

CURRICULUM MAPPING TEMPLATE

Program: Digital/Multimedia & Information Resources Design 11.0801

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
1	PROJECT MANAGEMENT				
	<p>I. ACADEMIC FOUNDATIONS A. Demonstrate language arts knowledge and skills required to pursue the full range of post-secondary education and career opportunities. 5. Use correct grammar, punctuation and terminology to write and edit documents.</p>	Technical Writing; writing project plans, project time line storyboards, scripts, purpose statements, flow charts, critique, analysis, reflection of work, digital portfolio	Charts and tables, logic terms, if then statements, dividing a whole into parts, compute percentages, read and write percentages (1)	6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4; 6.NS.1; 7.NS.1; 7.NS.3; 6.RP.2; 6.RP.3; 7.EE.2; 7.EE.3	S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1; S.CP.1
	<p>III. PROBLEM-SOLVING AND CRITICAL THINKING A. Solve problems using critical thinking skills (analyze, synthesize, and evaluate) independently and in teams. Solve problems using creativity and innovation. 1. Employ critical thinking skills independently and in teams to solve problems and make decisions (e.g., analyze, synthesize and evaluate). 2. Apply a problem solving model to a workplace situation that involves setting goals, implementing and evaluating results. 5. Conduct technical research to gather information necessary for decision-making. B. Employ organization and design principles to sort and group information used in the IT industry. 1. Demonstrate the use of information organization principles.</p>	Learning software using multiple modes such as lecture, tutorial, trial and error; team projects using a variety of software (e.g. finch robots, circuits) to solve problems; brainstorm, troubleshooting when things don't work correctly; working with	All logic concepts; measure of time; charts and tables (1)	6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4	S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1; S.CP.1

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
		businesses analyzing , synthesizing and evaluating when creating projects for business; coming up with a plan to create (web site, program, etc – see above); use a variety of online sources to research and gather information.			
	<p>IV. INFORMATION TECHNOLOGY APPLICATIONS</p> <p>A. Use Personal Information Management (PIM) applications to increase workplace efficiency.</p> <ol style="list-style-type: none"> 1. Manage personal schedules and contact information. 2. Create memos and notes. <p>B. Employ technological tools to expedite workflow.</p> <ol style="list-style-type: none"> 1. Use information technology tools to manage and perform work responsibilities. 11. Prepare presentations for training, sales and information sharing. 12. Deliver presentations with supporting materials. 13. Create a spreadsheet. 14. Perform calculations and analyses on data using a spreadsheet. 15. Manipulate data elements. 16. Manage interrelated data elements. 17. Analyze interrelated data elements. 18. Generate reports showing interrelated data elements. 19. Facilitate group work through management of shared schedule and contact information. 20. Facilitate group work through 	Use of google drive, social media, calendar tools, email, file organization, project work flow, use of class communication tools (e.g. Remind, Schoology, Google Classroom, Website, etc.); adobe suite of products such as Photoshop, Illustrator, CS6, Lynda.com, google drive, all MS Office software products,	All logic concepts, charts and tables, time measurement (1)	6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4	S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1; S.CP.1

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	<p>management of shared files and online information.</p> <ol style="list-style-type: none"> 21. Facilitate group work through instant messaging or virtual meetings. 22. Manage computer operations. 23. Manage file storage. 24. Compress or alter files. 	<p>Web Expressions, CIW (certification you can receive for web), Flash, Prezi, Weebly (or other template based website creation tools), common software and operating system utilities, drop box, network attached storage, file backup, Virtual meeting and group work software such as google hangout, Kahoot, skype, facebook groups, message boards; project management software</p>			
	<p>V. SYSTEMS</p> <p>A. Describe the nature and types of business organizations to build an understanding of the scope of organizations.</p> <ol style="list-style-type: none"> 1. Describe the types and functions of businesses. 2. Explain the functions and interactions of common departments within a business. 3. Describe quality control standards and practices common to the workplace. <p>B. Analyze and summarize the use of IT in business to enhance effectiveness.</p> <ol style="list-style-type: none"> 1. Integrate IT into various types of business models. 	<p>Guest speakers describing work environment, site visits and field experiences, career exploration, quality testing, CTSO's such as BPA, DECA, Skills USA, school clubs, MI association</p>	<p>All logic concepts, computation of fractions and whole numbers, charts and graphs, time measurements (1)</p>	<p>6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4; 6.NS.2; 6.NS.3; 7.NS.1; 6.NS.1; 7.NS.3; 7.EE.3</p>	<p>S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1; S.CP.1; A.APR.1; A.APR.7; N.RN.3; N.Q.1;</p>

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	<p>2. Summarize the importance of cross-functional teams in achieving IT project goals. 3. Describe strategies for maximizing productivity in a high tech environment.</p> <p>C. Employ project management knowledge to oversee IT projects.</p> <p>1. Define scope of work to achieve individual and group goals. 2. Develop time and activity plans to achieve objectives. 3. Implement project methodologies to manage information system projects.</p>	<p>broadcasters, MI Interscholastic Press Assn; strategic implementation of appropriate technology to fit the business scenario; team building; all project planning concepts; communication skills to maximize productivity</p>			
	<p>VI. SAFETY, HEALTH AND ENVIRONMENTAL</p> <p>D. Employ knowledge of response techniques to create a disaster and/or emergency response plan.</p> <p>1. Employ leadership skills to accomplish organizational goals and objectives. 2. Employ organizational and staff development skills to foster positive working relationships and accomplish organizational goals. 3. Employ teamwork skills to achieve collective goals and use team members' talents effectively. 4. Establish and maintain effective working relationships with all levels of personnel and other departments in order to accomplish objectives and tasks. 5. Conduct and participate in meetings to accomplish work tasks. 6. Employ mentoring skills to inspire and teach others.</p>	<p>Workplace training such as PASSES, team building, team projects, peer reviews of work, contests, conferences, CTSO activities, mentor fellow students, internships, guest speakers, former student visits/presentations, collaborative events w/ other fields of study</p>			
	<p>VII. LEADERSHIP AND TEAMWORK</p> <p>A. Use leadership and teamwork skills in collaborating with others to accomplish organizational goals and objectives.</p> <p>1. Employ leadership skills to accomplish organizational goals and objectives.</p>	<p>Workplace training such as PASSES, team building, team projects, peer</p>			

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	<p>2. Employ organizational and staff development skills to foster positive working relationships and accomplish organizational goals.</p> <p>3. Employ teamwork skills to achieve collective goals and use team members' talents effectively.</p> <p>4. Establish and maintain effective working relationships with all levels of personnel and other departments in order to accomplish objectives and tasks.</p> <p>5. Conduct and participate in meetings to accomplish work tasks.</p> <p>6. Employ mentoring skills to inspire and teach others.</p>	<p>reviews of work, contests, conferences, CTSO activities, mentor fellow students, internships, guest speakers, former student visits/presentations, collaborative events w/ other fields of study</p>			
	<p>IX. EMPLOYABILITY AND CAREER DEVELOPMENT</p> <p>A. Know and understand the importance of employability skills.</p> <p>1. Identify and demonstrate positive work behaviors and personal qualities needed to be employable.</p>	<p>Working in teams, connections w/ professionals, resume writing, job applications, trends in employment, mock interviews, digital portfolios</p>			
	<p>X. TECHNICAL SKILLS</p> <p>A. Employ information management techniques and strategies in the workplace to assist in decision-making.</p> <p>1. Use information literacy skills when accessing, evaluating and disseminating information.</p> <p>2. Describe the nature and scope of information management.</p> <p>3. Maintain records to facilitate ongoing business operations.</p> <p>B. Employ planning and time management skills and tools to enhance results and complete work tasks.</p> <p>1. Develop goals and objectives.</p> <p>2. Prioritize tasks to be completed.</p> <p>3. Develop timelines using time management knowledge and skills.</p> <p>4. Use project-management skills to improve</p>	<p>Evaluating credibility of sources of information such as websites, technical manuals, etc., forum posts. See related items under 1 IV. , Budgeting, quality testing. Scope of project</p>	<p>All operations on whole numbers, decimals fractions and percentages, concepts of variation (direct and indirect), charts and graphs. (2)</p>	<p>6.NS.2; 6.NS.3; 6.NS.2; 6.NS.5; 7.NS.1; 7.NS.2; 6.NS.1; 7.NS.3; 6.RP.2; 6.RP.3; 7.EE.2; 7.EE.3; 6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4</p>	<p>A.APR.1; A.APR.7; N.RN.3; N.Q.1; S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1</p>

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	<p>workflow and minimize costs.</p> <p>P. Identify and describe quality assurance concepts to develop an understanding of the requirements for quality IT products/services.</p> <ol style="list-style-type: none"> 1. Explain the history and standards of key quality management initiatives. 2. Explain the terminology, role and benefits of quality within an organization. 3. Summarize the elements of a quality management system. 				
	<p>CI. WEB AND DIGITAL COMMUNICATIONS PATHWAY</p> <p>A. Participate in a user focused design and development process to produce Web and digital communications solutions.</p> <ol style="list-style-type: none"> 1. Participate in iterative development with clients and team members. <p>D. Prepare digital communication product specifications to communicate specifications with various audiences.</p> <ol style="list-style-type: none"> 1. Prepare functional specifications. 2. Prepare visual design specifications. 3. Create final project plan. 	<p>Project creation, review, revision, testing; team projects, working with clients on projects (managing expectations, etc.), flow charting, project plans, purpose statements, documentation, quality assurance, product verification</p>	<p>Charts and tables, whole numbers, logic concepts, time measure (1)</p>	<p>6.NS.2; 6.NS.3; 7.NS.1; 7.EE.3; 6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4</p>	<p>A.APR.1; A.APR.7; N.RN.3; N.Q.1; S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1; S.CP.1</p>
2	<p>LEGAL, ETHICAL, DESIGN AND SAFETY STANDARDS</p>				

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	<p>IV. INFORMATION TECHNOLOGY APPLICATIONS</p> <p>C. Demonstrate Digital Citizenship</p> <ol style="list-style-type: none"> 1. Identify legal and ethical issues related to the use of information and communication technologies (e.g., properly selecting and citing resources) 2. Discuss possible long-range effects of unethical uses of technology (e.g., virus spreading, file pirating, hacking) on cultures and society 3. Discuss and demonstrate proper netiquette in online communications 4. Identify ways that individuals can protect their technology systems from unethical or unscrupulous users 5. Create appropriate citations for resources when presenting research findings 6. Discuss and adhere to fair use policies and copyright guidelines 	<p>Safety such as PASS, netiquette, proper selection and citing of sources, copyright, plagiarism, Creative Commons, your rights under copyright, file encryption, impact of social media profiles, file pirating, password guidelines, file security, back up, managing your digital footprint</p>			
	<p>VI. SAFETY, HEALTH AND ENVIRONMENTAL</p> <p>A. Implement personal and jobsite safety rules and regulations to maintain safe and healthful working conditions and environments.</p> <ol style="list-style-type: none"> 1. Assess workplace conditions with regard to safety and health. 2. Select appropriate personal protective equipment as needed for a safe workplace/jobsite. 3. Employ a safety hierarchy and communication system within the workplace/jobsite. 4. Implement safety precautions to maintain a safe worksite. <p>B. Complete work tasks in accordance with employee rights and responsibilities and employers obligations to maintain workplace safety and health.</p> <ol style="list-style-type: none"> 1. Identify rules and laws designed to promote safety and health in the workplace. 2. State the rationale of rules and laws designed to promote safety and health. 	<p>PASSES Edge or similar training, ergonomics, safe electrical procedures, fire, tornado and lockdown drills.</p>			

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	<p>C. Employ emergency procedures as necessary to provide aid in workplace accidents.</p> <ol style="list-style-type: none"> 1. Use knowledge of First Aid procedures as necessary. 2. Use knowledge of CPR procedures as necessary. 3. Use safety equipment as necessary. <p>D. Employ knowledge of response techniques to create a disaster and/or emergency response plan.</p> <ol style="list-style-type: none"> 1. Complete an assessment of an emergency and/or disaster situation. 2. Create an emergency and/or disaster plan. 				
	<p>VIII. ETHICS AND LEGAL RESPONSIBILITIES</p> <p>A. Know and understand the importance of professional ethics and legal responsibilities.</p> <ol style="list-style-type: none"> 1. Apply ethical reasoning to a variety of workplace situations in order to make ethical decisions. 2. Interpret and explain written organizational policies and procedures to help employees perform their jobs according to employer rules and expectations. 3. Explain legal issues faced by IT professionals. 	<p>Professional communication skills, guest speakers and presenters, site visits, CTSO, classroom norms and expectations</p>			
	<p>IX. EMPLOYABILITY AND CAREER DEVELOPMENT</p> <p>C. Demonstrate skills related to seeking and applying for employment to find and obtain a desired job.</p> <ol style="list-style-type: none"> 10. Identify and exhibit traits for retaining employment to maintain employment once secured. 	<p>Resumes, mock interviews, site visits, internship expectations and opportunities, professional conduct, job shadow, interviews with professionals, CTSO, networking, Professional networking such as:</p>			

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
		LinkedIn, About Me			
	<p>XI. WEB AND DIGITAL COMMUNICATIONS PATHWAY</p> <p>A. Participate in a user focused design and development process to produce Web and digital communications solutions.</p> <p>2. Analyze Usability and Accessibility as it pertains to customer needs.</p> <p>J. Consider intellectual property issues when creating Web pages.</p> <p>1. Explain the concept of intellectual property.</p> <p>2. Differentiate between copyright and trademarks.</p> <p>3. Describe the function of a non-disclosure agreement (NDA).</p>	Entire planning and design process such as Flow charts, prototypes; customer meetings, team projects, projects with businesses or other organizations, needs analysis	All logic concepts, charts and tables (1)	6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4	S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1; S.CP.1
3	GRAPHIC DESIGN				
	<p>III. PROBLEM-SOLVING AND CRITICAL THINKING</p> <p>B. Employ organization and design principles to sort and group information used in the IT industry.</p> <p>2. Demonstrate the use of design and color principles.</p>	Apply established design and color principles to a variety of projects, CRAP (contrast, repetition, alignment, proximity), rule of 1/3's	Computation of whole numbers, fractions and percentages, ratios and proportions, area, length, width, geometric principles such as angle, polygon, similar polygons	6.NS.2; 6.NS.3; 6.NS.1; 6.EE.2; 7.NS.1; 7.NS.3; 7.EE.2; 6.RP.1; 6.RP.2; 6.RP.3; 7.RP.1; 7.RP.2; 7.RP.3; 7.EE.3; 6.G.1; 6.G.2; 6.G.3; 7.G.1; 7.G.4; 7.G.6; 7.G.2; 8.G.2	A.APR.1; A.APR.7; N.RN.3; N.Q.1; G.MG.3; G.GPE.7; G.MG.2
	<p>IV. INFORMATION TECHNOLOGY APPLICATIONS</p> <p>B. Employ technological tools to expedite workflow.</p> <p>10. Prepare complex multi-media publications.</p>	Encompasses all aspects of our programs such as: portfolio website with written, visual and audio components;	All logic concepts, charts and tables, bar graphs, line graphs, computation of whole numbers, direct and inverse variation, substituting data into	6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4; 6.NS.2; 6.NS.3; 7.NS.1; 6.EE.6; 6.EE.7;	S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1; S.CP.1; A.APR.1; A.APR.7; N.RN.3; N.Q.1; A.CED.1; A.CED.2; A.CED.3; A.CED.4;

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
		educational game creation for a specific audience	formulas, linear and system equations, application involving trigonometric functions	6.EE.8; 6.EE.9; 7.EE.1; 7.EE.2; 7.EE.3; 7.EE.4; 8.EE.7; 8.EE.8; 8.F.4; 8.EE.5	A.REI.3; A.REI.4; A.REI.10; F.LE.1; F.LE.2; F.LE.5; F.IF.5; A.SSE.1; F.BF.1; S.ID.6; G.SRT.6; G.SRT.8; G.SRT.9; G.SRT.10; G.SRT.11; F.TF.3; F.TF.5; F.TF.7
	<p>XI. WEB AND DIGITAL COMMUNICATIONS PATHWAY</p> <p>B. Design and employ the use of motion graphics to create a visual Web/digital designs.</p> <ol style="list-style-type: none"> 1. Implement functional design criteria. 2. Create product visual design. 3. Employ basic motion graphic programming knowledge. <p>D. Prepare digital communication product specifications to communicate specifications with various audiences.</p> <ol style="list-style-type: none"> 2. Prepare visual design specifications. 	Encompasses all aspects of our programing languages and digital multimedia software such as: Scratch, Alice, Python, Creative Suite Products.	All logic concepts, charts and tables, bar graphs, line graphs, computation of whole numbers, direct and inverse variation, substituting data into formulas, linear and system equations, application involving trigonometric functions	6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4; 6.NS.2; 6.NS.3; 7.NS.1; 6.EE.6; 6.EE.7; 6.EE.8; 6.EE.9; 7.EE.1; 7.EE.2; 7.EE.3; 7.EE.4; 8.EE.7; 8.EE.8; 8.F.4; 8.EE.5	S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1; S.CP.1; A.APR.1; A.APR.7; N.RN.3; N.Q.1; A.CED.1; A.CED.2; A.CED.3; A.CED.4; A.REI.3; A.REI.4; A.REI.10; F.LE.1; F.LE.2; F.LE.5; F.IF.5; A.SSE.1; F.BF.1; S.ID.6; G.SRT.6; G.SRT.8; G.SRT.9; G.SRT.10; G.SRT.11; F.TF.3; F.TF.5; F.TF.7
4	CUSTOMER SERVICE AND PLANNING				
	<p>I. ACADEMIC FOUNDATIONS</p> <p>A. Demonstrate language arts knowledge and skills required to pursue the full range of post-secondary education and career opportunities.</p> <ol style="list-style-type: none"> 1. Select and employ appropriate reading and communication strategies to learn and use technical concepts and vocabulary in practice. 2. Demonstrate use of the concepts, strategies, and systems for obtaining and conveying ideas and information to enhance communication in the workplace 	Synthesis of technical reading and writing, implement strategies into projects and activities; proper			

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	<p>3. Locate, organize and reference written information from various sources to communicate with co-workers and clients/participants.</p> <p>4. Evaluate and use information resources to accomplish specific occupational tasks.</p> <p>5. Use correct grammar, punctuation and terminology to write and edit documents.</p> <p>6. Develop and deliver formal and informal presentations using appropriate media to engage and inform audiences.</p>	<p>use of resources, research to identify information and solutions; all aspects of project planning and implementation, creation of a variety of presentations both formal and informal using numerous digital tools.</p>			
	<p>II. COMMUNICATIONS</p> <p>B. Apply active listening skills to obtain and clarify information.</p> <p>3. Model behaviors that demonstrate active listening.</p> <p>E. Perform scheduling functions to meet customer needs.</p> <p>1. Schedule customer appointments.</p> <p>2. Document results of customer appointments.</p>	<p>Guest speakers, tutorials, projects involving clients such as businesses or clubs, note taking, review of project plans and flowcharts with clients</p>	<p>Time measure, charts and tables (1)</p>	<p>6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4</p>	<p>S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1</p>
	<p>III. PROBLEM-SOLVING AND CRITICAL THINKING</p> <p>A. Solve problems using critical thinking skills (analyze, synthesize, and evaluate) independently and in teams. Solve problems using creativity and innovation.</p> <p>3. Employ critical thinking and interpersonal skills to resolve conflicts with staff and/or customers.</p> <p>4. Identify, write and monitor workplace performance goals to guide progress in assigned areas of responsibility and accountability.</p> <p>5. Conduct technical research to gather information necessary for decision-making.</p>	<p>team projects using a variety of software (e.g. finch robots, circuits) to solve problems; brainstorm, troubleshooting when things don't work correctly; working with businesses</p>			

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
		analyzing , synthesizing and evaluating when creating projects for business; coming up with a plan to create (web site, program, etc – see above); guest speaker presentations on working with customers; resolving conflicts within work teams			
	<p>VI. SAFETY, HEALTH AND ENVIRONMENTAL</p> <p>D. Employ knowledge of response techniques to create a disaster and/or emergency response plan.</p> <p>3. Employ teamwork skills to achieve collective goals and use team members' talents effectively.</p> <p>4. Establish and maintain effective working relationships with all levels of personnel and other departments in order to accomplish objectives and tasks.</p>	School fire, tornado, lockdown drills; disaster recovery procedures			
	<p>VIII. ETHICS AND LEGAL RESPONSIBILITIES</p> <p>A. Know and understand the importance of professional ethics and legal responsibilities.</p> <p>2. Interpret and explain written organizational policies and procedures to help employees perform their jobs according to employer rules and expectations.</p>	School and classroom norms and expectations			
	<p>IX. EMPLOYABILTIY AND CAREER DEVELOPMENT</p> <p>A. Know and understand the importance of</p>	Professional dress, co worker	Computation of whole numbers and	6.NS.2; 6.NS.3; 6.NS.5; 7.NS.1;	A.APR.1; A.APR.7; N.RN.3; N.Q.1

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	<p>employability skills.</p> <ol style="list-style-type: none"> 1. Identify and demonstrate positive work behaviors and personal qualities needed to be employable. 2. Manage resources in relation to the position (i.e. budget, supplies, computer, etc). <p>B. Explore, plan, and effectively manage careers.</p> <ol style="list-style-type: none"> 1. Develop a personal career plan to meet career goals and objectives. 2. Identify and explore career opportunities in one or more career pathways to build an understanding of the opportunities available in the cluster. 3. Recognize and act upon requirements for career advancement to plan for continuing education and training. 4. Continue professional development to keep current on relevant trends and information within the industry. 5. Examine licensing, certification and credentialing requirements at the national, state and local levels to maintain compliance with industry requirements. 6. Examine employment opportunities in entrepreneurship to consider entrepreneurship as an option for career planning. <p>C. Demonstrate skills related to seeking and applying for employment to find and obtain a desired job.</p> <ol style="list-style-type: none"> 1. Use multiple resources to locate job opportunities. 2. Prepare a résumé. 3. Prepare a letter of application. 4. Complete an employment application. 5. Interview for employment. 6. List the standards and qualifications that must be met in order to enter a given industry. 7. Employ critical thinking and decision-making skills to exhibit qualifications to a potential employer. 8. Maintain a career portfolio to document knowledge, skills and experience in a career field. 9. Demonstrate skills in evaluating and comparing employment opportunities in order to accept employment positions that match career goals. 10. Identify and exhibit traits for retaining employment to maintain employment once 	<p>relationships, discussion of all workplace expectations skills (e.g. punctuality), resume; mock interviews; career exploration; guest speakers; EDP's, Advisory Committee of industry experts; budgeting.</p>	<p>decimals (2)</p>	<p>7.NS.2; 7.NS.3; 7.EE.3</p>	

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	secured.				
	<p>XI. WEB AND DIGITAL COMMUNICATIONS PATHWAY</p> <p>C. Gather and analyze digital communication customer requirements to best meet consumer needs.</p> <ol style="list-style-type: none"> 1. Gather data to identify customer requirements. 2. Collect requirements data from customers and competing Web sites. 3. Evaluate requirements data that has been collected. 4. Demonstrate how to create and receive approval for a Web site plan. 5. Convey technical concepts from Web design to a non-technical audience. <p>I. Perform maintenance and customer support functions for digital communication products to maintain the delivery of quality products that meet customer needs.</p> <ol style="list-style-type: none"> 2. Employ customer service techniques and strategies. 	<p>projects involving clients such as businesses or clubs, note taking, review of project plans, requirements and flowcharts with clients</p>	<p>Time measure, charts and tables (1)</p>	<p>6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4</p>	<p>S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1</p>
5	DIGITAL COMMUNICATION				
	<p>IV. INFORMATION TECHNOLOGY APPLICATIONS</p> <p>C. Demonstrate Digital Citizenship</p> <ol style="list-style-type: none"> 1. Identify legal and ethical issues related to the use of information and communication technologies (e.g., properly selecting and citing resources) 2. Discuss possible long-range effects of unethical uses of technology (e.g., virus spreading, file pirating, hacking) on cultures and society 3. Discuss and demonstrate proper netiquette in online communications 4. Identify ways that individuals can protect their technology systems from unethical or 	<p>Safety such as PASS, netiquette, proper selection and citing of sources, copyright, plagiarism, Creative Commons, your rights under copyright, file encryption, impact</p>			

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	unscrupulous users 5. Create appropriate citations for resources when presenting research findings 6. Discuss and adhere to fair use policies and copyright guidelines	of social media profiles, file pirating, password guidelines, file security, back up, managing your digital footprint			
	<p>X. TECHNICAL SKILLS</p> <p>H. Access and use Internet services when completing IT related tasks to service and update IT systems.</p> <p>5. Describe virus protection procedures. 6. Explain cookies and adware on an internet connected computer system.</p> <p>I. Install and configure software programs to maintain and update IT systems.</p> <p>2. Verify that software to be installed is licensed prior to performing installation.</p> <p>M. Recognize and analyze potential IT security threats to develop and maintain security requirements.</p> <p>1. Describe potential security threats to information systems. 2. Identify the range of security needs and the problems that can occur due to security lapses. 3. Assess security threats. 4. Develop plans to address security threats. 5. Implement plans to address security procedures. 6. Document security procedures.</p>	Technical reading, encryption and cyber safety skills, password protection	All logic concepts, Statistics concepts (2)	6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 7.SP.5; 8.SP.1; 8.SP.3; 8.SP.4	S.ID.1; S.ID.2; S.ID.3; S.ID.5; S.ID.6; S.IC.1; S.IC.3; S.IC.4; S.IC.6; S.MD.1; S.CP.1

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	<p>Q. Describe the use of computer forensics to prevent and solve information technology crimes and security breaches.</p> <ol style="list-style-type: none"> Describe the role of computer forensic investigators. Demonstrate the effective use of basic computer applications relating to forensics investigations. Identify criminal activity in relationship to cyber crime, the Internet, and Internet trafficking. 				
6	OPERATIONAL PROCEDURE				
	<p>I. ACADEMIC FOUNDATIONS</p> <p>A. Demonstrate language arts knowledge and skills required to pursue the full range of post-secondary education and career opportunities.</p> <ol style="list-style-type: none"> Evaluate and use information resources to accomplish specific occupational tasks. 	Proper citation, finding and evaluating credible resources.			
	<p>II. COMMUNICATIONS</p> <p>A. Develop and interpret tables, charts, and figures to support written and oral communications.</p> <ol style="list-style-type: none"> Create tables, charts, and figures to support written and oral communications. Interpret tables, charts, and figures used to support written and oral communication. <p>D. Exhibit public relations skills to increase internal and external customer/client satisfaction.</p> <ol style="list-style-type: none"> Communicate effectively when developing positive customer/client relationships. 	Create a variety of artifacts using Microsoft and adobe suites of products; presentations; project plans, project management; use of a variety of programming languages – interpreting and evaluating for intended audience	Charts and tables (1)	6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4	S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1
	<p>III. PROBLEM-SOLVING AND CRITICAL THINKING</p> <p>C. Use product/service design processes and</p>	Systems development life	All logic concepts, charts and tables, bar	6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5;	S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6;

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	<p>guidelines to produce a quality IT product/service.</p> <p>5. Maintain the reliability of new products/services.</p> <p>6. Demonstrate the use of design and color principles.</p>	<p>cycle, use established design and color principles throughout all projects and activities</p>	<p>graphs, line graphs, computation of whole numbers, direct and inverse variation, substituting data into formulas, linear and system equations, application involving trigonometric functions (1)</p>	<p>7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4; 6.EE.6; 6.EE.7; 6.EE.8; 6.EE.9; 7.EE.1; 7.EE.2; 7.EE.3; 7.EE.4; 8.EE.7; 8.EE.8; 8.F.4</p>	<p>S.ID.1; S.CP.1; A.CED.1; A.CED.2; A.CED.3; A.CED.4; A.REI.3; A.REI.4; A.REI.10; F.LE.1; F.LE.2; F.LE.5; F.IF.5; A.SSE.1; F.BF.1; S.ID.6; G.SRT.6; G.SRT.8; G.SRT.9; G.SRT.10; G.SRT.11; F.TF.3; F.TF.5; F.TF.7</p>
	<p>V. SYSTEMS</p> <p>A. Describe the nature and types of business organizations to build an understanding of the scope of organizations.</p> <p>1. Describe the types and functions of businesses.</p> <p>2. Explain the functions and interactions of common departments within a business.</p> <p>C. Implement quality control systems and practices to ensure quality products and services.</p> <p>1. Describe quality control standards and practices common to the workplace.</p>	<p>Career exploration, internships, technical reading and writing skills, math skills, guest speakers, site visits, advisory committee</p>			
	<p>VIII. ETHICS AND LEGAL RESPONSIBILITIES</p> <p>A. Know and understand the importance of professional ethics and legal responsibilities.</p> <p>1. Apply ethical reasoning to a variety of workplace situations in order to make ethical decisions.</p> <p>2. Interpret and explain written organizational policies and procedures to help employees perform their jobs according to employer rules and expectations.</p> <p>3. Explain legal issues faced by IT professionals.</p>	<p>Professional communication skills, guest speakers and presenters, site visits, CTSO, classroom norms and expectations</p>			
	<p>X. TECHNICAL SKILLS</p> <p>I. Install and configure software programs to maintain and update IT systems.</p> <p>1. Develop goals and objectives.</p>	<p>Technical reading, documentation of programs created,</p>			

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	<p>6. Document procedures, using clear and effective notes, for future use.</p> <p>K. Employ IT knowledge and procedures when configuring or modifying an operating system to ensure optimal system functioning.</p> <p>4. Document procedures and actions.</p> <p>P. Identify and describe quality assurance concepts to develop an understanding of the requirements for quality IT products/services.</p> <p>1. Explain the history and standards of key quality management initiatives.</p> <p>3. Summarize the elements of a quality management system.</p>	testing of projects			
	<p>XI. NETWORK SYSTEMS PATHWAY</p> <p>E. Perform network administration and monitoring to maintain a network system.</p> <p>2. Demonstrate knowledge of disaster recovery and business continuance.</p>	File back-up, cloud based storage			
7	NETWORK TECHNOLOGIES				
	<p>I. ACADEMIC FOUNDATIONS</p> <p>B. Demonstrate mathematics knowledge and skills required to pursue the full range of post-secondary education and career opportunities.</p> <p>1. Identify whole numbers, decimals, and fractions.</p> <p>2. Demonstrate knowledge of basic arithmetic operations such as addition, subtraction, multiplication, and division.</p> <p>3. Demonstrate use of relational expressions such as equal to, not equal, greater than, less than, etc.</p>	Budgeting, programming, design principles, Boolean searches,	Logic concepts, computation of whole numbers, decimals and fractions, relational expressions	6.NS.2; 6.NS.3; 6.NS.5; 7.NS.1; 7.NS.2; 7.NS.3; 6.NS.1; 6.EE.2; 7.EE.3	S.CP.1; A.APR.1; A.APR.7; N.RN.3; N.Q.1
	<p>IV. INFORAMTION TECHNOLOGY APPLICATIONS</p> <p>B. Employ technological tools to expedite workflow.</p> <p>12. Deliver presentations with supporting materials.</p>	Powerpoint, Google Slides, Prezi, websites with links, TodaysMeet, google hangouts, social media			

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	<p>V. SYSTEMS</p> <p>C. Implement quality control systems and practices to ensure quality products and services.</p> <p>3. Diagnose and make necessary corrections or improvements to a technical system in a business, industry, or simulated work place setting.</p>	<p>Troubleshooting, Systems development life cycle (iterative design, testing, implementation)</p>	<p>Logic concepts</p>		<p>S.CP.1</p>
	<p>X. TECHNICAL SKILLS</p> <p>C. Demonstrate knowledge of the hardware components associated with information systems.</p> <p>2. Explain the role of number systems in information systems.</p> <p>E. Identify and compare new IT trends and technologies to build an understanding of their potential influence on IT practices.</p> <p>1. Explain measurement techniques for increased productivity due to information support implementation.</p> <p>2. Identify new IT technologies.</p> <p>3. Assess the potential importance and impact of new IT technologies in the future.</p> <p>F. Summarize basic data communications components and trends to maintain and update IT systems.</p> <p>1. Explain data communications procedures, equipment and media.</p> <p>2. Explain data transmission codes and protocols.</p> <p>3. Explain the differences between local and wide area networks.</p> <p>4. Summarize data communication trends and issues.</p> <p>H. Access and use Internet services when completing IT related tasks to service and update IT systems.</p> <p>1. Demonstrate the use of an Internet connection.</p> <p>J. Demonstrate knowledge of Web page basics to build an understanding of Web page design and functioning.</p> <p>3. Compare and contrast clients and servers.</p> <p>4. Describe how bandwidth affects data transmission and on-screen image.</p>	<p>Binary notation, Boolean operators, social media measurement tools, mobile apps, app inventor, keeping current on trade publications, technical reading and writing, advisory committees, site visits, guest speakers, encryption, computer literacy such as basics of how computers, www, internet, network works.</p>	<p>Direct or indirect variation, logic concepts, capacity, computation</p>	<p>6.NS.2; 6.NS.3; 7.NS.1; 7.EE.3</p>	<p>A.APR.1; A.APR.7; N.RN.3; N.Q.1; S.CP.1</p>

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	<p>XI. NETWORK SYSTEMS PATHWAY C. Design a network system using technologies, tools and standards to demonstrate a basic understanding of network architecture. 1. Demonstrate knowledge of the basics of network architecture. 3. Implement common network computing platforms. 7. Use WAN systems in network development.</p>	<p>keeping current on trade publications, technical reading and writing, advisory committees, site visits, guest speakers, encryption, computer literacy such as basics of how computers, www, internet, network works.</p>	<p>Logic concepts, capacity</p>	<p>6.NS.2; 6.NS.3; 7.NS.1; 7.EE.3</p>	<p>A.APR.1; A.APR.7; N.RN.3; N.Q.1; S.CP.1</p>
8	NETWORK HARDWARE & TOOLS				
	<p>I. ACADEMIC FOUNDATIONS A. Demonstrate language arts knowledge and skills required to pursue the full range of post-secondary education and career opportunities. 5. Use correct grammar, punctuation and terminology to write and edit documents</p>	<p>Technical writing</p>			
	<p>III. PROBLEM-SOLVING AND CRITICAL THINKING A. Solve problems using critical thinking skills (analyze, synthesize, and evaluate) independently and in teams. Solve problems using creativity and innovation. 4. Conduct technical research to gather information necessary for decision-making.</p>	<p>Proper citation, finding and evaluating credible resources.</p>			

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	<p>IV. INFORMATION TECHNOLOGY APPLICATION B. Employ technological tools to expedite workflow. 1. Use information technology tools to manage and perform work responsibilities. 7. Evaluate Internet resources for reliability and validity. 10. Prepare complex multi-media publications.</p>	<p>Use of google drive, social media, calendar tools, email, file organization, project work flow, use of class communication tools (e.g. Remind, Schoology, Google Classroom, Website, etc.); adobe suite of products such as Photoshop, Illustrator, CS6, Lynda.com, google drive, all MS Office software products, Web Expressions, CIW (certification you can receive for web), Flash, Prezi, Weebly (or other template based website creation tools), common software and operating system utilities, drop box, network attached storage, file backup, Virtual meeting and</p>	<p>All logic concepts, charts and tables, time measurement (1)</p>	<p>6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4</p>	<p>S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1; S.CP.1</p>

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
		group work software such as google hangout, Kahoot, skype, facebook groups, message boards; project management software			
	X. TECHNICAL SKILLS K. Employ IT knowledge and procedures when configuring or modifying an operating system to ensure optimal system functioning. 3. Use available reference tools as appropriate.	Technical reading, proper use of online resources, tutorials, Lynda, code academy, W3 schools			
	XI. NETWORK SYSTEMS PATHWAY C. Design a network system using technologies, tools and standards to demonstrate a basic understanding of network architecture. 2. Demonstrate knowledge of basic network classifications and topologies. 4. Implement appropriate LAN physical media. 5. Characterize network connectivity basis and transmission line applications. D. Perform network system installation and configuration to launch a network system. 1. Install a network infrastructure. E. Perform network administration and monitoring to maintain a network system. 1. Monitor network performance including information management and infrastructure.	Network topology map, technical reading, network hardware components, troubleshooting	Logic concepts, charts and tables (2)	6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4	S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1; S.CP.1
9	PERSONAL SKILLS & CUSTOMER SERVICE				
	I. ACADEMIC FOUNDATIONS A. Demonstrate language arts knowledge and skills required to pursue the full range of	Synthesis of technical reading			

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	<p>post-secondary education and career opportunities.</p> <ol style="list-style-type: none"> 1. Select and employ appropriate reading and communication strategies to learn and use technical concepts and vocabulary in practice. 3. Locate, organize and reference written information from various sources to communicate with co-workers and clients/participants. 5. Use correct grammar, punctuation and terminology to write and edit documents. 6. Develop and deliver formal and informal presentations using appropriate media to engage and inform audiences. 7. Interpret verbal and nonverbal cues/behaviors to enhance communication with co-workers and clients/participants. 	<p>and writing, implement strategies into projects and activities; proper use of resources, research to identify information and solutions; all aspects of project planning and implementation, creation of a variety of presentations both formal and informal using numerous digital tools.</p>			
	<p>II. COMMUNICATIONS</p> <p>A. Develop and interpret tables, charts, and figures to support written and oral communications.</p> <ol style="list-style-type: none"> 3. Effectively use organizational protocols and systems to fulfill customer service requirements. <p>B. Apply active listening skills to obtain and clarify information.</p> <ol style="list-style-type: none"> 1. Interpret a given verbal message/information. 2. Respond with restatement and clarification techniques to clarify information. 3. Model behaviors that demonstrate active listening. 4. Schedule customer appointments. <p>D. Exhibit public relations skills to increase internal and external customer/client satisfaction.</p> <ol style="list-style-type: none"> 1. Communicate effectively when developing positive customer/client relationships. 2. Identify organization's products and 	<p>Guest speakers, tutorials, projects involving clients such as businesses or clubs, note taking, review of project plans and flowcharts with clients, site visits, advisory committee</p>	<p>Time measure, charts and tables (1)</p>	<p>6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4</p>	<p>S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1</p>

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	<p>services (including own strengths as an agent of the company).</p> <p>3. Use correct grammar to communicate verbally.</p> <p>4. Listen to a presentation and record important information. Report back identifying central themes and use key points to explain how the message applies to a similar situation.</p>				
	<p>III. PROBLEM SOLVING AND CRITICAL THINKING</p> <p>A. Solve problems using critical thinking skills (analyze, synthesize, and evaluate) independently and in teams. Solve problems using creativity and innovation.</p> <p>1. Employ critical thinking skills independently and in teams to solve problems and make decisions (e.g., analyze, synthesize and evaluate).</p>	<p>Learning software using multiple modes such as lecture, tutorial, trial and error; team projects using a variety of software (e.g. finch robots, circuits) to solve problems; brainstorm, troubleshooting when things don't work correctly; working with businesses analyzing , synthesizing and evaluating when creating projects for business; coming up with a plan to create (web site, program, etc – see above); use a variety of online sources to research</p>	<p>All logic concepts; measure of time; charts and tables (1)</p>	<p>6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4</p>	<p>S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1; S.CP.1</p>

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
		and gather information.			
	<p>VII. LEADERSHIP AND TEAMWORK A. Use leadership and teamwork skills in collaborating with others to accomplish organizational goals and objectives. 3. Employ teamwork skills to achieve collective goals and use team members' talents effectively. 4. Establish and maintain effective working relationships with all levels of personnel and other departments in order to accomplish objectives and tasks.</p>	Team projects, working with external customers to create products, leadership roles, knowledge and use of a variety of team roles, CTSO			
	<p>VIII. ETHICS AND LEGAL RESPONSIBILITIES A. Know and understand the importance of professional ethics and legal responsibilities. 2. Interpret and explain written organizational policies and procedures to help employees perform their jobs according to employer rules and expectations.</p>	Taking into consideration company policies and norms when working with external customers to create products			
	<p>IX. EMPLOYABILITY AND CAREER DEVELOPMENT A. Know and understand the importance of employability skills. 1. Identify and demonstrate positive work behaviors and personal qualities needed to be employable. 2. Manage resources in relation to the position (i.e. budget, supplies, computer, etc). B. Explore, plan, and effectively manage careers. 2. Identify and explore career opportunities in one or more career pathways to build an understanding of the opportunities available in the cluster. 3. Recognize and act upon requirements for career advancement to plan for continuing education and training. 4. Continue professional development to keep current on relevant trends and information within the industry. 5. Examine licensing, certification and credentialing requirements at the national, state</p>	Professional dress, co worker relationships, discussion of all workplace expectations skills (e.g. punctuality), resume; mock interviews; career exploration; guest speakers; EDP's, Advisory Committee of industry experts; budgeting.	Computation of whole numbers and decimals (2)	6.NS.2; 6.NS.3; 6.NS.5; 7.NS.1; 7.NS.2; 7.NS.3; 7.EE.3	A.APR.1; A.APR.7; N.RN.3; N.Q.1

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	<p>and local levels to maintain compliance with industry requirements.</p> <p>6. Examine employment opportunities in entrepreneurship to consider entrepreneurship as an option for career planning.</p> <p>C. Demonstrate skills related to seeking and applying for employment to find and obtain a desired job.</p> <ol style="list-style-type: none"> 1. Use multiple resources to locate job opportunities. 2. Prepare a résumé. 3. Prepare a letter of application. 4. Complete an employment application. 5. Interview for employment. 6. List the standards and qualifications that must be met in order to enter a given industry. 7. Employ critical thinking and decision-making skills to exhibit qualifications to a potential employer. 8. Maintain a career portfolio to document knowledge, skills and experience in a career field. 9. Demonstrate skills in evaluating and comparing employment opportunities in order to accept employment positions that match career goals. 10. Identify and exhibit traits for retaining employment to maintain employment once secured. 				
10	NETWORK MANAGEMENT				
	<p>I. ACADEMIC FOUNDATIONS</p> <p>A. Demonstrate language arts knowledge and skills required to pursue the full range of post-secondary education and career opportunities.</p> <ol style="list-style-type: none"> 6. Develop and deliver formal and informal presentations using appropriate media to engage and inform audiences. <p>B. Demonstrate mathematics knowledge and skills required to pursue the full range of post-secondary education and career opportunities.</p> <ol style="list-style-type: none"> 4. Apply data and measurements to solve a problem. 5. Analyze Mathematical problem statements for missing and/or irrelevant data. 6. Construct charts/tables/graphs from 	<p>Create a variety of artifacts for presentations including google slides, ppt, prezi, etc.</p> <p>Analyzing, synthesizing and evaluating design principles, programming, if</p>	<p>Logic concepts, substituting data into formulas, solving linear equations, computation of whole numbers, decimals and fractions, direct and inverse variation, charts, tables and graphs</p>	<p>6.NS.2; 6.NS.3; 6.NS.5; 7.NS.1; 7.NS.2; 7.NS.3; 6.NS.1; 6.EE.2; 6.EE.6; 6.EE.7; 6.EE.8; 6.EE.9; 7.EE.1; 7.EE.2; 7.EE.3; 7.EE.4; 8.EE.7; 8.EE.8; 8.F.4; 6.EE.2; 6.EE.3; 6.SP.4;</p>	<p>A.APR.1; A.APR.7; N.RN.3; N.Q.1; A.CED.1; A.CED.2; A.CED.3; A.CED.4; A.REI.3; A.REI.4; A.REI.10; F.LE.1; F.LE.2; F.LE.5; F.IF.5; A.SSE.1; F.BF.1; S.ID.6; S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1</p>

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	functions and data. 7. Analyze data when interpreting operational documents.	then statements, Boolean operators.		6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4	
	<p>V. SYSTEMS</p> <p>A. Describe the nature and types of business organizations to build an understanding of the scope of organizations. 3. Summarize the importance of cross-functional teams in achieving IT project goals.</p> <p>B. Employ project management knowledge to oversee IT projects. 1. Implement project methodologies to manage information system projects. 2. Define scope of work to achieve individual and group goals. 3. Develop time and activity plans to achieve objectives.</p> <p>C. Implement quality control systems and practices to ensure quality products and services. 2. Integrate IT into various types of business models.</p>	Guest speakers, working in a variety of teams on projects, working with customers to create products, product guidelines, project planning, project work flow and timelines, quality checking	Time measurement, charts and tables, Logic concepts, computation of whole numbers, fractions and decimals	6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4; 6.NS.1; 6.EE.2; 7.NS.1; 7.NS.2; 7.NS.3; 6.NS.2; 6.NS.3; 6.NS.5; 7.EE.3	S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1; S.CP.1; A.APR.1; A.APR.7; N.RN.3; N.Q.1
	<p>IX. EMPLOYABILITY AND CAREER DEVELOPMENT</p> <p>B. Explore, plan, and effectively manage careers. 5. Examine licensing, certification and credentialing requirements at the national, state and local levels to maintain compliance with industry requirements.</p> <p>C. Demonstrate skills related to seeking and applying for employment to find and obtain a desired job. 11. Demonstrate understanding of the impact of IT on businesses.</p>	Resumes, mock interviews, site visits, internship expectations and opportunities, professional conduct, job shadow, interviews with professionals, CTSO, networking, Professional networking such as: LinkedIn, About Me, advisory committee			
	<p>X. TECHNICAL SKILLS</p> <p>B. Employ information management</p>	Cloud and offsite storage, computer			

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	<p>techniques and strategies in the workplace to assist in decision-making.</p> <ol style="list-style-type: none"> 2. Describe the nature and scope of information management. 3. Maintain records to facilitate ongoing business operations. <p>G. Demonstrate technical knowledge of the Internet to develop and maintain IT systems.</p> <ol style="list-style-type: none"> 1. Describe Internet protocols. 2. Explain Domain Name Server (DNS). 3. Summarize Internet security issues and systems available for addressing them. <p>J. Demonstrate knowledge of Web page basics to build an understanding of Web page design and functioning.</p> <ol style="list-style-type: none"> 5. Compare the benefits of internal and external Web hosting. 	literacy skills, web design publishing options			
	<p>XI. NETWORK SYSTEMS PATHWAY</p> <p>C. Design a network system using technologies, tools and standards to demonstrate a basic understanding of network architecture.</p> <ol style="list-style-type: none"> 6. Demonstrate knowledge of communication standards for networks. 8. Implement network security systems. <p>E. Perform network administration and monitoring to maintain a network system.</p> <ol style="list-style-type: none"> 3. Perform network system administration tasks. <p>F. Perform network maintenance and user support services to maintain a network system.</p> <ol style="list-style-type: none"> 1. Identify various methods of technical support used to maintain and support a network system. 5. Perform network system maintenance. 	Network topology map, technical reading, network hardware components, troubleshooting	Logic concepts, charts and tables (2)	6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4	S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1; S.CP.1
11	TEAMWORK & LEADERSHIP				
	<p>I. ACADEMIC FOUNDATIONS</p> <p>A. Demonstrate language arts knowledge and skills required to pursue the full range of post-secondary education and career opportunities.</p> <ol style="list-style-type: none"> 2. Demonstrate use of the concepts, strategies, and systems for obtaining and 	Technical Writing; writing project plans, project time line storyboards,	Charts and tables, logic terms, if then statements, dividing a whole into parts,	6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3;	S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1; S.CP.1

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	<p>conveying ideas and information to enhance communication in the workplace.</p> <ol style="list-style-type: none"> 4. Evaluate and use information resources to accomplish specific occupational tasks. 5. Use correct grammar, punctuation and terminology to write and edit documents. 6. Develop and deliver formal and informal presentations using appropriate media to engage and inform audiences. 	<p>scripts, purpose statements, flow charts, critique, analysis, reflection of work, digital portfolio</p>	<p>compute percentages, read and write percentages (1)</p>	<p>8.SP.4; 6.NS.1; 7.NS.1; 7.NS.2; 7.NS.3; 6.RP.2; 6.RP.3; 7.EE.2; 7.EE.3</p>	
	<p>II. COMMUNICATIONS</p> <p>C. Listen to and speak with diverse individuals to enhance communication skills.</p> <ol style="list-style-type: none"> 1. Apply factors and strategies for communicating with a diverse workforce. 2. Demonstrate ability to communicate and resolve conflicts within a diverse workforce. 	<p>Guest speakers, tutorials, projects involving clients such as businesses or clubs, note taking, review of project plans and flowcharts with clients</p>	<p>Time measure, charts and tables (1)</p>	<p>6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4</p>	<p>S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1</p>
	<p>III. PROBLEM-SOLVING AND CRITICAL THINKING</p> <p>A. Solve problems using critical thinking skills (analyze, synthesize, and evaluate) independently and in teams. Solve problems using creativity and innovation.</p> <ol style="list-style-type: none"> 3. Identify, write and monitor workplace performance goals to guide progress in assigned areas of responsibility and accountability. <p>C. Use product/service design processes and guidelines to produce a quality IT product/service.</p> <ol style="list-style-type: none"> 1. Summarize the process of IT product/service design. 2. Plan for products/services using reliability factors. 3. Create products/services using reliability factors. 4. Test new products/services for reliability. 5. Maintain the reliability of new products/services. 	<p>team projects using a variety of software (e.g. finch robots, circuits) to solve problems; brainstorm, troubleshooting when things don't work correctly; working with businesses analyzing , synthesizing and evaluating when creating projects for business; coming up with a plan to</p>			

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
		<p>create (web site, program, etc – see above); guest speaker presentations on working with customers; resolving conflicts within work teams</p>			
	<p>VII. LEADERSHIP AND TEAMWORK A. Use leadership and teamwork skills in collaborating with others to accomplish organizational goals and objectives. 1. Employ leadership skills to accomplish organizational goals and objectives. 2. Employ organizational and staff development skills to foster positive working relationships and accomplish organizational goals. 3. Employ teamwork skills to achieve collective goals and use team members' talents effectively. 4. Establish and maintain effective working relationships with all levels of personnel and other departments in order to accomplish objectives and tasks. 5. Conduct and participate in meetings to accomplish work tasks. 6. Employ mentoring skills to inspire and teach others.</p>	<p>Workplace training such as PASSES, team building, team projects, peer reviews of work, contests, conferences, CTSO activities, mentor fellow students, internships, guest speakers, former student visits/presentations, collaborative events w/ other fields of study</p>			
	<p>IX. EMPLOYABILITY AND CAREER DEVELOPMENT B. Explore, plan, and effectively manage careers. 1. Explore, plan, and effectively manage careers.</p>	<p>Resumes, mock interviews, site visits, internship expectations and opportunities, professional conduct, job shadow, interviews</p>			

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
		with professionals, CTSO, networking, Professional networking such as: LinkedIn, About Me, advisory committee			
	<p>X. TECHNICAL SKILLS</p> <p>A. Employ information management techniques and strategies in the workplace to assist in decision-making.</p> <p>1. Use information literacy skills when accessing, evaluating and disseminating information.</p> <p>B. Employ planning and time management skills and tools to enhance results and complete work tasks.</p> <p>1. Develop goals and objectives. 2. Prioritize tasks to be completed. 3. Develop timelines using time management knowledge and skills. 4. Use project-management skills to improve workflow and minimize costs.</p> <p>P. Identify and describe quality assurance concepts to develop an understanding of the requirements for quality IT products/services.</p> <p>2. Explain the terminology, role and benefits of quality within an organization.</p>	Project plans, technical reading and writing, team projects, working with customers to create products, flow charts	Time measurement, charts and tables (1)	6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4	S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1
12	NETWORK ANALYSIS & DESIGN				
	<p>XI. NETWORK SYSTEMS PATHWAY</p> <p>A. Identify and analyze customer/organizational network system needs and requirements to design a network.</p> <p>1. Gather data to identify customer/organizational requirements. 2. Conduct needs analysis. 3. Develop networking requirements specifications. 4. Analyze requirements/specifications using current IT approaches.</p> <p>B. Analyze a network system to determine if it meets specifications.</p> <p>1. Analyze the computer site environment.</p>	Surveys, google forms, customer meetings, flow charts, reference exemplary examples, prototypes, analyze hardware and software resources	Charts and tables, statistics, logic concepts, time measurement	6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 7.SP.5; 8.SP.1; 8.SP.4	S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.CP.1; S.ID.1; S.ID.2; S.ID.3; S.ID.5; S.ID.6; S.MD.1

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	2. Analyze network security systems.	available; analyze customer requirements			