illustrator		http://www.adobe.com/education/resources/certificate-programs.html
ACA Adobe InDesign		http://www.adobe.com/education/resources/certificate-programs.html
OSHA 10	10	http://www.osha.gov/dte/outreach/index.html

Other

Reference Materials

ART CATEGORY

Andy Warhol Catalogue Raisonné, Vol. 3: Paintings and Sculptures, 1970-1974	Neil Printz, Sally King-Nero	Phaidon Press (July 28, 2010)
De Kooning: A Retrospective	John Elderfield	The Museum of Modern Art, New York (September 30, 2011)
Discovering Great Artists: Hands-On Art for Children in the Styles of the Great Masters (Bright Ideas for Learning)	by MaryAnn F. Kohl and Kim Solga	May 1, 1997
History of Art for Young People	H. W. Janson and Anthony F. Janson	March 1992
Jasper Johns: An Allegory of Painting, 1955-1965	Mr. Jeffrey Weiss	Yale University Press (January 10, 2007)
Jean-Michel Basquiat	Dieter Buchhart, Glenn O'Brien, Jean-Louis Prat	Hatje Cantz (November 30, 2010)
Jeff Koons	Eckhard Schneider, Ingrid Sischy, Katy Siegel,	TASCHEN America Llc; First Edition (April 1, 2009)
Keith Haring	Jeffrey Deitch, Julia Gruen, Suzanne Geiss	Rizzoli (October 28, 2008)
Kenny Scharf	Richard Marshall	Rizzoli (March 24, 2009)
The Thames & Hudson Dictionary of Art Terms	Edward Lucie-Smith	Thames & Hudson; 2nd edition (February 23, 2004)

ANIMATION CATEGORY

Flash Cartoon Animation: Learn from the Pros	Glenn Kirkpatrick, Kevin Peaty and Glen Kirkpatrick	July 1, 2003
How to Cheat in Adobe Flash CS5: The Art of Design and Animation	Chris Georgenes	Focal Press August 24, 2010
Storyboard Design Course: Principles, Practice, and Techniques	Giuseppe Cristiano	Barron's Educational Series (October 1, 2007)

BUSINESS CATEGORY

Art Marketing 101: A Handbook for the Fine Artist	Constance Smith	Art Network; 3 edition (April 1, 2007)
Business And Legal Forms for Fine Artists	Tad Crawford	Allworth Press; 3rd edition (October 1, 2005)
Business and Legal Forms for Graphic Designers	Eva Doman Bruck, Tad Crawford	Eva Doman Bruck, Tad Crawford
Business and Legal Forms for Illustrators	Tad Crawford	Allworth Press (August 1, 2004)
Creative, Inc.: The Ultimate Guide to Running a Successful Freelance Business	Joy Deangdeelert Cho , Meg Mateo Ilasco	Chronicle Books; 1 edition (July 28, 2010)
Graphic Artist's Guild Handbook of Pricing and Ethical Guidelines (Graphic Artists Guild Handbook: Pricing & Ethical Guidelines)	Graphic Artists Guild	Graphic Artists Guild; 13 edition (September 29, 2010)
Graphic Designer's Guide to Pricing, Estimating & Budgeting Revised Edition	Theo Stephan Williams	Allworth Press; 1st edition (July 1, 2001)
How to Make Your Design Business Profitable (Artist's Market Business Series)	Joyce M. Stewart	North Light Books; 1st edition (March 1992)
How to Start & Operate a Small Business	Steve Mariotti	2006
Legal Guide for the Visual Artist	Tad Crawford	Allworth Press; Fifth Edition edition (September 14, 2010)
Licensing Art and Design: A Professional's Guide to Licensing and Royalty Agreements	Caryn R. Leland	Allworth Press; Revised edition (May 1, 1995)
Licensing Art 101, Third Edition Updated: Publishing and Licensing Your Artwork for Profit	Michael Woodward	ArtNetwork; Third Edition edition (July 1, 2007)
Start & Run a Creative Services Business	Susan Kirkland	Self Counsel Press; 2 Pap/Cdr edition (February 15, 2009)
Start & Run a Graphic Design Business	Michael Huggins	Self Counsel Press; Pap/Cdr edition (March 15, 2009)

Talent Is Not Enough: Business Secrets For Designers	Shel Perkins	New Riders Press; 2 edition (May 2, 2010)
The Designers Commonsense Business Book	Barbara Ganim	Ntc Pub Group (April 1993)
The Designer's Guide To Marketing And Pricing: How To Win Clients And What To Charge Them	Ilise Benun , Peleg Top	HOW Books (March 2, 2008)
The Graphic Artist's Guide to Marketing and Self-Promotion	Sally Prince Davis	North Light Books; 2nd Printing edition (March 10, 1988)
2012 Artist's & Graphic Designer's Market	Mary Burzlaff Bostic	North Light Books; 37 edition (November 11, 2011)
Writing for Design Professionals: A Guide to Writing Successful Proposals, Letters, Brochures, Portfolios, Reports, Presentations, and Job Applications	Stephen A. Kliment	W. W. Norton & Company; 2 edition (August 17, 2006)

COLOR CATEGORY

Blue is Hot, Red is Cool: Choosing the Right Color for Your LOGO	David E. Carter	How Design Books (April 26, 2005)
Pantone Guide to Communicating With Color	Leatrice Eiseman	FW Media (2011)
The Elements of Color	Johannes Itten	1970

DESIGN BASICS CATEGORY

A Book About Color: A Clear and Simple Guide for Young Artists	Mark Gonyea	April 13,
A Book About Design: Complicated Doesn't Make It Good	Mark Gonyea	May 12, 2005
An Introduction to Design: Basic Ideas and Applications for Paintings or the Printed Page	Robin Landa	October 1983
Another Book About Design: Complicated Doesn't Make It Bad	Mark Gonyea	August 7, 2007
Art Synectics	Nicholas Roukes	Publisher Davis Pubns 1984
Creating Logo Families	David E. Carter	Nippon Shuppan Hanbai Deutschland GmbH (October 27, 2000)

Design Essential Index (Kit)	Jim Krause	December 15, 2007
Design Synectics	Nicholas Roukes	Publisher Davis Pubns 1988
Designing a Digital Portfolio	Cynthia L. Baron	New Riders Press; 1 edition (December 28, 2003)
Elements and Principles of Design Student Guide with Activities	Crystal Productions	2000
Exploring Package Design	Chuck Groth	Delmar Cengage Learning; 1 edition (December 5, 2005)
Exploring Publication Design	Poppy Evans	Delmar Cengage Learning; 1 edition (August 18, 2005)
Exploring Visual Storytelling	Brian Arnold, Brendan Eddy	Delmar Cengage Learning; 1 edition (June 5, 2007)
Getting Started in Multimedia Design	Gary Olsen	North Light Books; 1st edition (March 1997)
Graphic Communications: The Printed Image (workbook available)	Z.A.Prust	September 1, 2009
Graphic Communications Today, 4E (Design Concepts)	William E Ryan, Theodore E. Conover	Delmar Cengage Learning; 4 edition (December 24, 2003)
Graphic Design: A New History, second edition	Stephen J. Eskilson	Yale University Press; 2 edition (February 28, 2012)
Graphic Design Solutions	Robin Landa	January 26, 2010
House Industries	House Industries	Die Gestalten Verlag (August 15, 2003)
How to Design Trademarks & Logos	John Murphy, Michael Rowe	North Light Books (September 1991)
Making and Breaking the Grid: A Graphic Design Layout Workshop	Timothy Samara	May 1, 2005
Making Mini Books: Big Ideas for 30+ Little Projects	Kathleen McCafferty	Lark Crafts (April 3, 2012)
Non-Designer's Design Book	Robin Williams	2010
Thinking Creatively	Robin Landa	Feb 15, 2002
Visual Workout: Creativity Workbook (Design Concepts)	Robin Landa and Rose Gonnella	Jul 18, 2000
2d Visual Basics for Designers	Robin Landa	2006

Non-Designer's Design Book	Robin Williams	February 22, 2008 The (3rd Edition)
Robin Williams Design Workshop	Robin Williams and John Tollett	Peachpit Press Aug 20, 2006
Steal Like an Artist: 10 Things Nobody Told You About Being Creative	Austin Kleon	Workman Publishing Company; 1st ptg edition (February 28, 2012)
344 Questions: The Creative Person's Do-It-Yourself Guide to Insight, Survival, and Artistic Fulfillment (Voices That Matter)	Stefan G. Bucher	New Riders Press; 1 edition (August 10, 2011)
What is Graphic Design For? (Essential Design Handbook)	Quentin Newark	May 15, 2006
Visual Literacy: A Conceptual Approach to Graphic Problem Solving	Richard Wilde & Judith Wilde	April 1, 2000
Visual Explanations: Images and Quantities, Evidence and Narrative	Edward R. Tufte	Graphics Press (February 1997)

DESIGN SOFTWARE CATEGORY

Adobe Creative Suite 5 Design Premium All-in-One For Dummies	Jennifer Smith, Christopher Smith and Fred Gerantabee	June 28, 2010
Adobe Illustrator CS6 Classroom in a Book	Adobe Creative Team	June 6, 2012
Adobe Photoshop CS6 Classroom in a Book	Adobe Creative Team	June 1, 2012
Design Essentials for Adobe(R) Photoshop(R) 7 and Illustrator(R) 10 (4th Edition) (Professional Studio Techniques)	Luanne Seymour Cohen	July 9, 2002
Graphic Design Portfolio CS5: Adobe InDesign Illustrator & Photoshop	Inc. Against The Clock	2010
Illustrator CS5 for Windows and Macintosh: Visual QuickStart Guide (for other programs also available)	Elaine Weinmann	2011
InDesign CS5 for Macintosh and Windows: Visual QuickStart Guide	Sandee Cohen	2011
Learning Media Design with Adobe CS5	Catherine Skintik and Learning Emergent Learning	August 28, 2010)

LLC

Photoshop CS5 for Windows and
Macintosh: Visual QuickStart Guide

Elaine Weinmann and Peter
Lourekas

June 19, 2010

The Design Collection Revealed

Chris Botello & Elizabeth
Eisner Reding

2010

Video Communications & Production
(and Workbook)

Jim Stinson

February 7, 2007

ILLUSTRATION CATEGORY

Drawing on the Right Side of the Brain:
The Definitive, 4th Edition

Betty Edwards

April 26, 2012

Draw 3-D (Learn to Draw)
A Step by Step Guide to Perspective
Drawing

Doug Dubosque

September 30, 2000

How to Draw What You See (Practical
Art Books)

Rudy De Reyna

September 1, 1996

The Basics of Drawing

Victoria Vebell

2005

Perspective Made Easy (Dover Art
Instruction)

Ernest R. Norling

Dover Publications (January 19, 1999)

The Art of Perspective: The Ultimate
Guide for Artists in Every Medium

Phil Metzger

North Light Books (June 12, 2007)

Dynamic Figure Drawing

Burne Hogarth

Watson-Guptill; First Edition (August 1,
1996)

Dynamic Anatomy: Revised and
Expanded Edition

Burne Hogarth

Watson-Guptill; Rev Exp edition (May 1,
2003)

Drawing the Human Head

Burne Hogarth

Watson-Guptill; 1989/First Printing
edition (February 1, 1989)

Dynamic Light and Shade

Burne Hogarth

Watson-Guptill (September 1, 1991)

Drawing Dynamic Hands

Burne Hogarth

Watson-Guptill Publications (March
1977)

Dynamic Wrinkles and Drapery:
Solutions for Drawing the Clothed
Figure

Burne Hogarth

Watson-Guptill (October 1, 1995)

Figure It Out!: The Beginner's Guide to

Christopher Hart

Chris Hart Books; 1st edition (August 4,

Drawing People		2009)
Human Anatomy Made Amazingly Easy	Christopher Hart	Watson-Guptill; 1 edition (September 1, 2000)
Drawing Animals Made Amazingly Easy	Christopher Hart	Watson-Guptill (December 20, 2006)
Cartoon Cool: How to Draw New Retro-Style Characters	Christopher Hart	Watson-Guptill (April 1, 2005)
Cartooning for the Beginner	Christopher Hart	Watson-Guptill (June 1, 2000)
The Encyclopedia of Illustration Techniques: A Step-By-Step Visual Directory of Illustration Techniques and an Inspirational Gallery of Finished Art	Chatherine Slade	Running Press Book Publishers; 1st ed. edition (April 1997)

MISCELLANEOUS CATEGORY

Sacred Geometry (Wooden Books)	Miranda Lundy	Apr 1, 2001
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PHOTOGRAPHY CATEGORY

Better Photo Basics: The Absolute Beginner's Guide to Taking Photos Like a Pro	Jim Miotke	Apr 27, 2010
Real World Digital Photography	Katrin Eisman, Sean Duggan and Tim Grey	2nd Edition, 2004
The Photography Bible	Daniel Leland	October 9, 2007

TYPOGRAPHY CATEGORY

Designing with Type, 5th Edition: The Essential Guide to Typography	James Craig, William Bevington and Irene Korol Scala	May 1, 2006
Exploring Typography (Design Exploration Series)	Tova Rabinowitz	February 21, 2006
The Big Book of 5000 Fonts	David E. Carter	Watson-Guptill Publications (February 2002)
The Elements of Typographic Style	Robert Bringhurst	Oct 9, 2004
Type: A Visual History of Typefaces and Graphic Styles, Vol. 1	Jan Tholenaar	TASCHEN America Llc; Har/Dig edition (May 1, 2009)
Type. A Visual History of Typefaces &	Alston W Purvis	Taschen; Mul edition (March 30, 2010)

Graphic Styles, 1901-1938 (v. 2)

Typography Workbook: A Real-World Guide to Using Type in Graphic Design

Timothy Samara

November 1, 2006

U&lc : Influencing Design & Typography

John Berry

Mark Batty Publisher (February 1, 2005)

BASIC WEB DESIGN CATEGORY

Adobe Dreamweaver CS6 Classroom in a Book
(other programs also available)

Adobe Creative Team

June 27, 2012

Head First HTML and CSS

Elisabeth Robson and Eric Freeman

September 3, 2012

Head First Web Design

Ethan Watrall and Jeff Siarto

December 30, 2008

Learning Web Design: A Beginner's Guide to (X)HTML, StyleSheets, and Web Graphics

Jennifer Niederst Robbins and Aaron Gustafson

June 15, 2007

Learning Web Design w/Adobe CS5

Katherine Murray and Learning Emergent Learning LLC

August 28, 2010

Related National, Regional, and State Professional Organizations

REGIONAL ARTS ORGANIZATIONS

Pastel Painters Society of Cape Cod

Cape Cod, Massachusetts

Salem Arts Association

<http://www.salemartsassociation.org/>

Salem, Massachusetts and Boston's North Shore

South Shore Art Center

Cohasset, Massachusetts and south of Boston

STATE ART ORGANIZATIONS

Blackstone Valley Art Association

Massachusetts

Massachusetts Cultural Council

Massachusetts

NATIONAL ART ORGANIZATIONS

Alliance of Artists' Communities

United States

Allied Artists of America, Inc.	United States
American Color Print Society (ACPS)	United States
American Society for Aesthetics	United States
American Society of Portrait Artists http://www.portraitsociety.org/	United States
American Watercolor Society	United States
Americans for the Arts	United States
Artist-Blacksmith's Association of North America	US, Canada & Mexico
Burlington Art Centre	US, Canada & Mexico
Canadian Artists for the Poor	Canada
Canadian Association of Photographers & Illustrators in Communications	Canada
Canadian Institute of Portrait Artists (CIPA)	Canada
Canadian Portrait Academy	Canada
Colored Pencil Society of America	United States
Federation of Canadian Artists	Canada
NAPA: The National Acrylic Painters Association	United Kingdom
National Assembly of State Arts Agencies	United States
National Association of Fine Artists	United States
National Association of Independent Artists (NAIA)	United States
National Endowment for the Arts	United States
National Oil and Acrylic Painters' Society	United States
National Sculpture Society	United States
Oil Painters of America	United States
Pastel Society of America	United States
Plein Air Painters of America	United States
Portrait Society of America, Inc.	United States
Royal Society of Portrait Painters	United Kingdom

Smithtown Township Arts Council	United States & Canada
St. Louis Artists' Guild	United States
Transparent Watercolor Society of America	United States & Canada
http://www.adclub.org/	The Ad Club
http://www.aiga.org/	American Institute of Graphic Arts, AIGA
http://www.arteducators.org/	The National Art Education Association
http://www.artsboston.org	Arts Boston
http://www.asid.org/	Society of Interior Designers
http://www.bostonart.com/	The Boston Art Dealers Association (BADA)
http://www.cambridgeart.org/	The Cambridge Art Association (CAA)
http://www.chelmsfordarts.org/	The Chelmsford Center for the Arts
http://www.collegeart.org/	The College Art Association:
https://www.graphicartistsguild.org/	Graphic Artists Guild
http://www.massculturalcouncil.org/	The Massachusetts Cultural Council (MCC)
https://www.naia-artists.org/	National Association of Independent Artists (NAIA)
http://www.nasaa-arts.org/	The National Assembly of State Arts Agencies (NASAA)
http://nationalwatercolorociety.wildapricot.org/	National Watercolor Society
http://www.nefa.org/	The New England Foundation for the Arts (NEFA)
http://www.nh.gov/nharts/	New Hampshire State Council on the Art
http://www.photo-marketing-tips.com/?page_id=5	List of Photography Trade Groups
http://www.professionalartistsleague.org/	Professional Artists League
http://www.societyillustrators.org/	Society of Illustrators
http://www.spd.org/	The Society of Publication Designers

Student Organizations

http://www.skillsusa.org/index.shtml	Student Organization promoting leadership in world of work
http://mabpa.com/	Massachusetts Business Professionals of America
http://www.worcesterart.org/Education/allstate.html	Art-All-State Competition
http://www.artandwriting.org/awards/	Alliance for Young Artists and Writers
http://www.rymaec.org	Regional Youth Media Arts Educator Consortium

Selected Websites

EDUCATIONAL

http://active.tutsplus.com/tutorials/design/using-the-new-deco-drawing-tool-in-flash-cs5-basix/	Animation/Flash
http://www.adobe.com/designcenter/video_workshop/?id=vid0119	Animation/Flash
http://www.adobe.com/devnet/flash/training.html	Animation/Flash
http://www.allgraphicdesign.com/	Web Design
http://www.alvit.de/web-dev/color-tools-mixers-palettes.html	Color Theory
http://www.atomiclearning.com/	Educational with certificates of completion
http://www.bavc.org/node/617	Video
http://blog.html.it/layoutgala/	Web Design
http://books.google.com/books?id=rrf5SisMzQgC&dq=&pg=PP1&ots=8xBKnbhiun&sig=E9MB_JRu17Q3900MihRKhWE4oY&prev=http://www.google.com/search%3Fclient%3Dsafari%26rls%3Den%26q%3Dvisual%2Bliteracy%2BDonis%2BA.%2BDondis%26ie%3DUTF-8%26oe%3DUTF-8&sa=X&oi=print&ct=title#v=onepage&q&f=false	Primer of Visual Literacy
http://www.cartoonsmart.com/	Animation/Flash
http://www.cartoonsmart.com/free_flash_drawing_tutorial.php5	Animation/Flash
http://www.cdc.gov/niosh/	The National Institute for

	Occupational Safety and Health (NIOSH)
http://www.centerspan.org/tutorial/glossary.htm	Web Design
http://www.chainstyle.com/tutorials/colscheme.html	Color Theory
http://coolhomepages.com/design-ideas.html?catName=Best+of+the+Best&sortType=DATE&pageNo=1	Web Design
http://www.creativeskillset.org/animation/	Animation/Flash
http://designgraphics.org/modules.php?name=Content&pa=showpage&pid=1	Animation/Flash
http://www.youtube.com/watch?v=vNDbzdAdJI	
http://desktoppub.about.com/cs/pagelayout/qt/rule_of_thirds.htm	Photography
http://www.devx.com/projectcool/Article/19954	Color Theory
http://digital-photography-school.com/digital-photography-tips-for-beginners	Digital Photography Tips for Beginners
http://www.doe.mass.edu/	Massachusetts Department of Elementary & Secondary Education
http://www.ebizmba.com/articles/best-flash-sites	Animation/Flash
http://ecodazoo.com/	Animation/Flash
http://www.ehow.com/video_4442151_using-masks-photoshop.html	Photoshop
http://www.ehow.com/videos-on_3028_color-wheel-kids_-demonstrations-projects.html	Color Theory
http://electronics.howstuffworks.com/cameras-photography/digital/digital-camera.htm	Photography
http://www.11secondclub.com/	Animation/Flash
http://www.1stwebdesigner.com/inspiration/professionally-made-flash-websites-inspiration/	Animation/Flash
http://flashenabledblog.com/2008/06/13/showcase-cool-flash-sites/	Animation/Flash
http://www.graphicdesignbasics.com/	Graphic Design
http://graphicdesign.spokanefalls.edu/tutorials/process/gestaltprinciples/gestaltprincip.htm	Graphic Design
http://www.graphic-design.com/department/typography	Video

http://help.adobe.com/en_US/flash/cs/using/Wsd60f23110762d6b883b18f10cb1fe1af6-7e87a.html	Animation/Flash
http://www.ideabook.com/tutorials/print_design/the_form_and_function_of_folds.html	Graphic Design / Layout / Misc.
http://www.idleworm.com/how/anm/01b/bball.shtml	Animation/Flash
http://www.illustratorworld.com/	Adobe Illustrator
http://jimcarrey.com/	Animation/Flash
http://kuler.adobe.com/	Color Theory
http://www.lynda.com/	Online Training
http://www.lynda.com/home/flash.aspx?AWKeyword=Flash&_kk=adobe%20flash%20tutorials&_kt=98f870ad-5847-4ebd-881d-ac8e6bf9542&gclid=CLLCn6_buKkCFcPd4AodfwsU_g	Animation/Flash
http://www.nondesigners.com/minicourse/index.html	Tutorials
http://www.osha.gov/	Occupational Safety and Health Organization
http://www.photoflashgraphics.com/tutorials_index.htm	Photoshop
http://www.photoshop911.com/tutorials/screen_print_seps/index.html	Photoshop
http://www.photoshoproadmap.com/Photoshop-tutorials/Illustration-techniques/Most-popular/	Photoshop
http://www.princetonol.com/groups/iad/lessons/high/highlessons.html	High School Art Lessons
http://www.scantips.com/basics1b.html	Scanning
http://www.scantips.com/basics04.html	Scanning
http://www.seriousmagic.com/devnet/flash/articles/design_character_pt1.html	Animation/Flash
http://www.smashingmagazine.com/	Web Design
http://www.smashingmagazine.com/2009/06/07/50-beautiful-flash-websites/	Animation/Flash
http://themartist.com/	Animation/Flash
http://www.totaltraining.com/online/subscriptions.asp	Online Training

http://tutorial-index.com/	Photoshop
http://www.tutorialmagazine.com/	Tutorials
https://tutsplus.com/	Web Design
http://tv.adobe.com/channel/students-educators/higher-education/	Educational Tutorials/ Adobe Software
http://tv.adobe.com/watch/learn-flash-professional-cs5/getting-started-gs-what-is-flash-professional-cs5/	Animation/Flash
http://www.videomaker.com/downloads/software/	Video
http://www.videomaker.com/video/tips-and-tricks/#507-how-to-get-the-perfect-greenscreen-key-	Video
http://www.webdesign.org/web-design-basics/design-principles/examples-of-bad-web-site-graphic-design.8835.html	Web Design
http://www.webpagesthatsuck.com/	Web Design
http://www.wetcanvas.com/ArtSchool/Color/ColorTheory/	Color Theory
http://www.youtube.com/watch?v=dMlXkKawBfM	Animation/Flash
http://www.youtube.com/watch?v=oeRwFkjQe6s&feature=related	Graphic Design / Layout / Misc. Tutorials
http://www.youtube.com/watch?v=x76mDGrmnM8	Animation/Flash
http://www.youtube.com/watch?v=yc8F6wjt8sI	Video

COMPETITIONS

http://www.adobeawards.com/us/compete/	Adobe Design Achievement Awards
http://www.48hourfilm.com/en/boston/	Boston 48 Hour Video Competition

DESIGN RELATED

http://www.jumpola.com/	List of Design Resources
http://logolounge.com/	Logo Resources
http://www.magazine.org/insights-resources/magazine-advertising-case-studies/kelly-awards	Kelly Awards, magazine advertising campaigns

TRADE RELATED MAGAZINES

http://artforum.com/	Art News
http://www.bamagazine.com/	graphic design magazine
http://www.cgw.com/	Computer Graphics
http://classroommagazines.scholastic.com/products/scholastic-art	Educational Issues
http://www.cmykmag.com/	Visual Artist's Work
http://www.commarts.com/	Fine Art Communication Magazine
http://www.davisart.com/Portal/SchoolArts/SAdefault.aspx	School Arts Magazine
http://www.dotsmagazine.com/	Digital Art & Design
http://www.gdusa.com/	Graphic Design
http://www.graphis.com/	International Visual Communication
http://hifructose.com/	Contemporary Art
http://www.howdesign.com/magazine/	design magazine
http://www.id-mag.com/	Interactive Design Magazine
http://www.juxtapoz.com/	Artists Forum
http://layersmagazine.com/	How-to-Adobe Magazine
http://www.netmagazine.com/	Design & Web
http://www.newamericanpaintings.com/	American Paintings
http://www.northlightshop.com/	Art books, Supplies & Instruction
http://www.photoshopelementsuser.com/magazine/	Photoshop
http://www.popphoto.com/	Photography Gear & Info
http://www.printmag.com/	Print Related Design
http://studiovisitmagazine.com/	Artist Books in 2D & 3D
http://www.surveymonkey.com/	Create Free Online Surveys

PROFESSIONAL ORGANIZATIONS

http://www.adclub.org/	The Ad Club
http://www.aiga.org/	American Institute of Graphic Arts, AIGA
http://www.arteducators.org/	The National Art Education Association
http://www.artsboston.org	Arts Boston
http://www.nea.gov/	The National Endowment for the Arts
http://www.asid.org/	Society of Interior Designers
http://www.bostonart.com/	The Boston Art Dealers Association (BADA)
http://www.cambridgeart.org/	The Cambridge Art Association (CAA)
http://www.chelmsfordarts.org/	The Chelmsford Center for the Arts
http://www.collegeart.org/	The College Art Association:
https://www.graphicartistsguild.org/	Graphic Artists Guild
http://www.massculturalcouncil.org/	The Massachusetts Cultural Council (MCC)
https://www.naia-artists.org/	National Association of Independent Artists (NAIA)
http://www.nasaa-arts.org/	The National Assembly of State Arts Agencies (NASAA)
http://nationalwatercolorsociety.wildapricot.org/	National Watercolor Society.
http://www.nefa.org/	The New England Foundation for the Arts (NEFA)
http://www.nh.gov/nharts/	New Hampshire State Council on the Arts
http://www.photo-marketing-tips.com/?page_id=5	List of Photography Trade Groups

<http://www.professionalartistsleague.org/>

Professional Artists League

<http://www.societyillustrators.org/>

Society of Illustrators

<http://www.spd.org/>

The Society of Publication
Designers

MUSEUMS

<http://www.decordova.org/>

Sculpture Park and Museum

<http://fullercraft.org/>

Craft Museum

<http://www.gardnermuseum.org/>

Isabella Stewart Gardner
Museum

<http://www.icaboston.org/>

The Institute of
Contemporary Art, Boston

<http://www.masshome.com/museums.html>

Listing of Museums, including
Art in Massachusetts

<http://www.mfa.org/>

Museum of Fine Art, Boston