Curriculum Guide for Technology Education

Clinton Public Schools

Clinton
PUBLIC SCHOOLS

Clinton Public Schools
Technology Education Curriculum

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Clinton Public Schools
Technology Education Curriculum

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Clinton Public Schools

~ Mission Statement ~

The mission of the Clinton Public Schools is to educate our students. A learning environment will be provided which will support and encourage students to acquire knowledge and develop the skills necessary to become productive, contributing, and respectful members of a diverse society. Participation in the Clinton Public Schools will enable students to become lifelong learners with an understanding that their futures can hold opportunities which are infinite.

Means to Accomplish Mission

This mission is accomplished through:

- High student and staff expectations;
- Positive school climate;
- Safe and orderly school environment;
- Frequent monitoring of student progress;
- Positive school/community interactions;
- Promotion of physical and emotional well-being;
- Development of problem solving, critical, and creative thinking skills;
- Effective parental involvement;
- Adequate financial support; and
- Emphasis on the values of respect and responsibility

Clinton Public Schools

K-12 District
Foundation Skills and Competencies

Preparing independent and collaborative learners empowered to embrace the future

The purpose for establishing a set of common learning competencies is the belief that all teaching and learning should be meaningful, relevant, and connected. Therefore, there should be a common thread to link all disciplines. The following K-12 Foundation Skills and Competencies are essential for all students to become independent and collaborative learners, and must be incorporated in all disciplines. The foundation competencies are not intended to limit any discipline; rather, they are intended to provide teachers, students, and the community with a set of common expectations that will enhance curriculum development and continuity of purpose, assist teachers in planning instruction and assessment, and improve student performance.

1. Reads a variety of literary, informational, and persuasive texts with understanding, and is able to analyze, interpret, evaluate text, and reads for enjoyment.
2. Uses appropriate forms of expressions and conventions of Standard English to communicate and develop thoughts, share ideas, influence and persuade, and create and entertain.
3. Applies understanding of a writing process (drafting, revising, editing, and rewriting) to improve writing.
4. Listens and views verbal and nonverbal presentations in order to analyze, clarify, follow directions, and ask and answer questions.
5. Applies computational skills, number sense and mathematical techniques to solve problems and judge reasonableness of results.
6. Delivers oral and visual presentations using standard conventions, forms of expression, coherent sequence of thoughts, suitable vocabulary, and tools appropriate for the purpose and audience.
7. Collects, organizes, and presents data using charts, tables, and graphs to interpret findings, defend or refute predictions, and draw conclusions.
8. Investigates and evaluates information and arguments from various sources and points of view applying prior knowledge, and inductive and deductive reasoning to establish a personal stance and defend a rationale.
9. Accesses a wide range of resources (print, non-print, and technological) to expand knowledge, conduct research, communicate information, create original works, and investigate complex problems.
10. Designs and applies techniques for investigating real-world issues and problems including; posing questions, hypothesizing, observing, collecting and analyzing data, and communicating findings.
11. Works collaboratively in a group to accomplish a goal by exchanging ideas, synthesizing information, investigating solutions to a problem, sharing workload and completing assigned tasks.

Clinton Public Schools

District Curriculum

Characteristics of an Exemplary Curriculum

The following characteristics are provided to help guide work of the curriculum renewal teams for all disciplines. These characteristics are widely accepted and supported in curriculum development literature.

1. Meaningful:

   A meaningful curriculum establishes a clear set of expectations for what students need to know and demonstrate in order to be successful in today's complex world.

2. Coherent:

   A coherent curriculum provides opportunities at each level to learn and practice knowledge and skills, building on and expanding previous experiences and knowledge.

3. Articulated:

   An articulated curriculum ensures that learning at different grade levels is appropriately sequenced, maintaining connections and relationships between grade levels.

4. Aligned:

   An aligned curriculum connects the written curriculum, what is really taught, and assessment.

5. High Standards for all:

   Curriculum recognizes and reflects the need for all students to perform well in order to gain knowledge and skills necessary to be successful.

6. Reasonable in Scope:

   The curriculum provides a framework that represents a set of expectations that can be accomplished and provides teachers and administrators with guidelines for making decisions about instruction.

Seif, E. (1998). Curriculum Renewal a Case Study. Alexandria, VA: ASCD.

DuFour, R. & Eaker, R. (1998). Professional Learning Communities at Work: Best Practices for Enhancing Student Achievement

Clinton Public Schools

Technology Education Curriculum Renewal Team

Philosophy of Technology Education

Technology education is the study of human innovation, which challenges students to discover and create solutions to real-world problems. Through an integrated, experience-based program, students develop skills for the application and management of knowledge and resources related to the human made world. A strong technology-based curriculum incorporates collaborative, application-oriented, activity-based strategies in which students apply engineering principles. Students utilize a variety of tools, machines, computer systems, materials, processes and technological systems to research, design and problem-solve. Students become lifelong contributing members of our technological society who comprehend the impact of technology and are empowered with the ability to invent and innovate systems to improve quality of life.

We further believe that:

- Technology literacy empowers students to participate in a complex world in order to identify and solve the problems that face society.
- Technology competencies are best applied in meaningful activities that are integrated into classroom instruction and applied to real world situations.
- It is essential for classroom resources to keep pace with real-world advances in technology.
- Technology education prepares students to use and create the high-tech tools of tomorrow.
- Technology education helps students acquire valuable interdisciplinary and applied skills in real-world situations.
- Technology drives invention and innovations and is a thinking and doing process.
- Technology education provides opportunities to build on learning experiences through exploration of technology pathways.
- Students develop the skills to work individually and collaboratively in teams to communicate effectively, identify problems and design solutions.
- Technology education students develop positive work attitudes, general employability skills, and occupation-specific skills that prepare them for a skilled 21st century workforce.
- Technology education empowers students to make informed decisions as citizens, consumers, and employees in a technological society.
- Technology education creates innovative students who can successfully investigate and design solutions to real problems, make connections and transfer technological understanding to new and unique situations.
- Technology education provides a foundation of higher-order reasoning and knowledge for advanced education in engineering, math, science and technical programs.

Goals of Technology Education

As a result of this 6-12 Technology Education Curriculum students will:

1. Apply design principles that solve engineering and technological problems that extend human potential.
2. Extend creative abilities using technology.
3. Become educated consumers of technology for personal, professional and societal use.
4. Use technology to solve problems.
5. Develop abilities to live in a technological world.
6. Describe relationships between technology and other areas of knowledge.
7. Use technological systems and devices.
8. Troubleshoot and repair technological systems and devices.
9. Describe social, ethical and environmental impacts associated with the use of technology.
10. Develop an appreciation for the role technology plays in the designed world.
11. Describe the relationship between technology and other areas of knowledge.
12. Make informed career choices related to the designed world.

Curriculum

Structure

Clinton Public Schools

Technology Education Curriculum Renewal Team

District Frameworks

A. Creativity and Innovation

- Apply design principles that solve engineering and technological problems that extend human potential.
- Extend creative abilities using technology.

B. Critical Thinking and Problem Solving

- Become educated consumers of technology for personal, professional and societal use.
- Use technology to solve problems.

C. Interpersonal Communication and Collaboration

- Develop abilities to live in a technological world.
- Describe relationships between technology and other areas of knowledge.

D. Productivity and Accountability

- Use technological systems and devices.
- Troubleshoot and repair technological systems and devices.

E. Leadership and Responsibility

- Describe social, ethical and environmental impacts associated with the use of technology.
- Develop an appreciation for the role technology plays in the designed world.
- Describe the relationship between technology and other areas of knowledge.

F. Career Awareness

- Make informed career choices related to the designed world.

Grade	Graphic Communication	Audio/Video Communication	STEM Engineering (Construction/ Manufacturing)	STEM Engineering (Transportation/ Automotive)	Computer Aided Design (CAD)
6	Introduction to Technology		Introduction to Technology, Manufacturing, and Exploring Material Processing	Introduction to Technology	
7			Exploring Construction	Transportation, CAD, and RoboLab	Computer Aided Design (CAD)
8	Exploring Communications	Exploring Communications	Innovation & Invention and Architectural Design	Innovation & Invention	Architectural Design
HS-Course 1	Introduction to Communication	Introduction to Communication	Introduction to Engineering	Introduction to Engineering	Introduction to Engineering or Introduction to Communication
HS-Course 2	Digital Imaging or Graphic Design	Video Communications (Studio or Independent Film)	Creative Woodworking, Marine Construction, and Tech Math	Transportation Engineering	Algebra 2
HS-Course 3	Advanced Graphic Production	Advanced Audio/Video Production	Design Engineering	Design Engineering	Introduction to CAD
HS-Course 3			STEM Physics	STEM Physics	Advanced CAD

Technology Education

Graphic Communication Pathway

Intro to Technology (6)
Exploring Communications (8)
Intro to Communications (HS sem)
Digital Imaging (HS sem)
Graphic Design (HS sem)
Advanced Graphic Production (HS sem)

Course	Key Projects/Applications	Framework Emphasis	Foundation Skills & Competencies
Intro to Technology (6)	• Picture Collage • Logo Design • ID Design • Car Builder • Wind Tunnel • Bridge Builder	• Creativity and Innovation • Critical Thinking and Problem Solving • Interpersonal Communication and Collaboration • Productivity and Accountability • Career Awareness	• Uses appropriate forms of expressions and conventions of Standard English to communicate and develop thoughts, share ideas, influence and persuade, and create and entertain • Applies computational skills, number sense and mathematical techniques to solve problems and judge reasonableness of results • Accesses a wide range of resources (print, non-print, and technological) to expand knowledge, conduct research, communicate information, create original works, and investigate complex problems • Designs and applies techniques for investigating real-world issues and problems including; posing questions, hypothesizing, observing, collecting and analyzing data, and communicating findings
Exploring Communications (8)	• Exploring Career Opportunities • Electronic Media Projects • Graphics • Community Flyer • Individual Business Card • Product Brochure • Calendar	• Creativity and Innovation • Critical Thinking and Problem Solving • Productivity and Accountability • Career Awareness	• Reads a variety of literary, informational, and persuasive texts with understanding, and is able to analyze, interpret, evaluate text, and reads for enjoyment • Applies understanding of a writing process (drafting, revising, editing, and rewriting) to improve writing • Listens and views verbal and nonverbal presentations in order to analyze, clarify, follow directions, and ask and answer questions • Collects, organizes, and presents data using charts, tables, and graphs to interpret findings, defend or refute predictions, and draw conclusions

Course	Key Projects/Applications	Framework Emphasis	Foundation Skills & Competencies
Exploring Communications (8) - continued			• Accesses a wide range of resources (print, non-print, and technological) to expand knowledge, conduct research, communicate information, create original works, and investigate complex problems • Designs and applies techniques for investigating real-world issues and problems including; posing questions, hypothesizing, observing, collecting and analyzing data, and communicating findings • Works collaboratively in a group to accomplish a goal by exchanging ideas, synthesizing information, investigating solutions to a problem, sharing workload and completing assigned tasks
Intro to Communications (HS)	• 45 rpm Record • Photoshop Flattery (after) • Cool Glasses • Illustrator Portrait • Turn Car into Showroom Model • 60 Second Advertisement • Intro to Script Building • Movie Trailer Script • Stop Motion Animation • Intro to Storyboarding	• Critical Thinking and Problem Solving • Productivity and Accountability	• Reads a variety of literary, informational, and persuasive texts with understanding, and is able to analyze, interpret, evaluate text, and reads for enjoyment • Listens and views verbal and nonverbal presentations in order to analyze, clarify, follow directions, and ask and answer questions • Accesses a wide range of resources (print, non-print, and technological) to expand knowledge, conduct research, communicate information, create original works, and investigate complex problems

Course	Key Projects/Applications	Framework Emphasis	Foundation Skills & Competencies
Digital Imaging (HS)	• Documentary Project • Duplicate an Advertisement • Portfolio Presentation	• Creativity and Innovation • Critical Thinking and Problem Solving • Productivity and Accountability	• Delivers oral and visual presentations using standard conventions, forms of expression, coherent sequence of thoughts, suitable vocabulary, and tools appropriate for the purpose and audience • Collects, organizes, and presents data using charts, tables, and graphs to interpret findings, defend or refute predictions, and draw conclusions • Investigates and evaluates information and arguments from various sources and points of view applying prior knowledge, and inductive and deductive reasoning to establish a personal stance and defend a rationale • Accesses a wide range of resources (print, non-print, and technological) to expand knowledge, conduct research, communicate information, create original works, and investigate complex problems
Graphic Design (HS)	• Concert Poster • Package Design • Travel Brochure • Menu • Monopoly Board • Magazine	• Creativity and Innovation • Critical Thinking and Problem Solving • Leadership and Responsibility	• Accesses a wide range of resources (print, non-print, and technological) to expand knowledge, conduct research, communicate information, create original works, and investigate complex problems

Course	Key Projects/Applications	Framework Emphasis	Foundation Skills & Competencies
Graphic Production (HS)	• Personal Book • Class Book • Screen Printing • Single & Multi-Color • Vinyl Cutter Project • Single & Multi-Color • Production Projects	• Creativity and Innovation • Critical Thinking and Problem Solving • Interpersonal Communication and Collaboration • Productivity and Accountability	• Accesses a wide range of resources (print, non-print, and technological) to expand knowledge, conduct research, communicate information, create original works, and investigate complex problems • Works collaboratively in a group to accomplish a goal by exchanging ideas, synthesizing information, investigating solutions to a problem, sharing workload and completing assigned tasks
Advanced Graphic Production (HS)	TBD	TBD	TBD

Graphic Communication Pathway		*Intro to Technology (6)*	*Exploring Communcations (8)*	*Intro To Communications (HS sem)*	*Digital Imaging (HS sem)*	*Graphic Design (HS sem)*	*Advanced Graphic Production (HS sem)*
	Creativity & Innovation						
•	Describe the universal input, process, output, feedback (IPOF) systems model	X					
•	Design a product based on available materials, tools, and equipment			X	X	X	X
•	Develop conceptual designs for communications			X			X
•	Develop preliminary product layouts	X		X		X	
•	Develop, test and modify a design idea through experimentation	X		X	X	X	X
•	Discuss the influence of enterprise on culture, society and the environment			X			X
•	Engage in an activity that requires creativity	X		X	X	X	X
•	Explore a variety of creativity-enhancing techniques	X	X	X	X	X	X
•	Explore techniques used to refine conceptual design sketches		X	X			
•	Identify and describe the historical innovations in the evolution of communications systems and their impact on society		X	X	X	X	X
•	Identify and describe the tools, materials and methods used in manufacturing products						X
•	Identify and evaluate alternative materials						X
•	Identify the elements of design	X	X	X	X	X	X
•	Use a variety of creativity enhancing techniques in conceptual design situations	X	X	X	X	X	X
•	Identify the social and economic impacts of automation and computer controlled processing technologies	X	X				
•	Understand the principles of aerodynamics	X					

Graphic Communication Pathway		*Intro to Technology (6)*	*Exploring Communcations (8)*	*Intro To Communications (HS sem)*	*Digital Imaging (HS sem)*	*Graphic Design (HS sem)*	*Advanced Graphic Production (HS sem)*
	Critical Thinking & Problem Solving						
•	Develop several alternatives design solutions to the same problem		X	X	X	X	X
•	Acquire technology-based information and apply it in classroom and laboratory situations	X	X	X	X	X	X
•	Apply a general problem solving model including research techniques to produce a project						X
•	Apply a general problem solving model to improve upon an existing product					X	
•	Apply cooperative techniques while engaging in group problem-solving activities		X	X			X
•	Apply technological systems to solve a posed problem	X		X			
•	Be familiar with the laws related to copyrights, trademarks, and patents			X			
•	Define decision-making research and innovation	X					
•	Describe and apply the processes used to make decisions	X	X	X			
•	Develop a solution for a real-life problem	X	X				
•	Develop criteria for evaluating technology	X					
•	Develop skills in making wise consumer decisions	X					
•	Differentiate between human problems and needs	X					
•	Differentiate between invention and innovation	X					
•	Discuss how technological systems have been used to solve human problems	X					
•	Discuss the differences between problem solving and engineering design strategies	X					
•	Engage in an activity that requires creativity	X	X	X	X	X	X
•	Evaluate design ideas to determine the most appropriate			X	X	X	
•	Explain how technology and technological activity has expected and unexpected effects	X					
•	Identify appropriate sources of information for research		X	X			
•	Identify research methods, material and techniques	X		X			

Graphic Communication Pathway		*Intro to Technology (6)*	*Exploring Communcations (8)*	*Intro To Communications (HS sem)*	*Digital Imaging (HS sem)*	*Graphic Design (HS sem)*	*Advanced Graphic Production (HS sem)*
	Critical Thinking & Problem Solving						
•	Select appropriate technical processes and fabricate a prototype			X	X		X
•	Test a design idea through experimentation			X			
•	Use a communication technology to visualize a design idea			X	X	X	X
•	Use research techniques to support design development				X	X	X
•	Apply appropriate and effective questioning techniques	X					
•	Identify the elements of design	X					
•	Prepare and document a design brief	X					
•	Apply appropriate and effective questioning techniques			X			

Graphic Communication Pathway		*Intro to Technology (6)*	*Exploring Communcations (8)*	*Intro To Communications (HS sem)*	*Digital Imaging (HS sem)*	*Graphic Design (HS sem)*	*Advanced Graphic Production (HS sem)*
	Interpersonal Communication & Collaboration						
•	Acquire technology-based information and apply it in classroom and laboratory situations		X	X			
•	Apply accepted design principals of text and graphics to the layout of printed and electronically published materials			X		X	
•	Apply techniques of interpersonal communication in activities			X			
•	Create prototypes of communication instruments in various media	X	X	X			
•	Demonstrate the application of communication techniques and strategies in delivering a message electronically		X	X			
•	Demonstrate the application of communication techniques and strategies in delivering a message in audio form		X	X			
•	Demonstrate the application of communication techniques and strategies in delivering a message in printed form	X		X			
•	Demonstrate the proper use of the terminology associated with a variety of communication techniques	X	X	X			
•	Design and produce a multimedia presentation		X	X			
•	Engage in presentation activities	X	X	X			
•	Explore a variety of technological devices used for communication		X	X			
•	Identify and give examples of integrated technologies	X	X	X			
•	Identify the elements of mass communications		X				
•	Operate and apply appropriate electronic communication technology to processing, transmitting, receiving, and organizing information		X	X			
•	Trace the production of a piece of communication media from its inception to use			X			X
•	Use communications technology to acquire images and information	X		X			

Graphic Communication Pathway		*Intro to Technology (6)*	*Exploring Communcations (8)*	*Intro To Communications (HS sem)*	*Digital Imaging (HS sem)*	*Graphic Design (HS sem)*	*Advanced Graphic Production (HS sem)*
	Interpersonal Communication & Collaboration						
•	Present an idea using multimedia technology		X	X			
•	Apply techniques of interpersonal and mass communication through activities such as sketching, computer- aided drafting (CAD), photography and video	X					
•	Evaluate and select appropriate methods of communication for a given problem or situation	X					
•	Explore and identify the personal, societal, economic and environmental effects of technological systems	X					
•	Identify and describe how individual technological innovations may be combined to create new technologies	X					
•	Demonstrate skills in selecting and utilizing appropriate communication technology			X			
•	Evaluate and select appropriate methods of communication for a given problem or situation			X			
•	Send and access information through a network			X			

Graphic Communication Pathway		*Intro to Technology (6)*	*Exploring Communcations (8)*	*Intro To Communications (HS sem)*	*Digital Imaging (HS sem)*	*Graphic Design (HS sem)*	*Advanced Graphic Production (HS sem)*
	Products & Accountability						
•	Demonstrate safe and accurate use of tools, production systems and materials to create a finished product			X			
•	Describe how a business produces profit		X				
•	Describe how products are made						X
•	Describe how societies are organized to produce and distribute goods and services in a structured manner	X	X				
•	Explore pre-production and post-production processes			X			X
•	Participate in a manufacturing activity						X
•	Produce products from a variety of materials using manual and computer controlled devices				X	X	X
•	Use manual and electronic measuring devices accurately	X		X	X		X
•	Apply the method of line production in the “manufacture” of a simple product	X					
•	Define basic manufacturing terminology	X					
•	Demonstrate the appropriate selection, use and safe operation of basic hand and power tools	X					
•	Describe how products are manufactured	X					
•	Describe how products are manufactured using the methods of single craftsman, line and mass, and automated robotics manufacturing	X					

Graphic Communication Pathway		*Intro to Technology (6)*	*Exploring Communcations (8)*	*Intro To Communications (HS sem)*	*Digital Imaging (HS sem)*	*Graphic Design (HS sem)*	*Advanced Graphic Production (HS sem)*
	Leadership & Responsibility						
•	Apply organizational skills to classroom and lab activities	X		X			
•	Assume appropriate roles within a team environment	X					X
•	Consider personal strengths in determining team assignments			X			X
•	Create a simple flowchart of their daily activities	X					
•	Demonstrate an ability to take responsibility for their own actions	X	X	X			
•	Demonstrate organizational skills through planning for task completion over several weeks						X
•	Demonstrate strategies for assuming responsibility in a cooperative activity in class			X			
•	Demonstrate strategies for effectively managing time over a long term assignment						X
•	Demonstrate strategies for effectively managing time over several class periods			X			
•	Demonstrate strategies for effectively managing time	X	X	X			
•	Develop organizational skills through practical experiences			X			
•	Engage in presentation activities		X	X	X	X	X
•	Engage in presentation activity using some visual aid		X	X	X	X	X
•	Explore different roles while working cooperatively and effectively in team situations		X	X			X
•	Identify and demonstrate organizational skills	X		X			
•	Present information in an appropriate manner		X	X			

	Graphic Communication Pathway	*Intro to Technology (6)*	*Exploring Communcations (8)*	*Intro To Communications (HS sem)*	*Digital Imaging (HS sem)*	*Graphic Design (HS sem)*	*Advanced Graphic Production (HS sem)*
	Career Awareness						
•	Define and demonstrate a personal work ethic	X		X	X	X	X
•	Demonstrate awareness of changes in job requirements over time		X	X			X
•	Describe how technological development affects careers and occupations	X		X			X
•	Develop a learning portfolio of their areas of experience and expertise			X	X	X	X
•	Exhibit appropriate behavior in both school and work situations		X	X			
•	Explore career options	X	X	X			
•	Explore quality control methods						X
•	Explore techniques used to refine conceptual design sketches					X	
•	Explore the career possibilities and responsibilities in enterprise	X		X	X	X	X
•	Identify and categorize careers associated with each of the CT Career Clusters			X			X
•	Identify expectations in the workplace	X	X	X	X	X	X
•	Identify high school and postsecondary training selections necessary to prepare for a particular career choice	X		X			X
•	Prepare a preliminary career plan with connections to high school course selections			X	X	X	X
•	Research and identify career opportunities in the areas of transportation, communication, production and technology						X
•	Describe free enterprise	X					
•	Explore market research and its relationship to satisfying consumer needs	X					
•	Identify and categorize careers associated with each of the CT Career Clusters and pathways	X					
•	Participate in a variety of roles within an organizational structure	X					
•	Conduct research related to careers	X					

Intro to Technology (Grade 6)

I. Creativity & Innovation

- Describe the universal input, process, output, feedback (IPOF) systems model
- Develop preliminary product layouts
- Develop, test and modify a design idea through experimentation
- Discuss the influence of enterprise on culture, society and the environment.
- Engage in an activity that requires creativity
- Explore a variety of creativity-enhancing techniques.
- Identify the elements of design.
- Identify the social and economic impacts of automation and computer controlled processing technologies
- Understand the principles of aerodynamics
- Use a variety of creativity enhancing techniques in conceptual design situations.

II. Critical Thinking & Problem Solving

- Acquire technology-based information and apply it in classroom and laboratory situations.
- Apply appropriate and effective questioning techniques.
- Apply technological systems to solve a posed problem.
- Define decision-making research and innovation.
- Describe and apply the processes used to make decisions.
- Develop a solution for a real-life problem
- Develop skills in making wise consumer decisions
- Differentiate between human problems and needs
- Differentiate between invention and innovation
- Discuss how technological systems have been used to solve human problems
- Discuss the differences between problem solving and design strategies
- Engage in an activity that requires creativity.
- Explain how technology and technological activity has expected and unexpected effects
- Identify research methods, materials and techniques
- Identify the elements of design
- Prepare and document a design brief
- Develop criteria for evaluating technology

III. Interpersonal Communication & Collaboration

- Apply techniques of interpersonal and mass communication through activities such as sketching, computer- aided drafting (CAD), photography and video
- Create prototypes of communication instruments in various media.
- Demonstrate the proper use of the terminology associated with a variety of communication techniques.
- Engage in multimedia activities
- Evaluate and select appropriate methods of communication for a given problem or situation.
- Explore and identify the personal, societal, economic and environmental effects of technological systems

Intro to Technology (Grade 6)

III. Interpersonal Communication & Collaboration (continued)

- Identify and describe how individual technological innovations may be combined to create new technologies
- Use communications technology to acquire images and information.
- Present an idea using multimedia technology.
- Demonstrate the application of communication techniques and strategies in delivering a message in printed form.
- Identify and give examples of integrated technologies

IV. Products & Accountability

- Apply the method of line production in the "manufacture" of a simple product.
- Define basic manufacturing terminology.
- Demonstrate the appropriate selection, use and safe operation of basic hand and power tools.
- Describe how products are manufactured
- Describe how products are manufactured using the methods of single craftsman, line and mass, and automated robotics manufacturing.
- Describe how societies are organized to produce and distribute goods and services in a structured manner.
- Use manual and electronic measuring devices accurately.
- Produce a product using a simple production sequence: layout, shaping, smoothing, assembly and finishing techniques

V. Leadership & Responsibility

- Apply organizational skills to classroom and lab activities.
- Assume appropriate roles within a team environment.
- Create a simple flowchart of their daily activities.
- Demonstrate an ability to take responsibility for their own actions.
- Demonstrate strategies for effectively managing time.
- Identify and demonstrate organizational skills.

VI. Career Awareness

- Define and demonstrate a personal work ethic.
- Describe free enterprise
- Describe how technological development affects careers and occupations.
- Explore career options.
- Explore market research and its relationship to satisfying consumer needs.
- Identify and categorize careers associated with each of the CT Career Clusters and pathways
- Identify expectations in the workplace.
- Identify high school and postsecondary training selections necessary to prepare for a particular career choice.
- Participate in a variety of roles within an organizational structure.
- Conduct research related to careers.

Exploring Communications (Grade 8)

I. Creativity & Innovation

- Explore a variety of creativity-enhancing techniques
- Explore techniques used to refine conceptual design sketches
- Identify and describe the historical innovations in the evolution of communications systems and their impact on society
- Identify the elements of design
- Use a variety of creativity enhancing techniques in conceptual design situations
- Identify the social and economic impacts of automation and computer controlled processing technologies

II. Critical Thinking & Problem Solving

- Develop several alternatives design solutions to the same problem
- Acquire technology-based information and apply it in classroom and laboratory situations
- Apply cooperative techniques while engaging in group problem-solving activities
- Describe and apply the processes used to make decisions
- Develop a solution for a real-life problem
- Engage in an activity that requires creativity
- Identify appropriate sources of information for research

III. Interpersonal Communication & Collaboration

- Acquire technology-based information and apply it in classroom and laboratory situations.
- Create prototypes of communication instruments in various media.
- Demonstrate the application of communication techniques and strategies in delivering a message electronically
- Demonstrate the application of communication techniques and strategies in delivering a message in audio form
- Demonstrate the proper use of the terminology associated with a variety of communication techniques

- Design and produce a multimedia presentation
- engage in presentation activities
- Explore a variety of technological devices used for communication
- identify and give examples of integrated technologies
- identify the elements of mass communications
- Operate and apply appropriate electronic communication technology to processing, transmitting, receiving, and organizing information
- Present an idea using multimedia technology

IV. Products & Accountability

- Describe how a business produces profit
- Describe how societies are organized to produce and distribute goods and services in a structured manner

Exploring Communications (Grade 8)

V. Leadership & Responsibility

- Demonstrate an ability to take responsibility for their own actions
- Demonstrate strategies for effectively managing time
- Engage in presentation activities
- Engage in presentation activity using some visual aid
- Explore different roles while working cooperatively and effectively in team situations
- Present information in an appropriate manner

VI. Career Awareness

- Demonstrate awareness of changes in job requirements over time
- Exhibit appropriate behavior in both school and work situations
- Explore career options
- Identify expectations in the workplace

Intro to Communications (HS Semester)

I. Creativity & Innovation

- Design a product based on available materials, tools, and equipment
- Develop conceptual designs for communications
- Develop preliminary product layouts
- Develop, test and modify a design idea through experimentation
- Discuss the influence of enterprise on culture, society and the environment
- Engage in an activity that requires creativity
- Explore a variety of creativity-enhancing techniques
- Explore techniques used to refine conceptual design sketches
- Identify and describe the historical innovations in the evolution of communications systems and their impact on society
- Identify the elements of design
- Use a variety of creativity enhancing techniques in conceptual design situations

II. Critical Thinking & Problem Solving

- Develop several alternatives design solutions to the same problem
- Acquire technology-based information and apply it in classroom and laboratory situations
- Apply cooperative techniques while engaging in group problem-solving activities
- Apply technological systems to solve a posed problem
- Be familiar with the laws related to copyrights, trademarks, and patents
- Describe and apply the processes used to make decisions
- Engage in an activity that requires creativity
- Evaluate design ideas to determine the most appropriate
- Identify appropriate sources of information for research
- Identify research methods, material and techniques
- Select appropriate technical processes and fabricate a prototype
- Test a design idea through experimentation
- Use a communication technology to visualize a design idea
- Apply appropriate and effective questioning techniques

III. Interpersonal Communication & Collaboration

- Acquire technology-based information and apply it in classroom and laboratory situations
- Apply accepted design principals of text and graphics to the layout of printed and electronically published materials
- Apply techniques of interpersonal communication in activities
- Create prototypes of communication instruments in various media
- Demonstrate the application of communication techniques and strategies in delivering a message electronically
- Demonstrate the application of communication techniques and strategies in delivering a message in audio form
- Demonstrate the application of communication techniques and strategies in delivering a message in printed form

Intro to Communications (HS Semester)

III. Interpersonal Communication & Collaboration (continued)

- Demonstrate the proper use of the terminology associated with a variety of communication techniques
- Design and produce a multimedia presentation
- Engage in presentation activities
- Explore a variety of technological devices used for communication
- Identify and give examples of integrated technologies
- Operate and apply appropriate electronic communication technology to processing, transmitting, receiving, and organizing information
- Trace the production of a piece of communication media from its inception to use
- Use communications technology to acquire images and information
- Present an idea using multimedia technology
- Demonstrate skills in selecting and utilizing appropriate communication technology
- Evaluate and select appropriate methods of communication for a given problem or situation
- Send and access information through a network

IV. Products & Accountability

- Demonstrate safe and accurate use of tools, production systems and materials to create a finished product
- Explore pre-production and post-production processes
- Use manual and electronic measuring devices accurately

V. Leadership & Responsibility

- Apply organizational skills to classroom and lab activities
- Consider personal strengths in determining team assignments
- Demonstrate an ability to take responsibility for their own actions
- Demonstrate strategies for assuming responsibility in a cooperative activity in class
- Demonstrate strategies for effectively managing time over several class periods
- Demonstrate strategies for effectively managing time
- Develop organizational skills through practical experiences
- Engage in presentation activities
- Engage in presentation activity using some visual aid
- Explore different roles while working cooperatively and effectively in team situations
- Identify and demonstrate organizational skills
- Present information in an appropriate manner

VI. Career Awareness

- Define and demonstrate a personal work ethic.
- Demonstrate awareness of changes in job requirements over time.
- Describe how technological development affects careers and occupations.
- Develop a learning portfolio of their areas of experience and expertise.
- Exhibit appropriate behavior in both school and work situations.

Intro to Communications (HS Semester)

VI. Career Awareness (continued)

- Explore career options
- Explore the career possibilities and responsibilities in enterprise
- Identify and categorize careers associated with each of the CT Careeer Clusters
- Identify expectations in the workplace
- Identify high school and postsecondary training selections necessary to prepare for a particular career choice
- Prepare a preliminary career plan with connections to high school course selections

Digital Imaging (HS Semester)

I. Creativity & Innovation

- Design a product based on available materials, tools, and equipment
- Develop, test and modify a design idea through experimentation
- Engage in an activity that requires creativity
- Explore a variety of creativity-enhancing techniques
- Identify and describe the historical innovations in the evolution of communications systems and their impact on society
- Identify the elements of design
- Use a variety of creativity enhancing techniques in conceptual design situations

II. Critical Thinking & Problem Solving

- Develop several alternatives design solutions to the same problem
- Acquire technology-based information and apply it in classroom and laboratory situations
- Engage in an activity that requires creativity
- Evaluate design ideas to determine the most appropriate
- Select appropriate technical processes and fabricate a prototype
- Use a communication technology to visualize a design idea
- Use research techniques to support design development

III. Interpersonal Communication & Collaboration

Not applicable

IV. Products & Accountability

- Produce products from a variety of materials using manual and computer controlled devices
- Use manual and electronic measuring devices accurately

V. Leadership & Responsibility

- Engage in presentation activities
- Engage in presentation activity using some visual aid

VI. Career Awareness

- Define and demonstrate a personal work ethic
- Develop a learning portfolio of their areas of experience and expertise
- Explore the career possibilities and responsibilities in enterprise
- Identify expectations in the workplace
- Prepare a preliminary career plan with connections to high school course selections

Graphic Design (HS Semester)

I. Creativity & Innovation

- Design a product based on available materials, tools, and equipment
- Develop preliminary product layouts
- Develop, test and modify a design idea through experimentation
- Engage in an activity that requires creativity
- Explore a variety of creativity-enhancing techniques
- Identify and describe the historical innovations in the evolution of communications systems and their impact on society
- Identify the elements of design
- Use a variety of creativity enhancing techniques in conceptual design situations

II. Critical Thinking & Problem Solving

- Develop several alternatives design solutions to the same problem
- Acquire technology-based information and apply it in classroom and laboratory situations
- Apply a general problem solving model to improve upon an existing product
- Engage in an activity that requires creativity
- Evaluate design ideas to determine the most appropriate
- Use a communication technology to visualize a design idea
- Use research techniques to support design development

III. Interpersonal Communication & Collaboration

- Apply accepted design principals of text and graphics to the layout of printed and electronically published materials

IV. Products & Accountability

- Produce products from a variety of materials using manual and computer controlled devices

V. Leadership & Responsibility

- Engage in presentation activities
- Engage in presentation activity using some visual aid

VI. Career Awareness

- Define and demonstrate a personal work ethic
- Develop a learning portfolio of their areas of experience and expertise
- Explore techniques used to refine conceptual design sketches
- Explore the career possibilities and responsibilities in enterprise
- Identify expectations in the workplace
- Prepare a preliminary career plan with connections to high school course selections

Advanced Graphic Production (HS Semester)

I. Creativity & Innovation

- Design a product based on available materials, tools, and equipment
- Develop conceptual designs for communications
- Develop, test and modify a design idea through experimentation
- Discuss the influence of enterprise on culture, society and the environment
- Engage in an activity that requires creativity
- Explore a variety of creativity-enhancing techniques
- Identify and describe the historical innovations in the evolution of communications systems and their impact on society
- Identify and describe the tools, materials and methods used in manufacturing products;
- Identify and evaluate alternative materials
- Identify the elements of design
- Use a variety of creativity enhancing techniques in conceptual design situations

II. Critical Thinking & Problem Solving

- Develop several alternatives design solutions to the same problem
- Acquire technology-based information and apply it in classroom and laboratory situations
- Apply a general problem solving model including research techniques to produce a project
- Apply cooperative techniques while engaging in group problem-solving activities
- Engage in an activity that requires creativity
- Select appropriate technical processes and fabricate a prototype
- Use a communication technology to visualize a design idea
- Use research techniques to support design development

III. Interpersonal Communication & Collaboration

- Trace the production of a piece of communication media from its inception to use

IV. Products & Accountability

- Describe how products are made
- Explore pre-production and post-production processes
- Participate in a manufacturing activity
- Produce products from a variety of materials using manual and computer controlled devices
- Use manual and electronic measuring devices accurately

V. Leadership & Responsibility

- Assume appropriate roles within a team environment
- Consider personal strengths in determining team assignments
- Demonstrate organizational skills through planning for task completion over several weeks
- Demonstrate strategies for effectively managing time over a long term assignment
- Engage in presentation activities
- Engage in presentation activity using some visual aid

Advanced Graphic Production (HS Semester)

VI. Career Awareness

- Explore different roles while working cooperatively and effectively in team situations
- Define and demonstrate a personal work ethic
- Demonstrate awareness of changes in job requirements over time
- Describe how technological development affects careers and occupations
- Develop a learning portfolio of their areas of experience and expertise
- Explore quality control methods
- Explore the career possibilities and responsibilities in enterprise
- Identify and categorize careers associated with each of the CT Career Clusters
- Identify expectations in the workplace
- Identify high school and postsecondary training selections necessary to prepare for a particular career choice
- Prepare a preliminary career plan with connections to high school course selections
- Research and identify career opportunities in the areas of transportation, communication, production and technology

Technology Education

Audio/Video Communication Pathway

Intro to Technology (6)
Exploring Communications (8)
Intro to Communications (HS sem)
Video Communications – Studio (HS sem)
Video Communications – Independent Film (HS sem)
Advanced Audio/Video Production (HS sem)

Course	Key Projects/Applications	Framework Emphasis	Foundation Skills and Competencies
Intro to Technology (6)	• Picture Collage • Logo Design • ID Design • Car Builder • Wind Tunnel • Bridge Builder	• Creativity and Innovation • Critical Thinking and Problem Solving • Interpersonal Communication and Collaboration • Productivity and Accountability • Career Awareness	• Uses appropriate forms of expressions and conventions of Standard English to communicate and develop thoughts, share ideas, influence and persuade, and create and entertain • Applies computational skills, number sense and mathematical techniques to solve problems and judge reasonableness of results • Accesses a wide range of resources (print, non-print, and technological) to expand knowledge, conduct research, communicate information, create original works, and investigate complex problems • Designs and applies techniques for investigating real-world issues and problems including; posing questions, hypothesizing, observing, collecting and analyzing data, and communicating findings

Exploring Communications (8)	• Exploring Career Opportunities
	• Electronic Media Projects
	• Graphics
	  • Community Flyer
	  • Individual Business Card
	  • Product Brochure
	  • Calendar
		• Creativity and Innovation
		• Critical Thinking and Problem Solving
		• Productivity and Accountability
		• Career Awareness
			• Reads a variety of literary, informational, and persuasive texts with understanding, and is able to analyze, interpret, evaluate text, and reads for enjoyment
			• Applies understanding of a writing process (drafting, revising, editing, and rewriting) to improve writing
			• Listens and views verbal and nonverbal presentations in order to analyze, clarify, follow directions, and ask and answer questions
			• Collects, organizes, and presents data using charts, tables, and graphs to interpret findings, defend or refute predictions, and draw conclusions
			• Accesses a wide range of resources (print, non-print, and technological) to expand knowledge, conduct research, communicate information, create original works, and investigate complex problems

Course	Key Projects/Applications	Framework Emphasis	Foundation Skills and Competencies
Exploring Communications (8) (continued)			• Designs and applies techniques for investigating real-world issues and problems including; posing questions, hypothesizing, observing, collecting and analyzing data and communicating findings • Works collaboratively in a group to accomplish a goal by exchanging ideas, synthesizing information, investigating solutions to a problem, sharing workload and completing assigned tasks
Introduction to Communication (HS)	• 45 rpm record • Photoshop Flattery (after) • Cool Glasses • Illustrator Portrait • Turn Car into Showroom Model • 60 Second Advertisement • Intro to Script Building • Movie Trailer Script • Stop Motion Animation • Intro to Storyboarding	• Critical Thinking and Problem Solving • Productivity and Accountability	• Reads a variety of literary, informational, and persuasive texts with understanding and is able to analyze, interpret, evaluate text, and reads for enjoyment. • Listens and views verbal and nonverbal presentations in order to analyze, clarify, follow directions, and ask and answer questions. • Accesses a wide range of resources (print, non-print, and technological) to expand knowledge, conduct research, communicate information, create original works, and investigate complex problems.
Video Communications Studio (HS)	• Script Building • Storyboard Building • Editing Filming	• Creativity and Innovation • Critical Thinking and Problem Solving • Interpersonal Communication and Collaboration • Productivity and Accountability • Leadership and Responsibility	• Applies understanding of a writing process (drafting, revising, editing, and rewriting) to improve writing • Listens and views verbal and nonverbal presentations in order to analyze, clarify, follow directions, and ask and answer questions • Delivers oral and visual presentations using standard conventions, forms of expression, coherent sequence of thoughts, suitable vocabulary, and tools appropriate for the purpose and audience • Works collaboratively in a group to accomplish a goal by exchanging ideas, synthesizing information, investigating solutions to a problem, sharing workload and completing assigned tasks.

Course	Key Projects/Applications	Framework Emphasis	Foundation Skills and Competencies
Video Communications Independent (HS)	• Script Building • Storyboard Building • Editing Filming	• Creativity and Innovation • Critical Thinking and Problem Solving • Interpersonal Communication and Collaboration • Productivity and Accountability • Leadership and Responsibility	• Applies understanding of a writing process (drafting, revising, editing, and rewriting) to improve writing. • Listens and views verbal and nonverbal presentations in order to analyze, clarify, follow directions, and ask and answer questions. • Delivers oral and visual presentations using standard conventions, forms of expression, coherent sequence of thoughts, suitable vocabulary, and tools appropriate for the purpose and audience. • Works collaboratively in a group to accomplish a goal by exchanging ideas, synthesizing information, investigating solutions to a problem, sharing workload and completing assigned tasks.
Advanced Audio/Video Production (HS)	• Dynamic Title • Song • Film with Special Effects • Career Exploration	• Creativity and Innovation • Critical Thinking and Problem Solving • Productivity and Accountability • Career Awareness	• Reads a variety of literary, informational, and persuasive texts with understanding, and is able to analyze, interpret, evaluate text, and reads for enjoyment. • Listens and views verbal and nonverbal presentations in order to analyze, clarify, follow directions, and ask and answer questions. • Accesses a wide range of resources (print, non-print, and technological) to expand knowledge, conduct research, communicate information, create original works, and investigate complex problems. • Works collaboratively in a group to accomplish a goal by exchanging ideas, synthesizing information, investigating solutions to a problem, sharing workload and completing assigned tasks.

	Audio/Video Communication Pathway	*Intro to Technology (6)*	*Exploring Communcations (8)*	*Intro To Communication (HS sem)*	*Video Communications- Studio (HS sem)*	*Video Comm. - Independent Film (HS sem)*	*Advanced Audio/Video Production (HS sem)*
	Creativity & Innovation						
•	Describe the universal input, process, output, feedback (IPOF) systems model	X					
•	Design a product based on available materials, tools, and equipment.			X			
•	Develop conceptual designs for communications.			X	X	X	
•	Develop preliminary product layouts	X		X	X	X	
•	Develop, test and modify a design idea through experimentation	X		X			X
•	Engage in an activity that requires creativity	X		X	X	X	X
•	Explore a variety of creativity-enhancing techniques.	X	X	X	X	X	X
•	Explore techniques used to refine conceptual design sketches	X	X	X			
•	Identify and describe the historical innovations in the evolution of communications systems and their impact on society	X	X	X			
•	Identify the elements of design	X	X	X	X	X	X
•	Use a variety of creativity enhancing techniques in conceptual design situations	X	X	X	X	X	X
•	Discuss the influence of enterprise on culture, society and the environment			X			

	Audio/Video Communication Pathway	*Intro to Technology (6)*	*Exploring Communcations (8)*	*Intro To Communications (HS sem)*	*Video Communications- Studio (HS sem)*	*Video Comm. - Independent Film (HS sem)*	*Advanced Audio/Video Production (HS sem)*
	Critical Thinking & Problem Solving						
•	Develop several alternative design solutions to the same problem		X	X	X	X	
•	Acquire technology-based information and apply it in classroom and laboratory situations	X	X	X			
•	Apply a general problem solving model including research techniques to produce a project					X	X
•	Apply a general problem solving model to improve upon an existing product				X		X
•	Apply cooperative techniques while engaging in group problem-solving activities		X	X			
•	Apply technological systems to solve a posed problem			X	X	X	X
•	Be familiar with the laws related to copyrights, trademarks, and patents			X	X	X	X
•	Define decision-making research and innovation	X					
•	Describe and apply the processes used to make decisions		X	X	X		
•	Develop a solution for a real-life problem	X	X				
•	Develop criteria for evaluating technology	X			X	X	
•	Develop skills in making wise consumer decisions	X			X		X
•	Differentiate between human problems and needs	X				X	
•	Differentiate between invention and innovation	X					
•	Discuss how technological systems have been used to solve human problems	X					
•	Discuss the differences between problem solving and engineerign design strategies	X					
•	Engage in an activity that requires creativity		X	X	X	X	X
•	Evaluate design ideas to determine the most appropriate			X	X	X	
•	Explain how technology and technological activity has expected and unexpected effects	X					
•	Identify appropriate sources of information for research		X	X			

Audio/Video Communication Pathway		*Intro to Technology (6)*	*Exploring Communcations (8)*	*Intro To Communications (HS sem)*	*Video Communications- Studio (HS sem)*	*Video Comm. - Independent Film (HS sem)*	*Advanced Audio/Video Production (HS sem)*
	Critical Thinking & Problem Solving						
•	Identify research methods, material and techniques.	X		X			
•	Select appropriate technical processes and fabricate a prototype.			X		X	
•	Test a design idea through experimentation.			X			X
•	Use a communication technology to visualize a design idea.			X			X
•	Apply appropriate and effective questioning techniques.			X			

	Audio/Video Communication Pathway	*Intro to Technology (6)*	*Exploring Communcations (8)*	*Intro To Communications (HS sem)*	*Video Communications- Studio (HS sem)*	*Video Comm. - Independent Film (HS sem)*	*Advanced Audio/Video Production (HS sem)*
	Interpersonal Communication & Collaboration						
•	Acquire technology-based information and apply it in classroom and laboratory situations		X	X	X	X	
•	Apply accepted design principals of text and graphics to the layout of printed and electronically published materials			X	X		X
•	Apply techniques of interpersonal communication in activities			X		X	
•	Create prototypes of communication instruments in various media		X	X		X	X
•	Demonstrate the application of communication techniques and strategies in delivering a message electronically		X	X	X	X	
•	Demonstrate the application of communication techniques and strategies in delivering a message in audio form		X	X	X		X
•	Demonstrate the application of communication techniques and strategies in delivering a message in printed form	X		X	X	X	
•	Demonstrate the proper use of the terminology associated with a variety of communication techniques	X	X	X			
•	Design and produce a multimedia presentation		X	X	X	X	
•	Engage in presentation activities	X	X	X	X	X	
•	Explore a variety of technological devices used for communication		X	X		X	X
•	Identify and give examples of integrated technologies	X	X	X			
•	Identify the elements of mass communications		X		X		
•	Operate and apply appropriate electronic communication technology to processing, transmitting, receiving, and organizing information		X	X		X	X

Audio/Video Communication Pathway		*Intro to Technology (6)*	*Exploring Communcations (8)*	*Intro To Communications (HS sem)*	*Video Communications- Studio (HS sem)*	*Video Comm. - Independent Film (HS sem)*	*Advanced Audio/Video Production (HS sem)*
	Interpersonal Communication & Collaboration						
•	Trace the production of a piece of communication media from its inception to use.			X	X	X	
•	Use communications technology to acquire images and information			X	X	X	X
•	Present an idea using multimedia technology		X	X	X	X	
•	Demonstrate skills in selecting and utilizing appropriate communication technology.			X			
•	Evaluate and select appropriate methods of communication for a given problem or situation.			X			
•	Send and access information through a network.			X			

Audio/Video Communication Pathway		*Intro to Technology (6)*	*Exploring Communcations (8)*	*Intro To Communications (HS sem)*	*Video Communications- Studio (HS sem)*	*Video Comm. - Independent Film (HS sem)*	*Advanced Audio/Video Production (HS sem)*
	Products & Accountability						
•	Demonstrate safe and accurate use of tools, production systems and materials to create a finished product			X	X	X	X
•	Describe how a business produces profit		X				
•	Describe how societies are organized to produce and distribute goods and services in a structured manner		X				
•	Explore pre-production and post-production processes			X	X	X	X
•	Produce products from a variety of materials using manual and computer controlled devices				X	X	
•	Define basic manufacturing terminology			X			
•	Use manual and electronic measuring devices accurately			X			

	Audio/Video Communication Pathway	*Intro to Technology (6)*	*Exploring Communcations (8)*	*Intro To Communications (HS sem)*	*Video Communications- Studio (HS sem)*	*Video Comm. - Independent Film (HS sem)*	*Advanced Audio/Video Production (HS sem)*
	Leadership & Responsibility						
•	Apply organizational skills to classroom and lab activities			X	X	X	
•	Assume appropriate roles within a team environment				X	X	
•	Consider personal strengths in determining team assignments			X	X	X	
•	Create a simple flowchart of their daily activities	X					
•	Demonstrate an ability to take responsibility for their own actions		X	X			
•	Demonstrate organizational skills through planning for task completion over several weeks				X	X	X
•	Demonstrate strategies for assuming responsibility in a cooperative activity in class			X			
•	Demonstrate strategies for effectively managing time over a long term assignment				X	X	X
•	Demonstrate strategies for effectively managing time over several class periods			X	X	X	X
•	Demonstrate strategies for effectively managing time		X	X			
•	Develop organizational skills through practical experiences			X			
•	Engage in presentation activities		X	X	X	X	
•	Engage in presentation activity using some visual aid		X	X	X		
•	Explore different roles while working cooperatively and effectively in team situations		X	X			
•	Identify and demonstrate organizational skills	X		X			
•	Present information in an appropriate manner		X	X			

Audio/Video Communication Pathway		*Intro to Technology (6)*	*Exploring Communcations (8)*	*Intro To Communications (HS sem)*	*Video Communications- Studio (HS sem)*	*Video Comm. - Independent Film (HS sem)*	*Advanced Audio/Video Production (HS sem)*
	Career Awareness						
•	Define and demonstrate a personal work ethic			X		X	X
•	Demonstrate awareness of changes in job requirements over time		X	X			
•	Describe how technological development affects careers and occupations	X		X			
•	Develop a learning portfolio of their areas of experience and expertise			X		X	X
•	Exhibit appropriate behavior in both school and work situations		X	X	X	X	X
•	Explore career options	X	X	X			
•	Explore quality control methods						X
•	Explore techniques used to refine conceptual design sketches				X	X	
•	Explore the career possibilities and responsibilities in enterprise	X		X			
•	Identify and categorize careers associated with each of the CT Career Clusters and pathways			X	X	X	X
•	Identify expectations in the workplace		X	X			
•	Identify high school and postsecondary training selections necessary to prepare for a particular career choice			X			X
•	Prepare a preliminary career plan with connections to high school course selections			X			
	Research and identify career opportunities in the areas of transportation, communication, production and technology						X

Intro to Tech (Grade 6)

I. Creativity & Innovation

- Describe the universal input, process, output, feedback (IPOF) systems model
- Develop preliminary product layouts
- Develop, test and modify a design idea through experimentation
- Discuss the influence of enterprise on culture, society and the environment
- Engage in an activity that requires creativity
- Explore a variety of creativity-enhancing techniques
- Identify the elements of design
- Identify the social and economic impacts of automation and computer controlled processing technologies
- Understand the principles of aerodynamics
- Use a variety of creativity enhancing techniques in conceptual design situations

II. Critical Thinking & Problem Solving

- Acquire technology-based information and apply it in classroom and laboratory situations
- Apply appropriate and effective questioning techniques
- Apply technological systems to solve a posed problem
- Define decision-making research and innovation
- Describe and apply the processes used to make decisions
- Develop a solution for a real-life problem
- Develop skills in making wise consumer decisions
- Differentiate between human problems and needs
- Differentiate between invention and innovation
- Discuss how technological systems have been used to solve human problems
- Discuss the differences between problem solving and design strategies
- Engage in an activity that requires creativity
- Explain how technology and technological activity has expected and unexpected effects
- Identify research methods, materials and techniques
- Identify the elements of design
- Prepare and document a design brief
- Develop criteria for evaluating technology

III. Interpersonal Communication & Collaboration

- Apply techniques of interpersonal and mass communication through activities such as sketching, computer- aided drafting (CAD), photography and video
- Create prototypes of communication instruments in various media
- Demonstrate the proper use of the terminology associated with a variety of communication techniques

- Engage in multimedia activities
- Evaluate and select appropriate methods of communication for a given problem or situation
- Explore and identify the personal, societal, economic and environmental effects of technological systems

Intro to Tech (Grade 6)

III. Interpersonal Communication & Collaboration (continued)

- Identify and describe how individual technological innovations may be combined to create new technologies
- Use communications technology to acquire images and information
- Present an idea using multimedia technology
- Demonstrate the application of communication techniques and strategies in delivering a message in printed form
- Identify and give examples of integrated technologies

IV. Products & Accountability

- Apply the method of line production in the "manufacture" of a simple product
- Define basic manufacturing terminology
- Demonstrate the appropriate selection, use and safe operation of basic hand and power tools
- Describe how products are manufactured
- Describe how products are manufactured using the methods of single craftsman, line and mass, and automated robotics manufacturing
- Describe how societies are organized to produce and distribute goods and services in a structured manner
- Use manual and electronic measuring devices accurately
- Produce a product using a simple production sequence: layout, shaping, smoothing, assembly and finishing techniques

V. Leadership & Responsibility

- Apply organizational skills to classroom and lab activities
- Assume appropriate roles within a team environment
- Create a simple flowchart of their daily activities
- Demonstrate an ability to take responsibility for their own actions
- Demonstrate strategies for effectively managing time
- Identify and demonstrate organizational skills

VI. Career Awareness

- Define and demonstrate a personal work ethic
- Describe free enterprise
- Describe how technological development affects careers and occupations
- Explore career options
- Explore market research and its relationship to satisfying consumer needs
- Identify and categorize careers associated with each of the CT Career Clusters and pathways
- Identify expectations in the workplace
- Identify high school and postsecondary training selections necessary to prepare for a particular career choice
- Participate in a variety of roles within an organizational structure.
- Conduct research related to careers

Exploring Communications (Grade 8)

I. Creativity & Innovation

- Explore a variety of creativity-enhancing techniques
- Explore techniques used to refine conceptual design sketches
- Identify and describe the historical innovations in the evolution of communications systems and their impact on society
- Identify the elements of design
- Use a variety of creativity enhancing techniques in conceptual design situations
- Identify the social and economic impacts of automation and computer controlled processing technologies

II. Critical Thinking & Problem Solving

- Develop several alternatives design solutions to the same problem
- Acquire technology-based information and apply it in classroom and laboratory situations
- Apply cooperative techniques while engaging in group problem-solving activities
- Describe and apply the processes used to make decisions
- Develop a solution for a real-life problem
- Engage in an activity that requires creativity
- Identify appropriate sources of information for research

III. Interpersonal Communication & Collaboration

- Acquire technology-based information and apply it in classroom and laboratory situations
- Create prototypes of communication instruments in various media
- Demonstrate the application of communication techniques and strategies in delivering a message electronically
- Demonstrate the application of communication techniques and strategies in delivering a message in audio form
- Demonstrate the proper use of the terminology associated with a variety of communication techniques
- Design and produce a multimedia presentation
- engage in presentation activities
- Explore a variety of technological devices used for communication
- identify and give examples of integrated technologies
- identify the elements of mass communications
- Operate and apply appropriate electronic communication technology to processing, transmitting, receiving, and organizing information
- Present an idea using multimedia technology

IV. Products & Accountability

- Describe how a business produces profit
- Describe how societies are organized to produce and distribute goods and services in a structured manner

Exploring Communications (Grade 8)

V. Leadership & Responsibility

- Demonstrate an ability to take responsibility for their own actions
- Demonstrate strategies for effectively managing time
- Engage in presentation activities
- Engage in presentation activity using some visual aid
- Explore different roles while working cooperatively and effectively in team situations
- Present information in an appropriate manner

VI. Career Awareness

Demonstrate awareness of changes in job requirements over time

- Exhibit appropriate behavior in both school and work situations
- Explore career options
- Identify expectations in the workplace

Intro to Communications (HS Semester)

I. Creativity & Innovation

- Design a product based on available materials, tools, and equipment
- Develop conceptual designs for communications
- Develop preliminary product layouts
- Develop, test and modify a design idea through experimentation
- Discuss the influence of enterprise on culture, society and the environment
- Engage in an activity that requires creativity
- Explore a variety of creativity-enhancing techniques
- Explore techniques used to refine conceptual design sketches
- Identify and describe the historical innovations in the evolution of communications systems and their impact on society
- Identify the elements of design
- Use a variety of creativity enhancing techniques in conceptual design situations

II. Critical Thinking & Problem Solving

- Develop several alternatives design solutions to the same problem
- Acquire technology-based information and apply it in classroom and laboratory situations
- Apply cooperative techniques while engaging in group problem-solving activities
- Apply technological systems to solve a posed problem
- Be familiar with the laws related to copyrights, trademarks, and patents
- Describe and apply the processes used to make decisions
- Engage in an activity that requires creativity
- Evaluate design ideas to determine the most appropriate
- Identify appropriate sources of information for research
- Identify research methods, material and techniques
- Select appropriate technical processes and fabricate a prototype
- Test a design idea through experimentation
- Use a communication technology to visualize a design idea
- Apply appropriate and effective questioning techniques

III. Interpersonal Communication & Collaboration

- Acquire technology-based information and apply it in classroom and laboratory situations
- Apply accepted design principals of text and graphics to the layout of printed and electronically published materials
- Apply techniques of interpersonal communication in activities
- Create prototypes of communication instruments in various media
- Demonstrate the application of communication techniques and strategies in delivering a message electronically
- Demonstrate the application of communication techniques and strategies in delivering a message in audio form
- Demonstrate the application of communication techniques and strategies in delivering a message in printed form

Intro to Communications (HS Semester)

III. Interpersonal Communication & Collaboration (continued)

- Demonstrate the proper use of the terminology associated with a variety of communication techniques
- Design and produce a multimedia presentation
- Engage in presentation activities
- Explore a variety of technological devices used for communication
- Identify and give examples of integrated technologies
- Operate and apply appropriate electronic communication technology to processing, transmitting, receiving, and organizing information
- Trace the production of a piece of communication media from its inception to use
- Use communications technology to acquire images and information
- Present an idea using multimedia technology
- Demonstrate skills in selecting and utilizing appropriate communication technology
- Evaluate and select appropriate methods of communication for a given problem or situation
- Send and access information through a network

IV. Products & Accountability

- Demonstrate safe and accurate use of tools, production systems and materials to create a finished product
- Explore pre-production and post-production processes
- Use manual and electronic measuring devices accurately

V. Leadership & Responsibility

- Apply organizational skills to classroom and lab activities
- Consider personal strengths in determining team assignments
- Demonstrate an ability to take responsibility for their own actions
- Demonstrate strategies for assuming responsibility in a cooperative activity in class
- Demonstrate strategies for effectively managing time over several class periods
- Demonstrate strategies for effectively managing time
- Develop organizational skills through practical experiences
- Engage in presentation activities
- Engage in presentation activity using some visual aid
- Explore different roles while working cooperatively and effectively in team situations
- Identify and demonstrate organizational skills
- Present information in an appropriate manner

VI. Career Awareness

- Define and demonstrate a personal work ethic.
- Demonstrate awareness of changes in job requirements over time.
- Describe how technological development affects careers and occupations.
- Develop a learning portfolio of their areas of experience and expertise.
- Exhibit appropriate behavior in both school and work situations.

Intro to Communications (HS Semester)

VI. Career Awareness (continued)

- Explore career options
- Explore the career possibilities and responsibilities in enterprise
- Identify and categorize careers associated with each of the CT Careeer Clusters
- Identify expectations in the workplace
- Identify high school and postsecondary training selections necessary to prepare for a particular career choice
- Prepare a preliminary career plan with connections to high school course selections

Video Communications - Studio (HS Semester)

I. Creativity & Innovation

- Develop conceptual designs for communications
- Develop preliminary product layouts
- Engage in an activity that requires creativity
- Explore a variety of creativity-enhancing techniques
- Identify the elements of design
- Use a variety of creativity enhancing techniques in conceptual design situations

II. Critical Thinking & Problem Solving

- Develop several alternative design solutions to the same problem
- Apply a general problem solving model to improve upon an existing product
- Apply technological systems to solve a posed problem
- Be familiar with the laws related to copyrights, trademarks, and patents
- Describe and apply the processes used to make decisions
- Develop criteria for evaluating technology
- Develop skills in making wise consumer decisions
- Engage in an activity that requires creativity
- Evaluate design ideas to determine the most appropriate

III. Interpersonal Communication & Collaboration

- Acquire technology-based information and apply it in classroom and laboratory situations
- Apply accepted design principals of text and graphics to the layout of printed and electronically published materials
- Demonstrate the application of communication techniques and strategies in delivering a message electronically
- Demonstrate the application of communication techniques and strategies in delivering a message in audio form
- Demonstrate the application of communication techniques and strategies in delivering a message in printed form
- Design and produce a multimedia presentation
- engage in presentation activities
- identify the elements of mass communications
- Trace the production of a piece of communication media from its inception to use
- Use communications technology to acquire images and information.
- Present an idea using multimedia technology

IV. Products & Accountability

- Demonstrate safe and accurate use of tools, production systems and materials to create a finished product
- Explore pre-production and post-production processes
- Produce products from a variety of materials using manual and computer controlled devices

Video Communications - Studio (HS Semester)

V. Leadership & Responsibility

- Apply organizational skills to classroom and lab activities
- Assume appropriate roles within a team environment
- Consider personal strengths in determining team assignments
- Demonstrate organizational skills through planning for task completion over several weeks
- Demonstrate strategies for effectively managing time over a long term assignment
- Demonstrate strategies for effectively managing time over several class periods
- Engage in presentation activities
- Engage in presentation activity using some visual aid

VI. Career Awareness

- Exhibit appropriate behavior in both school and work situations
- Explore techniques used to refine conceptual design sketches
- Identify and categorize careers associated with each of the CT Career Clusters and pathways

Video Communications - Independent Film (HS Semester)

I. Creativity & Innovation

- Develop conceptual designs for communications
- Develop preliminary product layouts
- Engage in an activity that requires creativity
- Explore a variety of creativity-enhancing techniques
- Identify the elements of design
- Use a variety of creativity enhancing techniques in conceptual design situations

II. Critical Thinking & Problem Solving

- Develop several alternative design solutions to the same problem
- Apply a general problem solving model including research techniques to produce a project
- Apply technological systems to solve a posed problem
- Be familiar with the laws related to copyrights, trademarks, and patents
- Develop criteria for evaluating technology
- Differentiate between human problems and needs
- Engage in an activity that requires creativity
- Evaluate design ideas to determine the most appropriate
- Select appropriate technical processes and fabricate a prototype

III. Interpersonal Communication & Collaboration

- Acquire technology-based information and apply it in classroom and laboratory situations
- Apply techniques of interpersonal communication in activities
- Create prototypes of communication instruments in various media
- Demonstrate the application of communication techniques and strategies in delivering a message electronically
- Demonstrate the application of communication techniques and strategies in delivering a message in printed form
- Design and produce a multimedia presentation
- Engage in presentation activities
- Explore a variety of technological devices used for communication
- Operate and apply appropriate electronic communication technology to processing, transmitting, receiving, and organizing information
- Trace the production of a piece of communication media from its inception to use
- Use communications technology to acquire images and information
- Present an idea using multimedia technology

IV. Products & Accountability

- Demonstrate safe and accurate use of tools, production systems and materials to create a finished product
- Explore pre-production and post-production processes
- Produce products from a variety of materials using manual and computer controlled devices

Video Communications - Independent Film (HS Semester)

V. Leadership & Responsibility

- Apply organizational skills to classroom and lab activities
- Assume appropriate roles within a team environment
- Consider personal strengths in determining team assignments
- Demonstrate organizational skills through planning for task completion over several weeks
- Demonstrate strategies for effectively managing time over a long term assignment
- Demonstrate strategies for effectively managing time over several class periods
- Engage in presentation activities.

VI. Career Awareness

- Define and demonstrate a personal work ethic
- Develop a learning portfolio of their areas of experience and expertise
- Exhibit appropriate behavior in both school and work situations
- Explore techniques used to refine conceptual design sketches
- Identify and categorize careers associated with each of the CT Career Clusters and pathways

Advanced Audio/Video Production (HS Semester)

I. Creativity & Innovation

- Develop, test and modify a design idea through experimentation
- Engage in an activity that requires creativity
- Explore a variety of creativity-enhancing techniques
- Identify the elements of design
- Use a variety of creativity enhancing techniques in conceptual design situations

II. Critical Thinking & Problem Solving

- Apply a general problem solving model including research techniques to produce a project
- Apply a general problem solving model to improve upon an existing product
- Apply technological systems to solve a posed problem
- Be familiar with the laws related to copyrights, trademarks, and patents
- Develop skills in making wise consumer decisions
- Engage in an activity that requires creativity
- Test a design idea through experimentation
- Use a communication technology to visualize a design idea

III. Interpersonal Communication & Collaboration

- Apply accepted design principals of text and graphics to the layout of printed and electronically published materials
- Create prototypes of communication instruments in various media
- Demonstrate the application of communication techniques and strategies in delivering a message in audio form
- Explore a variety of technological devices used for communication
- Operate and apply appropriate electronic communication technology to processing, transmitting, receiving, and organizing information
- Use communications technology to acquire images and information

IV. Products & Accountability

- Demonstrate safe and accurate use of tools, production systems and materials to create a finished product
- Explore pre-production and post-production processes

V. Leadership & Responsibility

- Demonstrate organizational skills through planning for task completion over several weeks
- Demonstrate strategies for effectively managing time over a long term assignment
- Demonstrate strategies for effectively managing time over several class periods

Advanced Audio/Video Production (HS Semester)

VI. Career Awareness

- Define and demonstrate a personal work ethic.
- Develop a learning portfolio of their areas of experience and expertise.
- Exhibit appropriate behavior in both school and work situations.
- Explore quality control methods.
- Identify and categorize careers associated with each of the CT Career Clusters and pathways.
- Identify high school and postsecondary training selections necessary to prepare for a particular career choice.
- Research and identify career opportunities in the areas of transportation, communication, production and technology.

Technology Education

STEM Engineering Construction Pathway

Intro to Technology (6)
Manufacturing (6)
Exploring Material Processing (6)
Exploring Construction (7)
Innovation & Invention (8)
Architectural Design (8)
Introduction to Engineering (sem-HS)
Creative Woodworking (sem-HS)
Marine Construction (sem-HS)
Tech Math (sem-HS)
Design Engineering (year-HS)
STEM Physics (year-HS)

Course	Key Projects/Applications	Framework Emphasis	Foundation Skills and Competencies
Intro to Technology (6)	• Picture Collage • Logo Design • ID Design • Car Builder • Wind Tunnel • Bridge Builder	• Creativity and Innovation • Critical Thinking and Problem Solving • Interpersonal Communication and Collaboration • Productivity and Accountability • Career Awareness	• Uses appropriate forms of expressions and conventions of Standard English to communicate and develop thoughts, share ideas, influence and persuade, and create and entertain • Applies computational skills, number sense and mathematical techniques to solve problems and judge reasonableness of results • Accesses a wide range of resources (print, non-print, and technological) to expand knowledge, conduct research, communicate information, create original works, and investigate complex problems • Designs and applies techniques for investigating real-world issues and problems including; posing questions, hypothesizing, observing, collecting and analyzing data, and communicating findings
Intro to Manufacturing (6)	• The Factory Simulation • Assembly Line-Paper Clip • Small Scoop • Scratch Pad Holder	• Creativity and Innovation • Critical Thinking and Problem Solving • Productivity and Accountability • Career Awareness	• Applies computational skills, number sense and mathematical techniques to solve problems and judge reasonableness of results • Designs and applies techniques for investigating real-world issues and problems including; posing questions, hypothesizing, observing, collecting and analyzing data, and communicating findings • Works collaboratively in a group to accomplish a goal by exchanging ideas, synthesizing information, investigating solutions to a problem, sharing workload and completing assigned tasks
Exploring Material Processing (6)	• Clothing Rack • Clam Basket • Golden Clip • Key Organizer • Phone Pad • Grocery List	• Creativity and Innovation • Critical Thinking and Problem Solving	• Applies computational skills, number sense and mathematical techniques to solve problems and judge reasonableness of results

Course	Key Projects/Applications	Framework Emphasis	Foundation Skills and Competencies
Exploring Construction (7)	• Crane • Truss Beam • Tower Structure • Epicenter • Create a Construction Company • Roller Coaster (STEM)	• Creativity and Innovation • Critical Thinking and Problem Solving • Leadership and Responsibility • Career Awareness	• Listens and views verbal and nonverbal presentations in order to analyze, clarify, follow directions, and ask and answer questions • Delivers oral and visual presentations using standard conventions, forms of expression, coherent sequence of thoughts, suitable vocabulary, and tools appropriate for the purpose and audience • Accesses a wide range of resources (print, non-print, and technological) to expand knowledge, conduct research, communicate information, create original works, and investigate complex problems • Designs and applies techniques for investigating real-world issues and problems including; posing questions, hypothesizing, observing, collecting and analyzing data, and communicating findings
Innovation & Invention (8)	• Manufacturing Research and Development o Concept Design o Market Survey o Prototype Design o Flow of Materials Design o Mass Production/ Assembly Line o Presentation o Pack and Sell Process & Options • Portfolio Submission	• Creativity and Innovation • Critical Thinking and Problem Solving • Interpersonal Communication and Collaboration • Productivity and Accountability • Leadership and Responsibility • Career Awareness	• Listens and views verbal and nonverbal presentations in order to analyze, clarify, follow directions, and ask and answer questions • Applies computational skills, number sense and mathematical techniques to solve problems and judge reasonableness of results • Delivers oral and visual presentations using standard conventions, forms of expression, coherent sequence of thoughts, suitable vocabulary, and tools appropriate for the purpose and audience • Collects, organizes, and presents data using charts, tables, and graphs to interpret findings, defend or refute predictions, and draw conclusions • Investigates and evaluates information and arguments from various sources and points of view applying prior knowledge, and inductive and deductive reasoning to establish a personal stance and defend a rationale

Course	Key Projects/Applications	Framework Emphasis	Foundation Skills and Competencies
Innovation & Invention (8) (continued)			• Accesses a wide range of resources (print, non-print, and technological) to expand knowledge, conduct research, communicate information, create original works, and investigate complex problems • Designs and applies techniques for investigating real-world issues and problems including; posing questions, hypothesizing, observing, collecting and analyzing data, and communicating findings • Works collaboratively in a group to accomplish a goal by exchanging ideas, synthesizing information, investigating solutions to a problem, sharing workload and completing assigned tasks
Architectural Design (8)	• House Design-3D Drawing • Architectural Firm ○ Architect ○ Interior Design ○ Contractor ○ Public Relation Person • Architectural EXPO	• Creativity and Innovation • Critical Thinking and Problem Solving • Interpersonal Communication and Collaboration • Productivity and Accountability • Leadership and Responsibility • Career Awareness	• Reads a variety of literary, informational, and persuasive texts with understanding, and is able to analyze, interpret, evaluate text, and reads for enjoyment • Applies understanding of a writing process (drafting, revising, editing, and rewriting) to improve writing • Applies computational skills, number sense and mathematical techniques to solve problems and judge reasonableness of results • Investigates and evaluates information and arguments from various sources and points of view applying prior knowledge, and inductive and deductive reasoning to establish a personal stance and defend a rationale • Designs and applies techniques for investigating real-world issues and problems including; posing questions, hypothesizing, observing, collecting and analyzing data, and communicating findings • Works collaboratively in a group to accomplish a goal by exchanging ideas, synthesizing information, investigating solutions to a problem, sharing workload and completing assigned tasks

Course	Key Projects/Applications	Framework Emphasis	Foundation Skills and Competencies
Intro to Engineering (HS)	• Inventor or Technology Research • Transportation Systems ○ Automotive & Robotics • Manufacturing Design & Build • Construction Modeling	• Critical Thinking and Problem Solving • Interpersonal Communication and Collaboration • Productivity and Accountability • Leadership and Responsibility • Career Awareness	• Listens and views verbal and nonverbal presentations in order to analyze, clarify, follow directions, and ask and answer questions • Applies computational skills, number sense and mathematical techniques to solve problems and judge reasonableness of results • Delivers oral and visual presentations using standard conventions, forms of expression, coherent sequence of thoughts, suitable vocabulary, and tools appropriate for the purpose and audience • Collects, organizes, and presents data using charts, tables, and graphs to interpret findings, defend or refute predictions, and draw conclusions • Investigates and evaluates information and arguments from various sources and points of view applying prior knowledge, and inductive and deductive reasoning to establish a personal stance and defend a rationale • Accesses a wide range of resources (print, non-print, and technological) to expand knowledge, conduct research, communicate information, create original works, and investigate complex problems • Designs and applies techniques for investigating real-world issues and problems including; posing questions, hypothesizing, observing, collecting and analyzing data, and communicating findings • Works collaboratively in a group to accomplish a goal by exchanging ideas, synthesizing information, investigating solutions to a problem, sharing workload and completing assigned tasks

Course	Key Projects/Applications	Framework Emphasis	Foundation Skills and Competencies
Marine Construction (HS)	• Introduction/Safety • Planning • Hull Design • Row Boat Construction • Hovercraft Construction	• Critical Thinking and Problem Solving • Interpersonal Communication and Collaboration • Productivity and Accountability • Leadership and Responsibility • Career Awareness	• Listens and views verbal and nonverbal presentations in order to analyze, clarify, follow directions, and ask and answer questions • Applies computational skills, number sense and mathematical techniques to solve problems and judge reasonableness of results • Accesses a wide range of resources (print, non-print, and technological) to expand knowledge, conduct research, communicate information, create original works, and investigate complex problems • Designs and applies techniques for investigating real-world issues and problems including; posing questions, hypothesizing, observing, collecting and analyzing data, and communicating findings • Works collaboratively in a group to accomplish a goal by exchanging ideas, synthesizing information, investigating solutions to a problem, sharing workload and completing assigned tasks
Creative Woodworking (HS)	• Colonial Shelf (individual project) • "Toys for Tots" production run	• Critical Thinking and Problem Solving • Interpersonal Communication and Collaboration • Productivity and Accountability • Leadership and Responsibility • Career Awareness	• Listens and views verbal and nonverbal presentations in order to analyze, clarify, follow directions, and ask and answer questions • Applies computational skills, number sense and mathematical techniques to solve problems and judge reasonableness of results • Accesses a wide range of resources (print, non-print, and technological) to expand knowledge, conduct research, communicate information, create original works, and investigate complex problems • Designs and applies techniques for investigating real-world issues and problems including; posing questions, hypothesizing, observing, collecting and analyzing data, and communicating findings • Works collaboratively in a group to accomplish a goal by exchanging ideas, synthesizing information, investigating solutions to a problem, sharing workload and completing assigned tasks

Course	Key Projects/Applications	Framework Emphasis	Foundation Skills and Competencies
Design Engineering (HS)	• Transportation Systems Automotive & VEX Robotics Suspension, Steering and braking Power transmission • Alternative energy • Design and Build • Automotive Computer Scan Tool Diagnostics and Repair/Rebuilding • Mitchell On Demand automotive database research and repair/rebuilding procedures • The Morgan School Annual Car Show and Food Drive	• Creativity and Innovation • Critical Thinking &Problem Solving	• Listens and views verbal and nonverbal presentations in order to analyze, clarify, follow directions, and ask and answer questions • Accesses a wide range of resources (print, non-print, and technological) to expand knowledge, conduct research, communicate information, create original works, and investigate complex problems • Designs and applies techniques for investigating real world issues and problems, including: posing questions, hypothesizing, observing, collecting and analyzing data, and communicating findings • Works collaboratively in a group to accomplish a goal by exchanging ideas, synthesizing information, investigating solutions to a problem, sharing workload and completing assigned tasks
STEM Physics (HS)	• Typical Projects: • Energy Transformation (Motors & Generators) • VEX Robotics • Automotive Computer Scan Tool Diagnostics • Hydropower • Solar Powered projects • Aerodynamics, Wind Tunnel • Design & Build model hydraulic jacks or braking systems • Soda Cooler – Thermodynamic Techniques for Fastest Chilling of a can of soda • Build electrical circuits	• Creativity and Innovation • Critical Thinking &Problem Solving	• Applies computational skills, number sense and mathematical techniques to solve problems and judge reasonableness of results • Designs and applies techniques for investigating real world issues and problems, including: posing questions, hypothesizing, observing, collecting and analyzing data, and communicating findings • Works collaboratively in a group to accomplish a goal by exchanging ideas, synthesizing information, investigating solutions to a problem, sharing workload and completing assigned tasks

STEM - Engineering Construction Pathway		*Intro to Tech (6)*	*Manufacturing (6)*	*Exploring Material Processing (6)*	*Exploring Construction (7)*	*Innovation & Invention (8)*	*Architecturural Design (8)*	*Introduction to Engineering (sem-HS)*	*Creative Woodworking (sem-HS)*	*Marine Construction (sem-HS)*	*Tech Math (sem-HS)*	*Design Engineering (year-HS)*	*STEM Physics (year-HS)*
	Creativity & Innovation												
•	Analyze a design, through testing of model shelters and/or other structures and altering the design for improved performance				X						X		
•	Apply a variety of manufacturing techniques and processes to create a usable product		X	X		X			X				
•	Complete a cost estimation					X					X	X	X
•	Create a simple flow and deisgn chart for the manufacturing of a product				X	X			X	X	X	X	
•	Describe the universal input, process, output, feedback (IPOF) systems model	X	X		X	X		X					
•	Design a product based on available materials, tools, and equipment					X			X			X	X
•	Design, fabricate, test, and evaluate a marine transportation system									X			
•	Develop preliminary product layouts	X	X	X	X	X		X	X	X	X	X	
•	Develop, test and modify a design idea through experimentation	X	X		X	X			X			X	X
•	Discuss the influence of enterprise on culture, society and the environment	X	X	X	X	X	X	X	X	X	X	X	X
•	Engage in an activity that requires creativity	X	X	X	X	X	X		X			X	X
•	Explain the role of creativity in the engineering design process		X		X				X			X	X
•	Explore a variety of creativity-enhancing techniques	X			X	X			X			X	X
•	Explore techniques used to refine conceptual design sketches		X		X	X			X			X	X
•	Identify and describe the tools, materials and methods used in manufacturing products		X	X		X			X	X	X		
•	Identify and evaluate alternative materials							X	X	X	X	X	X
•	Identify the elements of design	X	X		X	X	X		X	X	X	X	X
•	Identify the social and economic impacts of automation and computer controlled processing technologies	X	X	X	X	X		X	X	X	X	X	X
•	Trace the historical development of at least one technology, identifying its effects and hypothesizing about its future					X		X				X	X
•	Trace the historical evolution of manufacturing					X						X	
•	Trace the historical evolution of the construction industry		X	X	X			X					
•	Understand the principles of aerodynamics	X				X						X	X
•	Use a variety of creativity enhancing techniques in conceptual design situations	X											

	STEM - Engineering Construction Pathway	*Intro to Tech (6)*	*Manufacturing (6)*	*Exploring Material Processing (6)*	*Exploring Construction (7)*	*Innovation & Invention (8)*	*Architecturural Design (8)*	*Introduction to Engineering (sem-HS)*	*Creative Woodworking (sem-HS)*	*Marine Construction (sem-HS)*	*Tech Math (sem-HS)*	*Design Engineering (year-HS)*	*STEM Physics (year-HS)*
	Critical Thinking & Problem Solving												
•	Acquire technology-based information and apply it in classroom and laboratory situations	X	X		X	X		X	X	X	X		
•	Analyze a product for its ability to satisfy consumer demands		X			X		X	X	X	X		
•	Apply a general problem solving model including research techniques to invent a product					X						X	X
•	Apply a general problem solving model to improve upon an existing product							X	X	X	X	X	X
•	Apply appropriate and effective questioning techniques	X				X		X	X	X	X	X	X
•	Apply cooperative techniques while engaging in group problem-solving activities		X		X	X		X	X	X	X	X	X
•	Apply descriptive statistics of average, percentage correlation, and graphing to design outcomes					X					X	X	X
•	Apply technological systems to solve a posed problem	X	X	X	X	X	X	X	X	X	X	X	X
•	Be familiar with the laws related to copyrights, trademarks, and patents					X		X				X	X
•	Conduct an applied research project											X	X
•	Define decision-making research and innovation	X	X			X							
•	Describe and apply the processes used to make decisions	X						X	X	X	X	X	X
•	Describe the evolution of technological enterprise		X		X	X							
•	Develop a solution for a real-life problem	X	X		X	X	X	X	X	X	X	X	X
•	Identify and describe the tools, materials and methods used in manufacturing products	X	X		X	X		X					
•	Differentiate between human problems and needs	X	X		X	X							
•	Differentiate between invention and innovation	X				X		X				X	X
•	Discuss how technological systems have been used to solve human problems	X	X			X		X				X	X
•	Discuss the differences between problem solving and design strategies	X	X									X	X
•	Engage in an activity that requires creativity	X	X	X	X	X	X	X	X	X	X	X	X
•	Evaluate design ideas to determine the most appropriate					X	X		X	X	X	X	X
•	Explain how technology and technological activity has expected and unexpected effects	X	X			X			X	X	X	X	X
•	Identify research methods, materials and techniques	X	X		X	X		X	X	X	X	X	X
•	Identify the characteristics of sub- and superstructures				X								

STEM - Engineering Construction Pathway		*Intro to Tech (6)*	*Manufacturing (6)*	*Exploring Material Processing (6)*	*Exploring Construction (7)*	*Innovation & Invention (8)*	*Architecturural Design (8)*	*Introduction to Engineering (sem-HS)*	*Creative Woodworking (sem-HS)*	*Marine Construction (sem-HS)*	*Tech Math (sem-HS)*	*Design Engineering (year-HS)*	*STEM Physics (year-HS)*
	Critical Thinking & Problem Solving												
•	Identify the elements of design	X	X		X	X	X	X	X	X	X	X	X
•	Prepare and document a design brief	X	X			X		X	X	X	X	X	X
•	Select appropriate technical processes and fabricate a prototype				X			X	X			X	X
•	Develop test and modify a design through experimentation				X			X	X	X	X	X	X
•	Develop criteria for evaluating technology	X											

STEM - Engineering Construction Pathway		*Intro to Tech (6)*	*Manufacturing (6)*	*Exploring Material Processing (6)*	*Exploring Construction (7)*	*Innovation & Invention (8)*	*Architecturural Design (8)*	*Introduction to Engineering (sem-HS)*	*Creative Woodworking (sem-HS)*	*Marine Construction (sem-HS)*	*Tech Math (sem-HS)*	*Design Engineering (year-HS)*	*STEM Physics (year-HS)*
	Interpersonal Communication & Collaboration												
•	Apply techniques of interpersonal and mass communication through activities such as sketching, computer- aided drafting (CAD), photography and video	X				X	X	X	X	X	X	X	X
•	Create prototypes of communication instruments in various media	X				X							
•	Demonstrate the proper use of the terminology associated with a variety of communication techniques	X	X			X		X	X	X	X	X	X
•	Engage in multimedia presentation activities	X	X		X	X		X	X	X	X	X	X
•	Evaluate and select appropriate methods of communication for a given problem or situation	X	X		X	X		X	X	X	X	X	X
•	Explore and identify the personal, societal, economic and environmental effects of technological systems	X	X		X	X		X	X	X	X	X	X
•	Identify and describe how individual technological innovations may be combined to create new technologies	X	X			X		X	X	X	X	X	X
•	Use communications technology to acquire images and information	X				X		X				X	X
•	Present an idea using multimedia technology	X	X			X	X	X	X	X	X	X	X
•	Demonstrate the application of communication techniques and strategies in delivering a message in printed form	X											
•	Identify and give examples of integrated technologies	X											

	STEM - Engineering Construction Pathway	*Intro to Tech (6)*	*Manufacturing (6)*	*Exploring Material Processing (6)*	*Exploring Construction (7)*	*Innovation & Invention (8)*	*Architecturural Design (8)*	*Introduction to Engineering (sem-HS)*	*Creative Woodworking (sem-HS)*	*Marine Construction (sem-HS)*	*Tech Math (sem-HS)*	*Design Engineering (year-HS)*	*STEM Physics (year-HS)*
	Products & Accountability												
•	Apply the method of line production in the "manufacture" of a simple product	X	X			X			X				
•	Classify raw materials according to their physical and mechanical properties							X	X	X	X	X	X
•	Define basic manufacturing terminology	X	X	X	X	X		X	X	X	X	X	X
•	Demonstrate a working knowledged of the layout, shaping, smoothing, assembly and finishing techniques used to produce a product		X	X	X	X			X	X	X	X	X
•	Demonstrate the appropriate selection, use and safe operation of basic hand and power tools	X	X	X	X			X	X	X	X	X	X
•	Describe how a business produces profit				X	X		X	X	X	X	X	X
•	Describe how products are manufactured	X	X		X	X		X	X	X	X	X	X
•	Describe how products are manufactured using the methods of single craftsman, line and mass, and automated robotics manufacturing	X	X	X		X		X	X			X	X
•	Describe how societies are organized to produce and distribute goods and services in a structured manner	X	X			X		X					
•	Use manual and electronic measuring devices accurately	X			X	X		X	X	X	X	X	X
•	Define and use the quality control measures of pre -inventory inspection, statistical process control, and total quality management					X			X			X	X
•	Produce a product using a simple production sequence: layout, shaping, smoothing, assembly and finishing techniques	X	X			X				X			
•	Produce simple products from a variety of materials, using manual and computer-controlled devices		X						X				

STEM - Engineering Construction Pathway		*Intro to Tech (6)*	*Manufacturing (6)*	*Exploring Material Processing (6)*	*Exploring Construction (7)*	*Innovation & Invention (8)*	*Architecturural Design (8)*	*Introduction to Engineering (sem-HS)*	*Creative Woodworking (sem-HS)*	*Marine Construction (sem-HS)*	*Tech Math (sem-HS)*	*Design Engineering (year-HS)*	*STEM Physics (year-HS)*
	Leadership & Responsibility												
•	Analyze a product for its ability to satisfy consumer demands		X			X			X			X	
•	Apply organizational skills to classroom and lab activities	X	X			X		X					
•	Assume appropriate roles within a team environment	X	X			X		X					
•	Consider personal strenghts in determing team assignments					X		X					
•	Create a simple flowchart of their daily activities	X	X		X	X			X	X	X		
•	Demonstrate an ability to take responsibility for their own actions	X	X	X	X	X	X	X	X	X	X	X	X
•	Demonstrate strategies for effectively managing time	X	X	X	X	X	X	X	X	X	X	X	X
•	Engage in presentation activities				X	X	X	X	X	X	X	X	X
•	Explore different roles while working cooperatively and effectively in team situations		X		X	X		X					
•	Identify and demonstrate organizational skills	X	X		X	X		X					

STEM - Engineering Construction Pathway		*Intro to Tech (6)*	*Manufacturing (6)*	*Exploring Material Processing (6)*	*Exploring Construction (7)*	*Innovation & Invention (8)*	*Architecturural Design (8)*	*Introduction to Engineering (sem-HS)*	*Creative Woodworking (sem-HS)*	*Marine Construction (sem-HS)*	*Tech Math (sem-HS)*	*Design Engineering (year-HS)*	*STEM Physics (year-HS)*
	Career Awareness												
•	Calculate the cost of producing a manufactured product and determine a retail price					X		X	X				
•	Define and demonstrate a personal work ethic	X	X	X	X	X	X	X	X	X	X	X	X
•	Define the terms single ownership, company, corporation and partnership					X		X	X	X	X	X	
•	Describe free enterprise	X			X	X		X					
•	Describe how technological development affects careers and occupations	X	X		X	X		X	X	X	X	X	X
•	Design a simulated enterprise and participate in a variety of roles within the organization structure					X			X				
•	Develop a learning portfolio of their areas of experience and expertise					X		X	X	X	X	X	X
•	Develop a marketing plan and successfully distribute a product					X			X		X		
•	Develop skills in making wise consumer decisions		X			X		X			X	X	
•	Develop, distribute and evaluate a customer survey					X						X	
•	Discuss the influence of enterprise on culture, society and the environment					X		X	X	X	X	X	X
•	Explore career options	X	X	X	X	X	X	X	X	X	X	X	X
•	Explore market research and its relationship to satisfying consumer needs	X				X		X					
•	Explore quality control methods		X			X			X				
•	Identify and describe the tools, materials and methods used in manufacturing products	X	X	X	X	X	X	X	X	X	X	X	X
•	Identify expectations in the workplace	X	X	X	X	X	X	X	X	X	X	X	X
•	Identify high school and postsecondary training selections necessary to prepare for a particular career choice	X	X	X	X	X	X	X	X	X	X	X	X
•	Participate in a variety of roles within an organizational structure	X	X	X	X	X	X	X	X	X	X	X	X
•	Conduct research related to careers	X	X	X	X	X	X	X	X	X	X	X	X

Intro to Tech (Grade 6)

I. Creativity & Innovation

- Describe the universal input, process, output, feedback (IPOF) systems model
- Develop preliminary product layouts
- Develop, test and modify a design idea through experimentation
- Discuss the influence of enterprise on culture, society and the environment.
- Engage in an activity that requires creativity
- Explore a variety of creativity-enhancing techniques.
- Identify the elements of design.
- Identify the social and economic impacts of automation and computer controlled processing technologies
- Understand the principles of aerodynamics
- Use a variety of creativity enhancing techniques in conceptual design situations.

II. Critical Thinking & Problem Solving

- Acquire technology-based information and apply it in classroom and laboratory situations.
- Apply appropriate and effective questioning techniques.
- Apply technological systems to solve a posed problem.
- Define decision-making research and innovation.
- Describe and apply the processes used to make decisions.
- Develop a solution for a real-life problem
- Develop skills in making wise consumer decisions
- Differentiate between human problems and needs
- Differentiate between invention and innovation
- Discuss how technological systems have been used to solve human problems
- Discuss the differences between problem solving and design strategies
- Engage in an activity that requires creativity.
- Explain how technology and technological activity has expected and unexpected effects
- Identify research methods, materials and techniques
- Identify the elements of design
- Prepare and document a design brief
- Develop criteria for evaluating technology

III. Interpersonal Communication & Collaboration

- Apply techniques of interpersonal and mass communication through activities such as sketching, computer- aided drafting (CAD), photography and video
- Create prototypes of communication instruments in various media.
- Demonstrate the proper use of the terminology associated with a variety of communication techniques.
- Engage in multimedia activities
- Evaluate and select appropriate methods of communication for a given problem or situation.
- Explore and identify the personal, societal, economic and environmental effects of technological systems

Intro to Tech (Grade 6)

III. Interpersonal Communication & Collaboration (continued)

- Identify and describe how individual technological innovations may be combined to create new technologies
- Use communications technology to acquire images and information.
- Present an idea using multimedia technology.
- Demonstrate the application of communication techniques and strategies in delivering a message in printed form.
- Identify and give examples of integrated technologies

IV. Products & Accountability

- Apply the method of line production in the "manufacture" of a simple product.
- Define basic manufacturing terminology.
- Demonstrate the appropriate selection, use and safe operation of basic hand and power tools.
- Describe how products are manufactured
- Describe how products are manufactured using the methods of single craftsman, line and mass, and automated robotics manufacturing.
- Describe how societies are organized to produce and distribute goods and services in a structured manner.
- Use manual and electronic measuring devices accurately.
- Produce a product using a simple production sequence: layout, shaping, smoothing, assembly and finishing techniques

V. Leadership & Responsibility

- Apply organizational skills to classroom and lab activities.
- Assume appropriate roles within a team environment.
- Create a simple flowchart of their daily activities.
- Demonstrate an ability to take responsibility for their own actions.
- Demonstrate strategies for effectively managing time.
- Identify and demonstrate organizational skills.

VI. Career Awareness

- Define and demonstrate a personal work ethic.
- Describe free enterprise
- Describe how technological development affects careers and occupations.
- Explore career options.
- Explore market research and its relationship to satisfying consumer needs.
- Identify and categorize careers associated with each of the CT Career Clusters and pathways
- Identify expectations in the workplace.
- Identify high school and postsecondary training selections necessary to prepare for a particular career choice.
- Participate in a variety of roles within an organizational structure.
- Conduct research related to careers.

Manufacturing (Grade 6)

I. Creativity & Innovation

- Apply a variety of manufacturing techniques and processes to create a usable product
- Describe the universal input, process, output, feedback (IPOF) systems model
- Develop preliminary product layouts
- Develop, test and modify a design idea through experimentation
- Discuss the influence of enterprise on culture, society and the environment.
- Engage in an activity that requires creativity
- Explain the role of creativity in the engineering design process.
- Explore techniques used to refine conceptual design sketches
- Identify and describe the tools, materials and methods used in manufacturing products
- Identify the elements of design.
- Identify the social and economic impacts of automation and computer controlled processing technologies
- Trace the historical evolution of the construction industry.

II. Critical Thinking & Problem Solving

- Acquire technology-based information and apply it in classroom and laboratory situations.
- Analyze a product for its ability to satisfy consumer demands
- Apply cooperative techniques while engaging in group problem-solving activities.
- Apply technological systems to solve a posed problem.
- Define decision-making research and innovation.
- Describe the evolution of technological enterprise
- Develop a solution for a real-life problem
- Develop skills in making wise consumer decisions
- Differentiate between human problems and needs
- Discuss how technological systems have been used to solve human problems
- Discuss the differences between problem solving and design strategies
- Engage in an activity that requires creativity.
- Explain how technology and technological activity has expected and unexpected effects.
- Identify research methods, materials and techniques
- Identify the elements of design
- Prepare and document a design brief.

III. Interpersonal Communication & Collaboration (continued)

- Demonstrate the proper use of the terminology associated with a variety of communication techniques.
- Engage in multimedia presentation activities
- Evaluate and select appropriate methods of communication for a given problem or situation.
- Explore and identify the personal, societal, economic and environmental effects of technological systems
- Identify and describe how individual technological innovations may be combined to create new technologies
- Present an idea using multimedia technology.

Manufacturing (Grade 6)

IV. Products & Accountability

- Apply the method of line production in the "manufacture" of a simple product.
- Define basic manufacturing terminology.
- Demonstrate a working knowledge of the layout, shaping, smoothing, assembly and finishing techniques used to produce a product
- Demonstrate the appropriate selection, use and safe operation of basic hand and power tools.
- Describe how products are manufactured
- Describe how products are manufactured using the methods of single craftsman, line and mass, and automated robotics manufacturing.
- Describe how societies are organized to produce and distribute goods and services in a structured manner.
- Produce a product using a simple production sequence: layout, shaping, smoothing, assembly and finishing techniques
- Produce simple products from a variety of materials, using manual and computer- controlled devices

V. Leadership & Responsibility

- Analyze a product for its ability to satisfy consumer demands.
- Apply organizational skills to classroom and lab activities.
- Assume appropriate roles within a team environment.
- Create a simple flowchart of their daily activities.
- Demonstrate an ability to take responsibility for their own actions.
- Demonstrate strategies for effectively managing time.
- Explore different roles while working cooperatively and effectively in team situations.
- Identify and demonstrate organizational skills.

VI. Career Awareness

- Define and demonstrate a personal work ethic.
- Describe how technological development affects careers and occupations.
- Develop skills in making wise consumer decisions
- Explore career options.
- Explore quality control methods.
- Identify and categorize careers associated with each of the CT Career Clusters and pathways
- Identify expectations in the workplace.
- Identify high school and postsecondary training selections necessary to prepare for a particular career choice.
- Participate in a variety of roles within an organizational structure.
- Conduct research related to careers.

Exploring Material Processing (Grade 6)

I. Creativity & Innovation

- Apply a variety of manufacturing techniques and processes to create a usable product
- Develop preliminary product layouts
- Discuss the influence of enterprise on culture, society and the environment.
- Engage in an activity that requires creativity
- Identify and describe the tools, materials and methods used in manufacturing products;
- Identify the social and economic impacts of automation and computer controlled processing technologies
- Trace the historical evolution of the construction industry.

II. Critical Thinking & Problem Solving

- Apply technological systems to solve a posed problem.
- Engage in an activity that requires creativity.

III. Interpersonal Communication & Collaboration

Not applicable

IV. Products & Accountability

- Define basic manufacturing terminology.
- Demonstrate a working knowledge of the layout, shaping, smoothing, assembly and finishing techniques used to produce a product
- Demonstrate the appropriate selection, use and safe operation of basic hand and power tools.
- Describe how products are manufactured using the methods of single craftsman, line and mass, and automated robotics manufacturing.

V. Leadership & Responsibility

- Demonstrate an ability to take responsibility for their own actions.
- Demonstrate strategies for effectively managing time

VI. Career Awareness

- Define and demonstrate a personal work ethic
- Explore career options
- Identify and categorize careers associated with each of the CT Career Clusters and pathways
- Identify expectations in the workplace
- Identify high school and postsecondary training selectins necessary to prepare for a particular career choice.
- Participate in a variety of roles within an organizational structure.
- Conduct research related to careers.

Exploring Construction

I. Creativity & Innovation

- Analyze a design, through testing of model shelters and/or other structures and altering the design for improved performance.
- Define the terms single ownership, company, corporation and partnership
- Describe the universal input, process, output, feedback (IPOF) systems model
- Develop preliminary product layouts
- Create simple flow and design charte for the manufacturing of a product
- Discuss the influence of enterprise on culture, society and the environment.
- Engage in an activity that requires creativity
- Explain the role of creativity in the engineering design process.
- Explore a variety of creativity-enhancing techniques.
- Explore techniques used to refine conceptual design sketches
- Identify the elements of design.
- Identify the social and economic impacts of automation and computer controlled processing technologies
- Trace the historical evolution of the construction industry.

II. Critical Thinking & Problem Solving

- Acquire technology-based information and apply it in classroom and laboratory situations.
- Apply cooperative techniques while engaging in group problem-solving activities.
- Apply technological systems to solve a posed problem.
- Describe the evolution of technological enterprise
- Develop a solution for a real-life problem
- Develop skills in making wise consumer decisions
- Differentiate between human problems and needs
- Engage in an activity that requires creativity.
- Identify research methods, materials and techniques
- Identify the characteristics of sub- and superstructures
- Identify the elements of design
- Select appropriate technical processes and fabricate a prototype
- Develop test and modify a design through experimentation

III. Interpersonal Communication & Collaboration

- Engage in multimedia presentation activities
- Evaluate and select appropriate methods of communication for a given problem or situation.
- Explore and identify the personal, societal, economic and environmental effects of technological systems

IV. Products & Accountability

- Define basic manufacturing terminology.
- Demonstrate a working knowledge of the layout, shaping, smoothing, assembly and finishing techniques used to produce a product

Exploring Construction

IV. Products & Accountability (continued)

- Demonstrate the appropriate selection, use and safe operation of basic hand and power tools.
- Describe how a business produces profit
- Describe how products are manufactured
- Use manual and electronic measuring devices accurately.

V. Leadership & Responsibility

- Create a simple flowchart of thei daily activities
- Demonstrate an ability to take responsibility for their own actions.
- Demonstrate strategies for effectively managing time.
- Engage in presentation activities.
- Explore different roles while working cooperatively and effectively in team situations.
- Identify and demonstrate organizational skills.

VI. Career Awareness

- Define and demonstrate a personal work ethic.
- Describe free enterprise
- Describe how technological development affects careers and occupations.
- Explore career options.
- Identify and categorize careers associated with each of the CT Career Clusters and pathways
- Identify expectations in the workplace.
- Identify high school and postsecondary training selections necessary to prepare for a particular career choice.
- Participate in a variety of roles within an organizational structure.
- Conduct research related to careers.

Innovation and Invention (Grade 8)

I. Creativity & Innovation

- Apply a variety of manufacturing techniques and processes to create a usable product
- Complete a cost estimation.
- Create a simple flow and design chart for the manufacturing of a product
- Describe the universal input, process, output, feedback (IPOF) systems model
- Design a product based on available materials, tools, and equipment.
- Develop preliminary product layouts
- Develop, test and modify a design idea through experimentation
- Discuss the influence of enterprise on culture, society and the environment.
- Engage in an activity that requires creativity
- Explore a variety of creativity-enhancing techniques.
- Explore techniques used to refine conceptual design sketches
- Identify and describe the tools, materials and methods used in manufacturing products;
- Identify the elements of design.
- Identify the social and economic impacts of automation and computer controlled processing technologies
- Trace the historical development of at least one technology, identifying its effects and hypothesizing about its future
- Trace the historical evolution of manufacturing.
- Understand the principles of aerodynamics

II. Critical Thinking & Problem Solving

- Acquire technology-based information and apply it in classroom and laboratory situations.
- Analyze a product for its ability to satisfy consumer demands
- Apply a general problem solving model including research techniques to invent a product.
- Apply appropriate and effective questioning techniques.
- Apply cooperative techniques while engaging in group problem-solving activities.
- Apply descriptive statistics of average, percentage correlation, and graphing to design outcomes.
- Apply technological systems to solve a posed problem.
- Be familiar with the laws related to copyrights, trademarks and patents
- Define decision-making research and innovation
- Describe the evolution of technological enterprise
- Develop a solution for a real-life problem
- Develop skills in making wise consumer decisions
- Differentiate between human problems and needs
- Differentiate between invention and innovation
- Discuss how technological systems have been used to solve human problems
- Engage in an activity that requires creativity
- Evaluate design ideas to determine the most appropriate.
- Explain how technology and technological activity has expected and unexpected effects
- Identify research methods, materials and techniques
- Identify the elements of design
- Prepare and document a design brief.

Innovation and Invention (Grade 8)

III. Interpersonal Communication & Collaboration

- Apply techniques of interpersonal and mass communication through activities such as sketching, computer- aided drafting (CAD), photography and video
- Create prototypes of communication instruments in various media.
- Demonstrate the proper use of the terminology associated with a variety of communication techniques.
- Engage in multimedia presentation activities
- Evaluate and select appropriate methods of communication for a given problem or situation.
- Explore and identify the personal, societal, economic and environmental effects of technological systems
- Identify and describe how individual technological innovations may be combined to create new technologies
- Use communications technology to acquire images and information.
- Present an idea using multimedia technology.

IV. Products & Accountability

- Apply the method of line production in the "manufacture" of a simple product.
- Define basic manufacturing terminology.
- Demonstrate a working knowledge of the layout, shaping, smoothing, assembly and finishing techniques used to produce a product
- Describe how a business produces profit
- Describe how products are manufactured
- Describe how products are manufactured using the methods of single craftsman, line and mass, and automated robotics manufacturing.
- Describe how societies are organized to produce and distribute goods and services in a structured manner.
- Use manual and electronic measuring devices accurately.
- Define and use the quality control measures of pre -inventory inspection, statistical process control, and total quality management.
- Produce a product using a simple production sequence: layout, shaping, smoothing, assembly and finishing techniques

V. Leadership & Responsibility

- Analyze a product for its ability to satisfy consumer demands.
- Apply organizational skills to classroom and lab activities.
- Assume appropriate roles within a team environment.
- Consider personal strengths in determining team assignments.
- Create a simple flowchart of their daily activities.
- Demonstrate an ability to take responsibility for their own actions.
- Demonstrate strategies for effectively managing time.
- Engage in presentation activities.
- Explore different roles while working cooperatively and effectively in team situations.
- Identify and demonstrate organizational skills.

Innovation and Invention (Grade 8)

VI. Career Awareness

- Calculate the cost of producing a manufactured product and determine a retail price
- Define and demonstrate a personal work ethic.
- Define the terms single ownership, company, corporation and partnership
- Describe free enterprise
- Describe how technological development affects careers and occupations.
- Design a simulated enterprise and participate in a variety of roles within the organization structure.
- Develop a learning portfolio of their areas of experience and expertise.
- Develop a marketing plan and successfully distribute a product.
- Develop skills in making wise consumer decisions
- Develop, distribute and evaluate a customer survey
- Discuss the influence of enterprise on culture, society and the environment
- Explore career options.
- Explore market research and its relationship to satisfying consumer needs.
- Explore quality control methods.
- Identify and categorize careers associated with each of the CT Career Clusters and pathways
- Identify expectations in the workplace.
- Identify high school and postsecondary training selections necessary to prepare for a particular career choice.
- Participate in a variety of roles within an organizational structure.
- Conduct research related to careers.

Architectural Design (Grade 8)

I. Creativity & Innovation

- Discuss the influence of enterprise on culture, society and the environment.
- Engage in an activity that requires creativity
- Identify the elements of design.

II. Critical Thinking & Problem Solving

- Apply technological systems to solve a posed problem.
- Develop a solution for a real-life problem
- Engage in an activity that requires creativity.
- Evaluate design ideas to determine the most appropriate.
- Identify the elements of design

III. Interpersonal Communication & Collaboration

- Apply techniques of interpersonal and mass communication through activities such as sketching, computer-aided drafting (CAD), photography and video
- Present an idea using multimedia technology.

IV. Products & Accountability

Not applicable

V. Leadership & Responsibility

- Demonstrate an ability to take responsibility for their own actions.
- Demonstrate strategies for effectively managing time.
- Engage in presentation activities.

VI. Career Awareness

- Define and demonstrate a personal work ethic.
- Explore career options.
- Identify and categorize careers associated with each of the CT Career Clusters and pathways
- Identify expectations in the workplace.
- Identify high school and postsecondary training selections necessary to prepare for a particular career choice.
- Participate in a variety of roles within an organizational structure.
- Conduct research related to careers.

Intro to Engineering (HS Semester)

I. Creativity & Innovation

- Describe the universal input, process, output, feedback (IPOF) systems model
- Develop preliminary product layouts
- Discuss the influence of enterprise on culture, society and the environment.
- Identify and evaluate alternative materials.
- Identify the social and economic impacts of automation and computer controlled processing technologies
- Apply technological systems to solve a posed problem.
- Trace the historical evolution of the construction industry.

II. Critical Thinking & Problem Solving

- Acquire technology-based information and apply it in classroom and laboratory situations.
- Analyze a product for its ability to satisfy consumer demands
- Apply a general problem solving model to improve upon an existing product
- Apply appropriate and effective questioning techniques.
- Apply cooperative techniques while engaging in group problem-solving activities.
- Apply technological systems to solve a posed problem.
- Be familiar with the laws related to copyrights, trademarks, and patents.
- Describe and apply the processes used to make decisions.
- Develop a solution for a real-life problem
- Develop skills in making wise consumer decisions
- Differentiate between invention and innovation
- Discuss how technological systems have been used to solve human problems
- Engage in an activity that requires creativity.
- Identify research methods, materials and techniques
- Identify the elements of design
- Prepare and document a design brief.
- Select appropriate technical processes and fabricate a prototype.
- Develop test and modify a design through experimentation

III. Interpersonl Communication & Collaboration

- Apply techniques of interpersonal and mass communication through activities such as sketching, computer- aided drafting (CAD), photography and video
- Demonstrate the proper use of the terminology associated with a variety of communication techniques.
- Engage in multimedia presentation activities
- Evaluate and select appropriate methods of communication for a given problem or situation.
- Explore and identify the personal, societal, economic and environmental effects of technological systems
- Identify and describe how individual technological innovations may be combined to create new technologies
- Use communications technology to acquire images and information.
- Present an idea using multimedia technology.

Intro to Engineering (HS Semester)

IV. Products & Accountability

- Analyze a product for its ability to satisfy consumer demands
- Describe the evolution of technological enterprise
- Differentiate between human problems and needs
- Differentiate between invention and innovation
- Discuss how technological systems have been used to solve human problems
- Discuss the differences between problem solving and design strategies
- Engage in an activity that requires creativity.
- Use manual and electronic measuring devices accurately.

V. Leadership & Responsibility

- Apply organizational skills to classroom and lab activities.
- Assume appropriate roles within a team environment.
- Consider personal strengths in determining team assignments.
- Demonstrate an ability to take responsibility for their own actions.
- Demonstrate strategies for effectively managing time.
- Engage in presentation activities.
- Explore different roles while working cooperatively and effectively in team situations.
- Identify and demonstrate organizational skills.

VI. Career Awareness

- Calculate the cost of producing a manufactured product and determine a retail price
- Define and demonstrate a personal work ethic.
- Define the terms single ownership, company, corporation and partnership
- Describe free enterprise
- Describe how technological development affects careers and occupations.
- Develop a learning portfolio of their areas of experience and expertise.
- Develop skills in making wise consumer decisions
- Discuss the influence of enterprise on culture, society and the environment
- Explore career options.
- Explore market research and its relationship to satisfying consumer needs.
- Identify and categorize careers associated with each of the CT Career Clusters and pathways
- Identify expectations in the workplace.
- Identify high school and postsecondary training selections necessary to prepare for a particular career choice.
- Participate in a variety of roles within an organizational structure.
- Conduct research related to careers.

Creative Woodworking (HS Semester)

I. Creativity & Innovation

- Apply a variety of manufacturing techniques and processes to create a usable product
- Create a simple flow and design chart for the manufacturing of a product
- Design a product based on available materials, tools, and equipment.
- Develop preliminary product layouts
- Develop, test and modify a design idea through experimentation
- Discuss the influence of enterprise on culture, society and the environment
- Engage in an activity that requires creativity
- Explain the role of creativity in the engineering design process.
- Explore a variety of creativity-enhancing techniques.
- Explore techniques used to refine conceptual design sketches
- Identify and describe the tools, materials and methods used in manufacturing products;
- Identify and evaluate alternative materials.
- Identify the elements of design.
- Identify the social and economic impacts of automation and computer controlled processing technologies

II. Critical Thinking & Problem Solving

- Acquire technology-based information and apply it in classroom and laboratory situations.
- Analyze a product for its ability to satisfy consumer demands
- Apply a general problem solving model to improve upon an existing product.
- Apply appropriate and effective questioning techniques.
- Apply cooperative techniques while engaging in group problem-solving activities.
- Apply technological systems to solve a posed problem.
- Describe and apply the processes used to make decisions.
- Develop a solution for a real-life problem
- Engage in an activity that requires creativity.
- Evaluate design ideas to determine the most appropriate.
- Explain how technology and technological activity has expected and unexpected effects
- Identify research methods, materials and techniques
- Identify the elements of design
- Prepare and document a design brief.
- Select appropriate technical processes and fabricate a prototype.
- Develop test and modify a design through experimentation

III. Interpersonal Communication & Collaboration

- Apply techniques of interpersonal and mass communication through activities such as sketching, computer- aided drafting (CAD), photography and video
- Demonstrate the proper use of the terminology associated with a variety of communication techniques.
- Engage in multimedia presentation activities.
- Evaluate and select appropriate methods of communication for a given problem or situation.

Creative Woodworking (HS Semester)

III. Interpersonal Communication & Collaboration (continued)

- Explore and identify the personal, societal, economic and environmental effects of technological systems
- Identify and describe how individual technological innovations may be combined to create new technologies
- Present an idea using multimedia technology.

IV. Products & Accountability

- Apply the method of line production in the "manufacture" of a simple product.
- Classify raw materials according to their physical and mechanical properties.
- Define basic manufacturing terminology.
- Demonstrate a working knowledge of the layout, shaping, smoothing, assembly and finishing techniques used to produce a product
- Demonstrate the appropriate selection, use and safe operation of basic hand and power tools.
- Describe how a business produces profit
- Describe how products are manufactured
- Describe how products are manufactured using the methods of single craftsman, line and mass, and automated robotics manufacturing.
- Use manual and electronic measuring devices accurately.
- Define and use the quality control measures of pre -inventory inspection, statistical process control, and total quality management.
- Produce simple products from a variety of materials, using manual and computer- controlled devices

V. Leadership & Responsibility

- Analyze a product for its ability to satisfy consumer demands.
- Create a simple flowchart of their daily activities.
- Demonstrate an ability to take responsibility for their own actions.
- Demonstrate strategies for effectively managing time.
- Engage in presentation activities.

VI. Career Awareness

- Calculate the cost of producing a manufactured product and determine a retail price
- Define and demonstrate a personal work ethic.
- Define the terms single ownership, company, corporation and partnership
- Describe how technological development affects careers and occupations.
- Design a simulated enterprise and participate in a variety of roles within the organization structure.
- Develop a learning portfolio of their areas of experience and expertise.
- Develop a marketing plan and successfully distribute a product.
- Discuss the influence of enterprise on culture, society and the environment
- Explore career options.
- Explore quality control methods.

Creative Woodworking (HS Semester)

VI. Career Awareness (continued)

- Identify and categorize careers associated with each of the CT Career Clusters and pathways
- Identify expectations in the workplace.
- Identify high school and postsecondary training selections necessary to prepare for a particular career choice.
- Participate in a variety of roles within an organizational structure.
- Conduct research related to careers.

Marine Construction (HS Semester)

I. Creativity & Innovation

- Create a simple flow and design charge for the manufacturing of a product
- Design, fabricate, test and evaluate a marine transporation system
- Develop preliminary product layouts
- Discuss the influence of enterprise on culture, society and environment
- Identify and describe the tools, materials and methods used in manufacturing products
- Identify and evaluate alternative materials
- Identify the elements of design
- Identify the social and economic impacts and computer-controlled processing technologi8es

II. Critical Thinking & Problem Solving

- Acquire technology-based information and apply it in classroom and laboratory situations.
- Analyze a product for its ability to satisfy consumer demands
- Apply a general problem solving model to improve upon an existing product
- Apply appropriate and effective questioning techniques.
- Apply cooperative techniques while engaging in group problem-solving activities.
- Apply technological systems to solve a posed problem.
- Describe and apply the processes used to make decisions.
- Develop a solution for a real-life problem
- Engage in an activity that requires creativity.
- Evaluate design ideas to determine the most appropriate.
- Explain how technology and technological activity has expected and unexpected effects
- Identify research methods, materials and techniques
- Identify the elements of design
- Prepare and document a design brief.
- Develop test and modify a design through experimentation

III. Interpersonal Communication & Collaboration

- Apply techniques of interpersonal and mass communication through activities such as sketching, computer- aided drafting (CAD), photography and video
- Demonstrate the proper use of the terminology associated with a variety of communication techniques.
- Engage in multimedia presentation activities
- Evaluate and select appropriate methods of communication for a given problem or situation.
- Explore and identify the personal, societal, economic and environmental effects of technological systems
- Identify and describe how individual technological innovations may be combined to create new technologies
- Present an idea using multimedia technology.

Marine Construction (HS Semester)

IV. Products & Accountability

- Classify raw materials according to their physical and mechanical properties.
- Define basic manufacturing terminology.
- Demonstrate a working knowledge of the layout, shaping, smoothing, assembly and finishing techniques used to produce a product
- Demonstrate the appropriate selection, use and safe operation of basic hand and power tools.
- Describe how a business produces profit
- Describe how products are manufactured
- Use manual and electronic measuring devices accurately.
- Produce a product using a simple production sequence: layout, shaping, smoothing, assembly and finishing techniques

V. Leadership & Responsibility

- Create a simple flowchart of their daily activities.
- Demonstrate an ability to take responsibility for their own actions.
- Demonstrate strategies for effectively managing time.
- Engage in presentation activities.

VI. Career Awareness

- Define and demonstrate a personal work ethic.
- Define the terms single ownership, company, corporation and partnership
- Describe how technological development affects careers and occupations.
- Develop a learning portfolio of their areas of experience and expertise.
- Discuss the influence of enterprise on culture, society and the environment
- Explore career options.
- Identify and categorize careers associated with each of the CT Career Clusters and pathways
- Identify expectations in the workplace.
- Identify high school and postsecondary training selections necessary to prepare for a particular career choice.
- Participate in a variety of roles within an organizational structure.
- Conduct research related to careers.

Tech Math (HS Semester)

I. Creativity & Innovation

- Analyze a design, through testing of model shelters and/or other structures and altering the design for improved performance.
- Complete a cost estimation.
- Create a simple flow and design chart for the manufacturing of a product
- Develop preliminary product layouts
- Discuss the influence of enterprise on culture, society and the environment.
- Identify and describe the tools, materials and methods used in manufacturing products
- Identify and evaluate alternative materials.
- Identify the elements of design.
- Identify the social and economic impacts of automation and computer controlled processing technologies

II. Critical Thinking & Problem Solving

- Acquire technology-based information and apply it in classroom and laboratory situations.
- Analyze a product for its ability to satisfy consumer demands
- Apply a general problem solving model to improve upon an existing product
- Apply appropriate and effective questioning techniques.
- Apply cooperative techniques while engaging in group problem-solving activities.
- Apply descriptive statistics of average, percentage correlation, and graphing to design outcomes.
- Apply technological systems to solve a posed problem.
- Describe and apply the processes used to make decisions.
- Develop a solution for a real-life problem
- Engage in an activity that requires creativity.
- Evaluate design ideas to determine the most appropriate.
- Explain how technology and technological activity has expected and unexpected effects
- Identify research methods, materials and techniques
- Identify the elements of design
- Prepare and document a design brief.
- Develop test and modify a design through experimentation

III. Interpersonal Communication & Collaboration

- Apply techniques of interpersonal and mass communication through activities such as sketching, computer- aided drafting (CAD), photography and video
- Demonstrate the proper use of the terminology associated with a variety of communication techniques.
- Engage in multimedia presentation activities
- Evaluate and select appropriate methods of communication for a given problem or situation.
- Explore and identify the personal, societal, economic and environmental effects of technological systems
- Identify and describe how individual technological innovations may be combined to create new technologies
- Present an idea using multimedia technology.

Tech Math (HS Semester)

IV. Products & Accountability

- Classify raw materials according to their physical and mechanical properties.
- Define basic manufacturing terminology.
- Demonstrate a working knowledge of the layout, shaping, smoothing, assembly and finishing techniques used to produce a product
- Demonstrate the appropriate selection, use and safe operation of basic hand and power tools.

- Describe how a business produces profit
- Describe how products are manufactured
- Use manual and electronic measuring devices accurately.

V. Leadership & Responsibility

- Create a simple flowchart of their daily activities.
- Demonstrate an ability to take responsibility for their own actions.
- Demonstrate strategies for effectively managing time.
- Engage in presentation activities.

VI. Career Awareness

- Define and demonstrate a personal work ethic.
- Define the terms single ownership, company, corporation and partnership
- Describe how technological development affects careers and occupations.
- Develop a learning portfolio of their areas of experience and expertise.
- Develop a marketing plan and successfully distribute a product.
- Develop skills in making wise consumer decisions
- Discuss the influence of enterprise on culture, society and the environment
- Explore career options.
- Identify and categorize careers associated with each of the CT Career Clusters and pathways
- Identify expectations in the workplace.
- Identify high school and postsecondary training selections necessary to prepare for a particular career choice.
- Participate in a variety of roles within an organizational structure.
- Conduct research related to careers.

Design Engineering (HS Semester)

I. Creativity & Innovation

- Complete a cost estimation.
- Create a simple flow and design chart for the manufacturing of a product
- Design a product based on available materials, tools, and equipment.
- Develop preliminary product layouts
- Develop, test and modify a design idea through experimentation
- Discuss the influence of enterprise on culture, society and the environment
- Engage in an activity that requires creativity
- Explain the role of creativity in the engineering design process.
- Explore a variety of creativity-enhancing techniques.
- Explore techniques used to refine conceptual design sketches
- Identify and evaluate alternative materials.
- Identify the elements of design.
- Identify the social and economic impacts of automation and computer controlled processing technologies
- Trace the historical development of at least one technology, identifying its effects and hypothesizing about its future
- Trace the historical evolution of manufacturing.
- Understand the principles of aerodynamics

II. Critical Thinking & Problem Solving

- Apply a general problem solving model including research techniques to invent a product.
- Apply a general problem solving model to improve upon an existing product.
- Apply appropriate and effective questioning techniques.
- Apply cooperative techniques while engaging in group problem-solving activities.
- Apply descriptive statistics of average, percentage correlation, and graphing to design outcomes.
- Apply technological systems to solve a posed problem.
- Be familiar with the laws related to copyrights, trademarks, and patents.
- Conduct an applied research project
- Describe and apply the processes used to make decisions.
- Develop a solution for a real-life problem
- Differentiate between invention and innovation
- Discuss how technological systems have been used to solve human problems
- Discuss the differences between problem solving and design strategies
- Engage in an activity that requires creativity.
- Evaluate design ideas to determine the most appropriate.
- Explain how technology and technological activity has expected and unexpected effects
- Identify research methods, materials and techniques
- Identify the characteristics of sub- and superstructures
- Identify the elements of design
- Prepare and document a design brief.
- Select appropriate technical processes and fabricate a prototype.
- Develop test and modify a design through experimentation

Design Engineering (HS Semester)

III. Interpersonal Communication & Collaboration

- Apply techniques of interpersonal and mass communication through activities such as sketching, computer- aided drafting (CAD), photography and video
- Demonstrate the proper use of the terminology associated with a variety of communication techniques.
- Engage in multimedia presentation activities.
- Evaluate and select appropriate methods of communication for a given problem or situation.
- Explore and identify the personal, societal, economic and environmental effects of technological systems
- Identify and describe how individual technological innovations may be combined to create new technologies
- Use communications technology to acquire images and information.
- Present an idea using multimedia technology.

IV. Products & Accountability

- Classify raw materials according to their physical and mechanical properties.
- Define basic manufacturing terminology.
- Demonstrate a working knowledge of the layout, shaping, smoothing, assembly and finishing techniques used to produce a product
- Demonstrate the appropriate selection, use and safe operation of basic hand and power tools.
- Describe how a business produces profit
- Describe how products are manufactured
- Describe how products are manufactured using the methods of single craftsman, line and mass, and automated robotics manufacturing.
- Use manual and electronic measuring devices accurately.
- Define and use the quality control measures of pre -inventory inspection, statistical process control, and total quality management.

V. Leadership & Responsibility

- Analyze a product for its ability to satisfy consumer demands.
- Demonstrate an ability to take responsibility for their own actions.
- Demonstrate strategies for effectively managing time.
- Engage in presentation activities.

VI. Career Awareness

- Define and demonstrate a personal work ethic.
- Define the terms single ownership, company, corporation and partnership
- Describe how technological development affects careers and occupations.
- Develop a learning portfolio of their areas of experience and expertise.
- Develop skills in making wise consumer decisions
- Develop, distribute and evaluate a customer survey

Design Engineering (HS Semester)

VI. Career Awareness (continued)

- Discuss the influence of enterprise on culture, society and the environment
- Explore career options.
- Identify and categorize careers associated with each of the CT Career Clusters and pathways
- Identify expectations in the workplace.
- Identify high school and postsecondary training selections necessary to prepare for a particular career choice.
- Participate in a variety of roles within an organizational structure.
- Conduct research related to careers.

STEM Physics (HS Year Long)

I. Creativity & Innovation

- Complete a cost estimation.
- Design a product based on available materials, tools, and equipment.
- Develop, test and modify a design idea through experimentation
- Discuss the influence of enterprise on culture, society and the environment.
- Engage in an activity that requires creativity
- Explain the role of creativity in the engineering design process.
- Explore a variety of creativity-enhancing techniques.
- Explore techniques used to refine conceptual design sketches
- Identify and evaluate alternative materials.
- Identify the elements of design.
- Identify the social and economic impacts of automation and computer controlled processing technologies
- Trace the historical development of at least one technology, identifying its effects and hypothesizing about its future
- Understand the principles of aerodynamics

II. Critical Thinking & Problem Solving

- Apply a general problem solving model including research techniques to invent a product.
- Apply a general problem solving model to improve upon an existing product.
- Apply appropriate and effective questioning techniques.
- Apply cooperative techniques while engaging in group problem-solving activities.
- Apply descriptive statistics of average, percentage correlation, and graphing to design outcomes.
- Apply technological systems to solve a posed problem.
- Be familiar with the laws related to copyrights, trademarks, and patents.
- Conduct an applied research project
- Describe and apply the processes used to make decisions.
- Develop a solution for a real-life problem
- Differentiate between invention and innovation
- Discuss how technological systems have been used to solve human problems
- Discuss the differences between problem solving and design strategies
- Engage in an activity that requires creativity.
- Evaluate design ideas to determine the most appropriate.
- Explain how technology and technological activity has expected and unexpected effects
- Identify research methods, materials and techniques
- Identify the elements of design
- Prepare and document a design brief.
- Select appropriate technical processes and fabricate a prototype.
- Develop test and modify a design through experimentation

STEM Physics (HS Year Long)

III. Interpersonal Communication & Collaboration

- Apply techniques of interpersonal and mass communication through activities such as sketching, computer- aided drafting (CAD), photography and video
- Demonstrate the proper use of the terminology associated with a variety of communication techniques.
- Engage in multimedia presentation activities.
- Evaluate and select appropriate methods of communication for a given problem or situation.
- Explore and identify the personal, societal, economic and environmental effects of technological systems
- Identify and describe how individual technological innovations may be combined to create new technologies
- Use communications technology to acquire images and information.
- Present an idea using multimedia technology.

IV. Products & Accountability

- Classify raw materials according to their physical and mechanical properties.
- Define basic manufacturing terminology.
- Demonstrate a working knowledge of the layout, shaping, smoothing, assembly and finishing techniques used to produce a product
- Demonstrate the appropriate selection, use and safe operation of basic hand and power tools.
- Describe how a business produces profit
- Describe how products are manufactured
- Describe how products are manufactured using the methods of single craftsman, line and mass, and automated robotics manufacturing.
- Use manual and electronic measuring devices accurately.
- Define and use the quality control measures of pre -inventory inspection, statistical process control, and total quality management.

V. Leadership & Responsibility

- Demonstrate an ability to take responsibility for their own actions.
- Demonstrate strategies for effectively managing time.
- Engage in presentation activities.

VI. Career Awareness

- Define and demonstrate a personal work ethic.
- Describe how technological development affects careers and occupations.
- Develop a learning portfolio of their areas of experience and expertise.
- Discuss the influence of enterprise on culture, society and the environment

STEM Physics (HS Year Long)

VI. Career Awareness (continued)

- Explore career options.
- Identify and categorize careers associated with each of the CT Career Clusters and pathways
- Identify expectations in the workplace.
- Identify high school and postsecondary training selections necessary to prepare for a particular career choice.
- Participate in a variety of roles within an organizational structure.
- Conduct research related to careers.

Technology Education

STEM Engineering Transportation Pathway

Intro to Technology (6)
Transportation (7)
Computer-Aided Design (CAD) (7)
RoboLab (7)
Innovation & Invention (8)
Introduction to Engineering (sem-HS)
Transportation Engineering (sem)
Design Engineering (year-HS)
STEM Physics (year-HS)

Course	Key Projects/Applications	Framework Emphasis	Foundation Skills and Competencies
Intro to Technology (6)	• Picture Collage • Logo Design • ID Design • Car Builder • Wind Tunnel • Bridge Builder	• Creativity and Innovation • Critical Thinking and Problem Solving • Interpersonal Communication and Collaboration • Productivity and Accountability • Career Awareness	• Uses appropriate forms of expressions and conventions of Standard English to communicate and develop thoughts, share ideas, influence and persuade, and create and entertain • Applies computational skills, number sense and mathematical techniques to solve problems and judge reasonableness of results • Accesses a wide range of resources (print, non-print, and technological) to expand knowledge, conduct research, communicate information, create original works, and investigate complex problems • Designs and applies techniques for investigating real-world issues and problems including; posing questions, hypothesizing, observing, collecting and analyzing data, and communicating findings

Transportation (7)	• Transportation Systems
	  ○ Fixed Route Problem Solving & Design
	  ○ Mousetrap Vehicle
	  ○ Magnetic Levitation Vehicle
	  ○ Solar Energy Vehicle
	  ○ Dragster Vehicle/Wind Tunnel
	  ○ Strato Blaster Rocket Design & Critical Thinking
		• Creativity and Innovation
		• Critical Thinking and Problem Solving
		• Interpersonal Communication and Collaboration
		• Productivity and Accountability
		• Career Awareness
			• Listens and views verbal and nonverbal presentations in order to analyze, clarify, follow directions, and ask and answer questions
			• Applies computational skills, number sense and mathematical techniques to solve problems and judge reasonableness of results
			• Accesses a wide range of resources (print, non-print, and technological) to expand knowledge, conduct research, communicate information, create original works, and investigate complex problems
			• Designs and applies techniques for investigating real-world issues and problems including; posing questions, hypothesizing, observing, collecting and analyzing data, and communicating findings
			• Works collaboratively in a group to accomplish a goal by exchanging ideas, synthesizing information, investigating solutions to a problem, sharing workload and completing assigned tasks

Course	Key Projects/Applications	Framework Emphasis	Foundation Skills and Competencies
Computer Aided Design (CAD) (7)	• Geometric Shapes • Orthographic and Pictorial Drawings • Group Design-"IBM Block" • Mantel Toy Company	• Creativity and Innovation • Critical Thinking and Problem Solving • Leadership and Responsibility • Career Awareness	• Reads a variety of literary, informational, and persuasive texts with understanding, and is able to analyze, interpret, evaluate text, and reads for enjoyment • Applies understanding of a writing process (drafting, revising, editing, and rewriting) to improve writing • Works collaboratively in a group to accomplish a goal by exchanging ideas, synthesizing information, investigating solutions to a problem, sharing workload and completing assigned tasks
RoboLab (7)	• Robots o Differences & Similarities o Intro to RCX (the brain) o Touch & Light Control o Training & Pilot Missions o The Can-Do Challenge	• Creativity and Innovation • Critical Thinking and Problem Solving • Interpersonal Communication and Collaboration • Productivity and Accountability • Career Awareness	• Listens and views verbal and nonverbal presentations in order to analyze, clarify, follow directions, and ask and answer questions • Applies computational skills, number sense and mathematical techniques to solve problems and judge reasonableness of results • Accesses a wide range of resources (print, non-print, and technological) to expand knowledge, conduct research, communicate information, create original works, and investigate complex problems • Designs and applies techniques for investigating real-world issues and problems including; posing questions, hypothesizing, observing, collecting and analyzing data, and communicating findings • Works collaboratively in a group to accomplish a goal by exchanging ideas, synthesizing information, investigating solutions to a problem, sharing workload and completing assigned tasks

Course	Key Projects/Applications	Framework Emphasis	Foundation Skills and Competencies

Innovations & Inventions (8)	• Manufacturing Research and Development
	  ○ Concept Design
	  ○ Market Survey
	  ○ Prototype Design
	  ○ Flow of Materials Design
	  ○ Mass Production/ Assembly Line
	  ○ Presentation
	  ○ Pack and Sell Process & Options
	  ○ Portfolio Submission
		• Creativity and Innovation
		• Critical Thinking and Problem Solving
		• Interpersonal Communication and Collaboration
		• Productivity and Accountability
		• Leadership and Responsibility
		• Career Awareness
			• Listens and views verbal and nonverbal presentations in order to analyze, clarify, follow directions, and ask and answer questions
			• Applies computational skills, number sense and mathematical techniques to solve problems and judge reasonableness of results
			• Delivers oral and visual presentations using standard conventions, forms of expression, coherent sequence of thoughts, suitable vocabulary, and tools appropriate for the purpose and audience.
			• Collects, organizes, and presents data using charts, tables, and graphs to interpret findings, defend or refute predictions, and draw conclusions
			• Investigates and evaluates information and arguments from various sources and points of view applying prior knowledge, and inductive and deductive reasoning to establish a personal stance and defend a rationale
			• Accesses a wide range of resources (print, non-print, and technological) to expand knowledge, conduct research, communicate information, create original works, and investigate complex problems
			• Designs and applies techniques for investigating real-world issues and problems including; posing questions, hypothesizing, observing, collecting and analyzing data, and communicating findings
			• Works collaboratively in a group to accomplish a goal by exchanging ideas, synthesizing information, investigating solutions to a problem, sharing workload and completing assigned tasks

Course	Key Projects/Applications	Framework Emphasis	Foundation Skills and Competencies
Intro to Engineering (HS)	• Inventor or Technology Research • Transportation Systems ○ Automotive & Robotics • Manufacturing Design & Build • Construction Modeling	• Critical Thinking and Problem Solving • Interpersonal Communication and Collaboration • Productivity and Accountability • Leadership and Responsibility • Career Awareness	• Listens and views verbal and nonverbal presentations in order to analyze, clarify, follow directions, and ask and answer questions • Applies computational skills, number sense and mathematical techniques to solve problems and judge reasonableness of results • Delivers oral and visual presentations using standard conventions, forms of expression, coherent sequence of thoughts, suitable vocabulary, and tools appropriate for the purpose and audience • Collects, organizes, and presents data using charts, tables, and graphs to interpret findings, defend or refute predictions, and draw conclusions • Investigates and evaluates information and arguments from various sources and points of view applying prior knowledge, and inductive and deductive reasoning to establish a personal stance and defend a rationale • Accesses a wide range of resources (print, non-print, and technological) to expand knowledge, conduct research, communicate information, create original works, and investigate complex problems • Designs and applies techniques for investigating real-world issues and problems including; posing questions, hypothesizing, observing, collecting and analyzing data, and communicating findings • Works collaboratively in a group to accomplish a goal by exchanging ideas, synthesizing information, investigating solutions to a problem, sharing workload and completing assigned tasks

Course	Key Projects/Applications	Framework Emphasis	Foundation Skills and Competencies
Transportation Engineering (HS)	• Transportation Systems ○ Automotive & Robotics • Automotive Computer Scan Tool Diagnostics and Troubleshooting • Mitchell On Demand automotive database research and maintenance procedures • The Morgan School Annual Car Show and Food Drive	• Creativity and Innovation • Critical Thinking &Problem Solving • Leadership and Responsibility • Career Awareness	• Listens and views verbal and nonverbal presentations in order to analyze, clarify, follow directions, and ask and answer questions • Accesses a wide range of resources (print, non-print, and technological) to expand knowledge, conduct research, communicate information, create original works, and investigate complex problems • Designs and applies techniques for investigating real world issues and problems, including: posing questions, hypothesizing, observing, collecting and analyzing data, and communicating findings • Works collaboratively in a group to accomplish a goal by exchanging ideas, synthesizing information, investigating solutions to a problem, sharing workload and completing assigned tasks

Course	Key Projects/Applications	Framework Emphasis	Foundation Skills and Competencies
STEM Physics (HS)	• Typical Projects: • Energy Transformation (Motors & Generators) • VEX Robotics • Automotive Computer Scan Tool Diagnostics • Hydropower • Solar Powered projects • Aerodynamics, Wind Tunnel • Design & Build model hydraulic jacks or braking systems • Soda Cooler – Thermodynamic Techniques for Fastest Chilling of a can of soda • Build electrical circuits	• Creativity and Innovation • Critical Thinking &Problem Solving	• Applies computational skills, number sense and mathematical techniques to solve problems and judge reasonableness of results • Designs and applies techniques for investigating real world issues and problems, including: posing questions, hypothesizing, observing, collecting and analyzing data, and communicating findings • Works collaboratively in a group to accomplish a goal by exchanging ideas, synthesizing information, investigating solutions to a problem, sharing workload and completing assigned tasks

	STEM - Transportation Pathway	*Intro to Technology (6)*	*Transportation (7)*	*Computer Aided Design (CAD) (7)*	*RoboLab (7)*	*Innovation & Invention (8)*	*Introduction to Engineering (sem-HS)*	*Transportation Engineering (sem)*	*Design Engineering (year-HS)*	*STEM Physics (year-HS)*
	Creativity & Innovation									
•	Apply a variety of manufacturing techniques and processes to create a usable product					X				
•	Complete a cost estimation					X		X	X	X
•	Define the terms single ownership, company, corporation and partnership					X			X	
•	Describe the universal input, process, output, feedback (IPOF) systems model	X		X		X	X			
•	Design a product based on available materials, tools, and equipment					X			X	X
•	Develop preliminary product layouts	X	X	X	X	X	X	X	X	
•	develop, test and modify a design idea through experimentation	X	X	X	X	X		X	X	X
•	Discuss the influence of enterprise on culture, society and the environment	X	X		X	X	X	X	X	X
•	Develop skills in making wise consumer decisions	X	X	X	X	X		X	X	X
•	Explain the role of creativity in the engineering design process		X	X				X	X	X
•	Explore a variety of creativity-enhancing techniques	X	X	X	X	X		X	X	X
•	Explore techniques used to refine conceptual design sketches		X			X			X	X
•	Identify and evaluate alternative materials		X				X	X	X	X
•	Identify the elements of design	X	X	X	X	X		X	X	X
•	Identify the social and economic impacts of automation and computer controlled processing techniques	X	X			X	X	X	X	X
•	Trace the historical development of at least one technology, identifying its effects and hypothesizing about its future		X			X	X	X	X	X
•	Trace the historical evolution of manufacturing					X			X	
•	Trace the historical evolution of the construction industry						X			
•	Understand the principles of aerodynamics	X	X		X	X		X	X	X
•	Use a variety of creativity enhancing techniques in conceptual design situations	X								
•	Identify and describe the tools, materials and methods used in manufacturing products					X				

STEM - Transportation Pathway		*Intro to Technology (6)*	*Transportation (7)*	*Computer Aided Design (CAD) (7)*	*RoboLab (7)*	*Innovation & Invention (8)*	*Introduction to Engineering (sem-HS)*	*Transportation Engineering (sem)*	*Design Engineering (year-HS)*	*STEM Physics (year-HS)*
	Critical Thinking & Problem Solving									
•	Acquire technology-based information and apply it in classroom and laboratory situations	X	X		X	X	X	X		
•	Analyze a product for its ability to satisfy consumer demands					X	X	X		
•	Define the terms single ownership, company, corporation and partnership					X			X	X
•	Apply a general problem solving model to improve upon an existing product						X	X	X	X
•	Apply appropriate and effective questioning techniques	X				X	X	X	X	X
•	Apply cooperative techniques while engaging in group problem-solving activities					X	X		X	X
•	Apply descriptive statistics of average, percentage correlation, and graphing to design outcomes					X			X	X
•	Apply technological systems to solve a posed problem	X	X		X	X	X	X	X	X
•	Develop skills in making wise consumer decisions					X	X	X	X	X
•	Conduct an applied research project			X					X	X
•	Define decision-making research and innovation	X			X	X				
•	Describe and apply the processes used to make decisions	X					X	X	X	X
•	Describe the evolution of technological enterprise					X				
•	Develop a solution for a real-life problem	X	X	X	X	X	X	X	X	X
•	Develop skills in making wise consumer decisions	X	X	X		X	X	X		
•	Differentiate between human problems and needs	X		X		X				
•	Differentiate between invention and innovation	X				X	X		X	X
•	Discuss how technological systems have been used to solve human problems	X		X		X	X	X	X	X
•	Discuss the differences between problem solving and design strategies	X	X		X			X	X	X
•	Engage in an activity that requires creativity	X	X		X	X	X	X	X	X
•	Evaluate design ideas to determine the most appropriate		X		X	X		X	X	X

STEM - Transportation Pathway		*Intro to Technology (6)*	*Transportation (7)*	*Computer Aided Design (CAD) (7)*	*RoboLab (7)*	*Innovation & Invention (8)*	*Introduction to Engineering (sem-HS)*	*Transportation Engineering (sem)*	*Design Engineering (year-HS)*	*STEM Physics (year-HS)*
	Critical Thinking & Problem Solving									
•	Explain how technology and technological activity has expected and unexpected effects	X	X	X	X	X		X	X	X
•	Identify research methods, materials and techniques	X	X	X	X	X	X	X	X	X
•	Identify the elements of design	X	X	X	X	X	X	X	X	X
•	Prepare and document a design brief	X	X		X	X	X	X	X	X
•	Select appropriate technical processes and fabricate a prototype		X		X	X	X	X	X	X
•	Develop test and modify a design through experimentation		X		X	X	X	X	X	X
•	Develop criteria for evaluating technology	X								

STEM - Transportation Pathway		*Intro to Technology (6)*	*Transportation (7)*	*Computer Aided Design (CAD) (7)*	*RoboLab (7)*	*Innovation & Invention (8)*	*Introduction to Engineering (sem-HS)*	*Transportation Engineering (sem)*	*Design Engineering (year-HS)*	*STEM Physics (year-HS)*
	Interpersonal Communication & Collaboration									
•	Apply techniques of interpersonal and mass communication through activities such as sketching, computer- aided drafting (CAD), photography and video	X		X		X	X	X	X	X
•	Create prototypes of communication instruments in various media	X				X				
•	Define the terms single ownership, company, corporation and partnership	X				X	X	X	X	X
•	Engage in presentation activities	X	X	X	X	X	X	X	X	X
•	Evaluate and select appropriate methods of communication for a given problem or situation	X	X	X	X	X	X	X	X	X
•	Explore and identify the personal, societal, economic and environmental effects of technological systems	X		X		X	X	X	X	X
•	Identify and describe how individual technological innovations may be combined to create new technologies	X		X		X	X	X	X	X
•	Use communications technology to acquire images and information	X	X		X	X	X	X	X	X
•	Develop skills in making wise consumer decisions	X					X			
•	Demonstrate the application of communication techniques and strategies in delivering a message in printed form	X								
•	Identify and give examples of integrated technologies	X								
•	Use communications technology to acquire images and information					X				

STEM - Transportation Pathway		*Intro to Technology (6)*	*Transportation (7)*	*Computer Aided Design (CAD) (7)*	*RoboLab (7)*	*Innovation & Invention (8)*	*Introduction to Engineering (sem-HS)*	*Transportation Engineering (sem)*	*Design Engineering (year-HS)*	*STEM Physics (year-HS)*
	Products & Accountability									
•	Apply the method of line production in the "manufacture" of a simple product.	X				X				
•	Classify raw materials according to their physical and mechanical properties.						X		X	X
•	Define the terms single ownership, company, corporation and partnership	X		X		X	X	X	X	X
•	Demonstrate a working knowledge of the layout, shaping, smoothing, assembly and finishing techniques used to produce a product					X			X	X
•	Demonstrate the appropriate selection, use and safe operation of basic hand and power tools	X					X		X	X
•	describe how a business produces profit			X		X	X	X	X	X
•	describe how products are manufactured	X				X	X		X	X
•	Describe how products are manufactured using the methods of single craftsman, line and mass, and automated robotics manufacturing	X				X	X		X	X
•	Develop skills in making wise consumer decisions	X				X	X	X		
•	Conduct an applied research project	X		X		X	X	X	X	X
•	Define and use the quality control measures of pre -inventory inspection, statistical process control, and total quality management					X				X
•	Produce a product using a simple production sequence: layout, shaping, smoothing, assembly and finishing techniques	X				X				

	STEM - Transportation Pathway	*Intro to Technology (6)*	*Transportation (7)*	*Computer Aided Design (CAD) (7)*	*RoboLab (7)*	*Innovation & Invention (8)*	*Introduction to Engineering (sem-HS)*	*Transportation Engineering (sem)*	*Design Engineering (year-HS)*	*STEM Physics (year-HS)*
	Leadership & Responsibility									
•	Analyze a product for its ability to satisfy consumer demands					X		X	X	
•	Apply organizational skills to classroom and lab activities	X	X		X	X	X	X		
•	Define the terms single ownership, company, corporation and partnership	X	X		X	X	X	X		
•	Consider personal strengths in determining team assignments					X	X	X		
•	Create a simple flowchart of their daily activities	X				X				
•	Demonstrate an ability to take responsibility for their own actions	X	X	X	X	X	X	X	X	X
•	Demonstrate strategies for effectively managing time	X	X		X	X	X	X	X	X
•	Engage in presentation activities					X	X	X	X	X
•	Develop skills in making wise consumer decisions		X	X	X	X	X	X		
•	Identify and demonstrate organizational skills	X	X	X	X	X	X	X		

	STEM - Transportation Pathway	*Intro to Technology (6)*	*Transportation (7)*	*Computer Aided Design (CAD) (7)*	*RoboLab (7)*	*Innovation & Invention (8)*	*Introduction to Engineering (sem-HS)*	*Transportation Engineering (sem)*	*Design Engineering (year-HS)*	*STEM Physics (year-HS)*
	Career Awareness									
•	Calculate the cost of producing a manufactured product and determine a retail price					X	X			
•	Define and demonstrate a personal work ethic	X	X	X	X	X	X	X	X	X
•	Define the terms single ownership, company, corporation and partnership					X	X	X	X	
•	Describe free enterprise	X				X	X			
•	Describe how technological development affects careers and occupations	X	X	X	X	X	X	X	X	X
•	Design a simulated enterprise and participate in a variety of roles within the organization structure					X				
•	Develop a learning portfolio of their areas of experience and expertise					X	X	X	X	X
•	Develop a marketing plan and successfully distribute a product					X				
•	Develop skills in making wise consumer decisions					X	X	X	X	
•	Develop, distribute and evaluate a customer survey					X		X	X	
•	Discuss the influence of enterprise on culture, society and the environment		X		X	X	X	X	X	X
•	Explore career options	X	X	X	X	X	X	X	X	X
•	Explore market research and its relationship to satisfying consumer needs	X				X	X			
•	Identify and categorize careers associated with each of the CT Career Clusters and pathways	X	X		X	X	X	X	X	X
•	Identify expectations in the workplace	X	X	X	X	X	X	X	X	X
•	Identify high school and post-secondary training selections necessary to prepare for a particular career choice	X				X	X	X	X	X
•	Participate in a variety of roles within an organizational structure	X	X		X	X	X	X	X	X
•	Conduct research related careers	X	X		X	X	X	X	X	X

Intro to Tech (Grade 6)

I. Creativity & Innovation

- Describe the universal input, process, output, feedback (IPOF) systems model
- Develop preliminary product layouts
- Develop, test and modify a design idea through experimentation
- Discuss the influence of enterprise on culture, society and the environment.
- Engage in an activity that requires creativity
- Explore a variety of creativity-enhancing techniques
- Identify the elements of design
- Identify the social and economic impacts of automation and computer controlled processing technologies
- Understand the principles of aerodynamics
- Use a variety of creativity enhancing techniques in conceptual design situations

II. Critical Thinking & Problem Solving

- Acquire technology-based information and apply it in classroom and laboratory situations
- Apply appropriate and effective questioning techniques
- Apply technological systems to solve a posed problem
- Define decision-making research and innovation
- Describe and apply the processes used to make decisions
- Develop a solution for a real-life problem
- Develop skills in making wise consumer decisions
- Differentiate between human problems and needs
- Differentiate between invention and innovation
- Discuss how technological systems have been used to solve human problems
- Discuss the differences between problem solving and design strategies
- Engage in an activity that requires creativity
- Explain how technology and technological activity has expected and unexpected effects
- Identify research methods, materials and techniques
- Identify the elements of design
- Prepare and document a design brief
- Develop criteria for evaluating technology

III. Interpersonal Communication & Collaboration

- Apply techniques of interpersonal and mass communication through activities such as sketching, computer- aided drafting (CAD), photography and video
- Create prototypes of communication instruments in various media
- Demonstrate the proper use of the terminology associated with a variety of communication techniques

- Engage in multimedia activities
- Evaluate and select appropriate methods of communication for a given problem or situation
- Explore and identify the personal, societal, economic and environmental effects of technological systems

Intro to Tech (Grade 6)

III. Interpersonal Communication & Collaboration (continued)

- Identify and describe how individual technological innovations may be combined to create new technologies
- Use communications technology to acquire images and information
- Present an idea using multimedia technology
- Demonstrate the application of communication techniques and strategies in delivering a message in printed form
- Identify and give examples of integrated technologies

IV. Products & Accountability

- Apply the method of line production in the "manufacture" of a simple product
- Define basic manufacturing terminology
- Demonstrate the appropriate selection, use and safe operation of basic hand and power tools
- Describe how products are manufactured
- Describe how products are manufactured using the methods of single craftsman, line and mass, and automated robotics manufacturing
- Describe how societies are organized to produce and distribute goods and services in a structured manner
- Use manual and electronic measuring devices accurately
- Produce a product using a simple production sequence: layout, shaping, smoothing, assembly and finishing techniques

V. Leadership & Responsibility

- Apply organizational skills to classroom and lab activities
- Assume appropriate roles within a team environment
- Create a simple flowchart of their daily activities
- Demonstrate an ability to take responsibility for their own actions
- Demonstrate strategies for effectively managing time
- Identify and demonstrate organizational skills

VI. Career Awareness

- Define and demonstrate a personal work ethic
- Describe free enterprise
- Describe how technological development affects careers and occupations
- Explore career options
- Explore market research and its relationship to satisfying consumer needs
- Identify and categorize careers associated with each of the CT Career Clusters and pathways
- Identify expectations in the workplace
- Identify high school and postsecondary training selections necessary to prepare for a particular career choice
- Participate in a variety of roles within an organizational structure.
- Conduct research related to careers

Transportation (Grade 7)

I. Creativity & Innovation

- Develop preliminary product layouts
- develop, test and modify a design idea through experimentation
- Discuss the influence of enterprise on culture, society and the environment
- Engage in an activity that requires creativity
- Explain the role of creativity in the engineering design process
- Explore a variety of creativity-enhancing techniques
- Explore techniques used to refine conceptual design sketches
- Identify and evaluate alternative materials
- Identify the elements of design
- Identify the social and economic impacts of automation and computer controlled processing techniques
- Trace the historical development of at least one technology, identifying its effects and hypothesizing about its future
- Understand the principles of aerodynamics

II. Critical Thinking & Problem Solving

- Acquire technology-based information and apply it in classroom and laboratory situations
- Apply technological systems to solve a posed problem
- Develop a solution for a real-life problem
- Develop skills in making wise consumer decisions
- Discuss the differences between problem solving and design strategies
- Engage in an activity that requires creativity
- Evaluate design ideas to determine the most appropriate
- Explain how technology and technological activity has expected and unexpected effects
- Identify research methods, materials and techniques
- Identify the elements of design
- Prepare and document a design brief
- Select appropriate technical processes and fabricate a prototype
- Develop test and modify a design through experimentation

III. Interpersonal Communication & Collaboration

- Engage in presentation activities
- Evaluate and select appropriate methods of communication for a given problem or situation.
- Use communications technology to acquire images and information

IV. Products & Accountability

Not applicable

V. Leadership & Responsibility

- Apply organizational skills to classroom and lab activities
- Assume appropriate roles within a team environment

Transportation (Grade 7)

V. Leadership & Responsibility (continued)

- Demonstrate an ability to take responsibility for their own actions
- Demonstrate strategies for effectively managing time
- Explore different roles while working cooperatively and effectively in team situations
- Identify and demonstrate organizational skills

VI. Career Awareness

- Define and demonstrate a personal work ethic
- Describe how technological development affects careers and occupations
- Discuss the influence of enterprise on culture, society and the environment
- Explore career options
- Identify and categorize careers associated with each of the CT Career Clusters and pathways
- Identify expectations in the workplace
- Participate in a variety of roles within an organizational structure
- Conduct research related careers

Computer Aided Design (CAD) (Grade 7)

I. Creativity & Innovation

- Describe the universal input, process, output, feedback (IPOF) systems model
- Develop preliminary product layouts
- develop, test and modify a design idea through experimentation
- Engage in an activity that requires creativity
- Explain the role of creativity in the engineering design process
- Explore a variety of creativity-enhancing techniques
- Identify the elements of design

II. Critical Thinking & Problem Solving

- Conduct an applied research project
- Develop a solution for a real-life problem
- Develop skills in making wise consumer decisions
- Differentiate between human problems and needs
- Discuss how technological systems have been used to solve human problems
- Explain how technology and technological activity has expected and unexpected effects
- Identify research methods, materials and techniques
- Identify the elements of design

III. Interpersonal Communication & Collaboration

- Apply techniques of interpersonal and mass communication through activities such as sketching, computer- aided drafting (CAD), photography and video
- Engage in presentation activities
- Evaluate and select appropriate methods of communication for a given problem or situation
- Explore and identify the personal, societal, economic and environmental effects of technological systems
- Identify and describe how individual technological innovations may be combined to create new technologies

IV. Products & Accountability

- Define basic manufacturing terminology
- describe how a business produces profit
- Conduct an applied research project

V. Leadership & Responsibility

- Demonstrate an ability to take responsibility for their own actions
- Explore different roles while working cooperatively and effectively in team situations
- Identify and demonstrate organizational skills

Computer Aided Design (CAD) (Grade 7)

VI. Career Awareness

- Define and demonstrate a personal work ethic.
- Describe how technological development affects careers and occupations.
- Explore career options.
- Identify expectations in the workplace

RoboLab (Grade 7)

I. Creativity & Innovation

- Develop preliminary product layouts
- develop, test and modify a design idea through experimentation
- Discuss the influence of enterprise on culture, society and the environment.
- Engage in an activity that requires creativity
- Explore a variety of creativity-enhancing techniques.
- Identify the elements of design
- Understand the principles of aerodynamics

II. Critical Thinking & Problem Solving

- Acquire technology-based information and apply it in classroom and laboratory situations
- Apply technological systems to solve a posed problem.
- Define decision-making research and innovation.
- Develop a solution for a real-life problem
- Discuss the differences between problem solving and design strategies
- Engage in an activity that requires creativity.
- Evaluate design ideas to determine the most appropriate.
- Explain how technology and technological activity has expected and unexpected effects
- Identify research methods, materials and techniques
- Identify the elements of design
- Prepare and document a design brief
- Select appropriate technical processes and fabricate a prototype

  Develop test and modify a design through experimentation

III. Interpersonal Communication & Collaboration

- Engage in presentation activities.
- Evaluate and select appropriate methods of communication for a given problem or situation.
- Use communications technology to acquire images and information.

IV. Products & Accountability

Not applicable

V. Leadership & Responsibility

- Apply organizational skills to classroom and lab activities.
- Assume appropriate roles within a team environment.
- Demonstrate an ability to take responsibility for their own actions.
- Demonstrate strategies for effectively managing time.
- Explore different roles while working cooperatively and effectively in team situations.
- Identify and demonstrate organizational skills

RoboLab (Grade 7)

VI. Career Awareness

- Define and demonstrate a personal work ethic.
- Describe how technological development affects careers and occupations.
- Discuss the influence of enterprise on culture, society and the environment
- Explore career options.
- Identify and categorize careers associated with each of the CT Career Clusters and pathways
- Identify expectations in the workplace
- Participate in a variety of roles within an organizational structure
- Conduct research related careers

Innovation Invention (Grade 8)

I. Creativity & Innovation

- Apply a variety of manufacturing techniques and processes to create a usable product
- Complete a cost estimation
- Create a simple flow and design chart for the manufacturing of a product
- Describe the universal input, process, output, feedback (IPOF) systems model
- Design a product based on available materials, tools, and equipment
- Develop preliminary product layouts
- Develop, test and modify a design idea through experimentation
- Discuss the influence of enterprise on culture, society and the environment
- Engage in an activity that requires creativity
- Explore a variety of creativity-enhancing techniques
- Explore techniques used to refine conceptual design sketches
- Identify and describe the tools, materials and methods used in manufacturing products;
- Identify the elements of design
- Identify the social and economic impacts of automation and computer controlled processing technologies
- Trace the historical development of at least one technology, identifying its effects and hypothesizing about its future
- Trace the historical evolution of manufacturing
- Understand the principles of aerodynamics

II. Critical Thinking & Problem Solving

- Acquire technology-based information and apply it in classroom and laboratory situations
- Analyze a product for its ability to satisfy consumer demands
- Apply a general problem solving model including research techniques to invent a product
- Apply appropriate and effective questioning techniques
- Apply cooperative techniques while engaging in group problem-solving activities
- Apply descriptive statistics of average, percentage correlation, and graphing to design outcomes
- Apply technological systems to solve a posed problem
- Be familiar with the laws related to copyrights, trademarks and patents
- Define decision-making research and innovation
- Describe the evolution of technological enterprise
- Develop a solution for a real-life problem
- Develop skills in making wise consumer decisions
- Differentiate between human problems and needs
- Differentiate between invention and innovation
- Discuss how technological systems have been used to solve human problems
- Engage in an activity that requires creativity
- Evaluate design ideas to determine the most appropriate
- Explain how technology and technological activity has expected and unexpected effects
- Identify research methods, materials and techniques
- Identify the elements of design
- Prepare and document a design brief

Innovation Invention (Grade 8)

III. Interpersonal Communication & Collaboration

- Apply techniques of interpersonal and mass communication through activities such as sketching, computer- aided drafting (CAD), photography and video
- Create prototypes of communication instruments in various media
- Demonstrate the proper use of the terminology associated with a variety of communication techniques.
- Engage in multimedia presentation activities
- Evaluate and select appropriate methods of communication for a given problem or situation
- Explore and identify the personal, societal, economic and environmental effects of technological systems
- Identify and describe how individual technological innovations may be combined to create new technologies
- Use communications technology to acquire images and information
- Present an idea using multimedia technology

IV. Products & Accountability

- Apply the method of line production in the "manufacture" of a simple product
- Define basic manufacturing terminology
- Demonstrate a working knowledge of the layout, shaping, smoothing, assembly and finishing techniques used to produce a product
- Describe how a business produces profit
- Describe how products are manufactured
- Describe how products are manufactured using the methods of single craftsman, line and mass, and automated robotics manufacturing
- Describe how societies are organized to produce and distribute goods and services in a structured manner
- Use manual and electronic measuring devices accurately
- Define and use the quality control measures of pre -inventory inspection, statistical process control, and total quality management
- Produce a product using a simple production sequence: layout, shaping, smoothing, assembly and finishing techniques

V. Leadership & Responsibility

- Analyze a product for its ability to satisfy consumer demands
- Apply organizational skills to classroom and lab activities
- Assume appropriate roles within a team environment
- Consider personal strengths in determining team assignments
- Create a simple flowchart of their daily activities
- Demonstrate an ability to take responsibility for their own actions
- Demonstrate strategies for effectively managing time
- Engage in presentation activities
- Explore different roles while working cooperatively and effectively in team situations
- Identify and demonstrate organizational skills

Innovation Invention (Grade 8)

VI. Career Awareness

- Calculate the cost of producing a manufactured product and determine a retail price
- Define and demonstrate a personal work ethic
- Define the terms single ownership, company, corporation and partnership
- Describe free enterprise
- Describe how technological development affects careers and occupations
- Design a simulated enterprise and participate in a variety of roles within the organization structure
- Develop a learning portfolio of their areas of experience and expertise
- Develop a marketing plan and successfully distribute a product
- Develop skills in making wise consumer decisions
- Develop, distribute and evaluate a customer survey
- Discuss the influence of enterprise on culture, society and the environment
- Explore career options
- Explore market research and its relationship to satisfying consumer needs
- Explore quality control methods
- Identify and categorize careers associated with each of the CT Career Clusters and pathways
- Identify expectations in the workplace
- Identify high school and postsecondary training selections necessary to prepare for a particular career choice
- Participate in a variety of roles within an organizational structure
- Conduct research related to careers

Intro to Engineering (HS Semester)

I. Creativity & Innovation

- Describe the universal input, process, output, feedback (IPOF) systems model
- Develop preliminary product layouts
- Discuss the influence of enterprise on culture, society and the environment
- Identify and evaluate alternative materials
- Identify the social and economic impacts of automation and computer controlled processing technologies
- Apply technological systems to solve a posed problem
- Trace the historical evolution of the construction industry

II. Critical Thinking & Problem Solving

- Acquire technology-based information and apply it in classroom and laboratory situations
- Analyze a product for its ability to satisfy consumer demands
- Apply a general problem solving model to improve upon an existing product
- Apply appropriate and effective questioning techniques
- Apply cooperative techniques while engaging in group problem-solving activities
- Apply technological systems to solve a posed problem
- Be familiar with the laws related to copyrights, trademarks, and patents
- Describe and apply the processes used to make decisions
- Develop a solution for a real-life problem
- Develop skills in making wise consumer decisions
- Differentiate between invention and innovation
- Discuss how technological systems have been used to solve human problems
- Engage in an activity that requires creativity
- Identify research methods, materials and techniques
- Identify the elements of design
- Prepare and document a design brief
- Select appropriate technical processes and fabricate a prototype
- Develop test and modify a design through experimentation

III. Interpersonl Communication & Collaboration

- Apply techniques of interpersonal and mass communication through activities such as sketching, computer- aided drafting (CAD), photography and video
- Demonstrate the proper use of the terminology associated with a variety of communication techniques
- Engage in multimedia presentation activities
- Evaluate and select appropriate methods of communication for a given problem or situation.
- Explore and identify the personal, societal, economic and environmental effects of technological systems
- Identify and describe how individual technological innovations may be combined to create new technologies
- Use communications technology to acquire images and information
- Present an idea using multimedia technology

Intro to Engineering (HS Semester)

IV. Products & Accountability

- Analyze a product for its ability to satisfy consumer demands
- Describe the evolution of technological enterprise
- Differentiate between human problems and needs
- Differentiate between invention and innovation
- Discuss how technological systems have been used to solve human problems
- Discuss the differences between problem solving and design strategies
- Engage in an activity that requires creativity
- Use manual and electronic measuring devices accurately

V. Leadership & Responsibility

- Apply organizational skills to classroom and lab activities
- Assume appropriate roles within a team environment
- Consider personal strengths in determining team assignments
- Demonstrate an ability to take responsibility for their own actions
- Demonstrate strategies for effectively managing time
- Engage in presentation activities
- Explore different roles while working cooperatively and effectively in team situations
- Identify and demonstrate organizational skills

VI. Career Awareness

- Calculate the cost of producing a manufactured product and determine a retail price
- Define and demonstrate a personal work ethic
- Define the terms single ownership, company, corporation and partnership
- Describe free enterprise
- Describe how technological development affects careers and occupations
- Develop a learning portfolio of their areas of experience and expertise
- Develop skills in making wise consumer decisions
- Discuss the influence of enterprise on culture, society and the environment
- Explore career options
- Explore market research and its relationship to satisfying consumer needs
- Identify and categorize careers associated with each of the CT Career Clusters and pathways
- Identify expectations in the workplace
- Identify high school and postsecondary training selections necessary to prepare for a particular career choice
- Participate in a variety of roles within an organizational structure
- Conduct research related to careers

Transportation Engineering (HS Semester)

I. Creativity & Innovation

- Complete a cost estimation.
- Develop preliminary product layouts
- develop, test and modify a design idea through experimentation
- Discuss the influence of enterprise on culture, society and the environment
- Engage in an activity that requires creativity
- Explain the role of creativity in the engineering design process
- Explore a variety of creativity-enhancing techniques
- Identify and evaluate alternative materials
- Identify the elements of design
- Identify the social and economic impacts of automation and computer controlled processing techniques
- Trace the historical development of at least one technology, identifying its effects and hypothesizing about its future
- Understand the principles of aerodynamics

II. Critical Thinking & Problem Solving

- Acquire technology-based information and apply it in classroom and laboratory situations
- Analyze a product for its ability to satisfy consumer demands
- Apply a general problem solving model to improve upon an existing product
- Apply appropriate and effective questioning techniques
- Apply technological systems to solve a posed problem
- Be familiar with the laws related to copyrights, trademarks, and patents
- Describe and apply the processes used to make decisions
- Develop a solution for a real-life problem
- Develop skills in making wise consumer decisions
- Discuss how technological systems have been used to solve human problems
- Discuss the differences between problem solving and design strategies
- Engage in an activity that requires creativity
- Evaluate design ideas to determine the most appropriate
- Explain how technology and technological activity has expected and unexpected effects
- Identify research methods, materials and techniques
- Identify the elements of design
- Prepare and document a design brief
- Select appropriate technical processes and fabricate a prototype
- Develop test and modify a design through experimentation

III. Interpersonal Communication & Collaboration

- Apply techniques of interpersonal and mass communication through activities such as sketching, computer- aided drafting (CAD), photography and video
- Demonstrate the proper use of the terminology associated with a variety of communication techniques

- Engage in presentation activities

Transportation Engineering (HS Semester)

III. Interpersonal Communication & Collaboration

- Evaluate and select appropriate methods of communication for a given problem or situation
- Explore and identify the personal, societal, economic and environmental effects of technological systems
- Identify and describe how individual technological innovations may be combined to create new technologies
- Use communications technology to acquire images and information
- Present an idea using multimedia technology

IV. Products & Accountability

- Define basic manufacturing terminology
- describe how a business produces profit
- Describe how societies are organized to produce and distribute goods and services in a structured manner
- Conduct an applied research project

V. Leadership & Responsibility

- Analyze a product for its ability to satisfy consumer demands.
- Apply organizational skills to classroom and lab activities.
- Assume appropriate roles within a team environment.
- Consider personal strengths in determining team assignments.
- Demonstrate an ability to take responsibility for their own actions.
- Demonstrate strategies for effectively managing time.
- Engage in presentation activities.
- Explore different roles while working cooperatively and effectively in team situations.
- Identify and demonstrate organizational skills

VI. Career Awareness

- Define and demonstrate a personal work ethic
- define the terms single ownership, company, corporation and partnership
- Describe how technological development affects careers and occupations
- Develop a learning portfolio of their areas of experience and expertise
- develop skills in making wise consumer decisions
- Develop, distribute and evaluate a customer survey
- Discuss the influence of enterprise on culture, society and the environment
- Explore career options
- Identify and categorize careers associated with each of the CT Career Clusters and pathways
- Identify expectations in the workplace
- Identify high school and post-secondary training selections necessary to prepare for a particular career choice
- Participate in a variety of roles within an organizational structure
- Conduct research related careers

Design Engineering (HS Year Long)

I. Creativity & Innovation

- Complete a cost estimation
- Create a simple flow and design chart for the manufacturing of a product
- Design a product based on available materials, tools, and equipment
- Develop preliminary product layouts
- Develop, test and modify a design idea through experimentation
- Discuss the influence of enterprise on culture, society and the environment
- Engage in an activity that requires creativity
- Explain the role of creativity in the engineering design process
- Explore a variety of creativity-enhancing techniques
- Explore techniques used to refine conceptual design sketches
- Identify and evaluate alternative materials
- Identify the elements of design
- Identify the social and economic impacts of automation and computer controlled processing technologies
- Trace the historical development of at least one technology, identifying its effects and hypothesizing about its future
- Trace the historical evolution of manufacturing
- Understand the principles of aerodynamics

II. Critical Thinking & Problem Solving

- Apply a general problem solving model including research techniques to invent a product
- Apply a general problem solving model to improve upon an existing product
- Apply appropriate and effective questioning techniques
- Apply cooperative techniques while engaging in group problem-solving activities
- Apply descriptive statistics of average, percentage correlation, and graphing to design outcomes
- Apply technological systems to solve a posed problem
- Be familiar with the laws related to copyrights, trademarks, and patents
- Conduct an applied research project
- Describe and apply the processes used to make decisions
- Develop a solution for a real-life problem
- Differentiate between invention and innovation
- Discuss how technological systems have been used to solve human problems
- Discuss the differences between problem solving and design strategies
- Engage in an activity that requires creativity
- Evaluate design ideas to determine the most appropriate
- Explain how technology and technological activity has expected and unexpected effects
- Identify research methods, materials and techniques
- Identify the characteristics of sub- and superstructures
- Identify the elements of design
- Prepare and document a design brief
- Select appropriate technical processes and fabricate a prototype
- Develop test and modify a design through experimentation

Design Engineering (HS Year Long)

III. Interpersonal Communication & Collaboration

- Apply techniques of interpersonal and mass communication through activities such as sketching, computer- aided drafting (CAD), photography and video
- Demonstrate the proper use of the terminology associated with a variety of communication techniques
- Engage in multimedia presentation activities
- Evaluate and select appropriate methods of communication for a given problem or situation
- Explore and identify the personal, societal, economic and environmental effects of technological systems
- Identify and describe how individual technological innovations may be combined to create new technologies
- Use communications technology to acquire images and information
- Present an idea using multimedia technology

IV. Products & Accountability

- Classify raw materials according to their physical and mechanical properties
- Define basic manufacturing terminology
- Demonstrate a working knowledge of the layout, shaping, smoothing, assembly and finishing techniques used to produce a product
- Demonstrate the appropriate selection, use and safe operation of basic hand and power tools.
- Describe how a business produces profit
- Describe how products are manufactured
- Describe how products are manufactured using the methods of single craftsman, line and mass, and automated robotics manufacturing
- Use manual and electronic measuring devices accurately
- Define and use the quality control measures of pre -inventory inspection, statistical process control, and total quality management

V. Leadership & Responsibility

- Analyze a product for its ability to satisfy consumer demands
- Demonstrate an ability to take responsibility for their own actions
- Demonstrate strategies for effectively managing time
- Engage in presentation activities

VI. Career Awareness

- Define and demonstrate a personal work ethic
- Define the terms single ownership, company, corporation and partnership
- Describe how technological development affects careers and occupations
- Develop a learning portfolio of their areas of experience and expertise
- Develop skills in making wise consumer decisions
- Develop, distribute and evaluate a customer survey

Design Engineering (HS Year Long)

VI. Career Awareness (continued)

- Discuss the influence of enterprise on culture, society and the environment
- Explore career options.
- Identify and categorize careers associated with each of the CT Career Clusters and pathways
- Identify expectations in the workplace.
- Identify high school and postsecondary training selections necessary to prepare for a particular career choice.
- Participate in a variety of roles within an organizational structure.
- Conduct research related to careers.

Stem Physics (HS Year Long)

I. Creativity & Innovation

- Complete a cost estimation
- Design a product based on available materials, tools, and equipment
- Develop, test and modify a design idea through experimentation
- Discuss the influence of enterprise on culture, society and the environment
- Engage in an activity that requires creativity
- Explain the role of creativity in the engineering design process
- Explore a variety of creativity-enhancing techniques
- Explore techniques used to refine conceptual design sketches
- Identify and evaluate alternative materials
- Identify the elements of design
- Identify the social and economic impacts of automation and computer controlled processing technologies
- Trace the historical development of at least one technology, identifying its effects and hypothesizing about its future
- Understand the principles of aerodynamics

II. Critical Thinking & Problem Solving

- Apply a general problem solving model including research techniques to invent a product
- Apply a general problem solving model to improve upon an existing product
- Apply appropriate and effective questioning techniques
- Apply cooperative techniques while engaging in group problem-solving activities
- Apply descriptive statistics of average, percentage correlation, and graphing to design outcomes
- Apply technological systems to solve a posed problem
- Be familiar with the laws related to copyrights, trademarks, and patents
- Conduct an applied research project
- Describe and apply the processes used to make decisions
- Develop a solution for a real-life problem
- Differentiate between invention and innovation
- Discuss how technological systems have been used to solve human problems
- Discuss the differences between problem solving and design strategies
- Engage in an activity that requires creativity
- Evaluate design ideas to determine the most appropriate
- Explain how technology and technological activity has expected and unexpected effects
- Identify research methods, materials and techniques
- Identify the elements of design
- Prepare and document a design brief
- Select appropriate technical processes and fabricate a prototype
- Develop test and modify a design through experimentation

Stem Physics (HS Year Long)

III. Interpersonal Communication & Collaboration

- Apply techniques of interpersonal and mass communication through activities such as sketching, computer- aided drafting (CAD), photography and video
- Demonstrate the proper use of the terminology associated with a variety of communication techniques
- Engage in multimedia presentation activities
- Evaluate and select appropriate methods of communication for a given problem or situation
- Explore and identify the personal, societal, economic and environmental effects of technological systems
- Identify and describe how individual technological innovations may be combined to create new technologies
- Use communications technology to acquire images and information
- Present an idea using multimedia technology

IV. Products & Accountability

- Classify raw materials according to their physical and mechanical properties
- Define basic manufacturing terminology
- Demonstrate a working knowledge of the layout, shaping, smoothing, assembly and finishing techniques used to produce a product
- Demonstrate the appropriate selection, use and safe oeration of basic hand and power tools
- Describe how a business produces profit
- Describe how products are manufactured
- Describe how products are manufactured using the methods of single craftsman, line and mass, and automated robotics manufacturing
- Use manual and electronic measuring devices accurately
- Define and use the quality control measures of pre -inventory inspection, statistical process control, and total quality management

V. Leadership & Responsibility

- Demonstrate an ability to take responsibility for their own actions
- Demonstrate strategies for effectively managing time
- Engage in presentation activities

VI. Career Awareness

- Define and demonstrate a personal work ethic
- Describe how technological development affects careers and occupations
- Develop a learning portfolio of their areas of experience and expertise
- Discuss the influence of enterprise on culture, society and the environment

Stem Physics (HS Year Long)

VI. Career Awareness (continued)

- Explore career options
- Identify and categorize careers associated with each of the CT Career Clusters and pathways
- Identify expectations in the workplace
- Identify high school and postsecondary training selections necessary to prepare for a particular career choice
- Participate in a variety of roles within an organizational structure.
- Conduct research related to careers

Technology Education

Computer-Aided Design (CAD) Pathway

Computer-Aided Design (CAD) (7)
Architectural Design (8)
Intro to Communications (HS-sem)
Intro to Engineering (HS-sem)
Intro to CAD (HS-sem)
Advanced CAD (HS-sem)

Course	Key Projects/Applications	Framework Emphasis	Foundation Skills and Competencies
Computer Aided Design (CAD) (7)	• Geometric Shapes • Orthographic and Pictorial Drawings • Group Design-"IBM Block" • Mantel Toy Company	• Creativity and Innovation • Critical Thinking and Problem Solving • Leadership and Responsibility • Career Awareness	• Reads a variety of literary, informational, and persuasive texts with understanding, and is able to analyze, interpret, evaluate text, and reads for enjoyment • Applies understanding of a writing process (drafting, revising, editing, and rewriting) to improve writing • 11. Works collaboratively in a group to accomplish a goal by exchanging ideas, synthesizing information, investigating solutions to a problem, sharing workload and completing assigned tasks

Architectural Design (8)	• House Design-3D Drawing
	• Architectural Firm
	  ○ Architect
	  ○ Interior Design
	  ○ Contractor
	  ○ Public Relation Person
	• Architectural EXPO
		• Creativity and Innovation
		• Critical Thinking and Problem Solving
		• Interpersonal Communication and Collaboration
		• Productivity and Accountability
		• Leadership and Responsibility
		• Career Awareness
			• Reads a variety of literary, informational, and persuasive texts with understanding, and is able to analyze, interpret, evaluate text, and reads for enjoyment
			• Applies understanding of a writing process (drafting, revising, editing, and rewriting) to improve writing
			• Applies computational skills, number sense and mathematical techniques to solve problems and judge reasonableness of results
			• Investigates and evaluates information and arguments from various sources and points of view applying prior knowledge, and inductive and deductive reasoning to establish a personal stance and defend a rationale
			• Designs and applies techniques for investigating real-world issues and problems including; posing questions, hypothesizing, observing, collecting and analyzing data, and communicating findings
			• Works collaboratively in a group to accomplish a goal by exchanging ideas, synthesizing information, investigating solutions to a problem, sharing workload and completing assigned tasks

Course	Key Projects/Applications	Framework Emphasis	Foundation Skills and Competencies
Intro to Engineering (HS)	• Inventor or Technology Research • Transportation Systems ○ Automotive & Robotics • Manufacturing Design & Build • Construction Modeling	• Critical Thinking and Problem Solving • Interpersonal Communication and Collaboration • Productivity and Accountability • Leadership and Responsibility • Career Awareness	• Listens and views verbal and nonverbal presentations in order to analyze, clarify, follow directions, and ask and answer questions • Applies computational skills, number sense and mathematical techniques to solve problems and judge reasonableness of results • Delivers oral and visual presentations using standard conventions, forms of expression, coherent sequence of thoughts, suitable vocabulary, and tools appropriate for the purpose and audience • Collects, organizes, and presents data using charts, tables, and graphs to interpret findings, defend or refute predictions, and draw conclusions • Investigates and evaluates information and arguments from various sources and points of view applying prior knowledge, and inductive and deductive reasoning to establish a personal stance and defend a rationale • Accesses a wide range of resources (print, non-print, and technological) to expand knowledge, conduct research, communicate information, create original works, and investigate complex problems • Designs and applies techniques for investigating real-world issues and problems including; posing questions, hypothesizing, observing, collecting and analyzing data, and communicating findings • Works collaboratively in a group to accomplish a goal by exchanging ideas, synthesizing information, investigating solutions to a problem, sharing workload and completing assigned tasks

Course	Key Projects/Applications	Framework Emphasis	Foundation Skills and Competencies
Intro to Communication (HS)	• 45 rpm record • Photoshop Flattery (after) • Cool Glasses • Illustrator Portrait • Turn Car into Showroom Model • 60 Second Advertisement • Intro to Script Building ○ Movie Trailer Script • Stop Motion Animation • Intro to Storyboarding	• Critical Thinking and Problem Solving • Productivity and Accountability	• Reads a variety of literary, informational, and persuasive texts with understanding, and is able to analyze, interpret, evaluate text, and reads for enjoyment • Listens and views verbal and nonverbal presentations in order to analyze, clarify, follow directions, and ask and answer questions • Accesses a wide range of resources (print, non-print, and technological) to expand knowledge, conduct research, communicate information, create original works, and investigate complex problems
Intro to CAD	• Creating Part Drawings • Dimensioning • Working Drawings	• Creativity and Innovation • Critical Thinking and Problem Solving • Productivity and Accountability	• Listens and views verbal and nonverbal presentations in order to analyze, clarify, follow directions, and ask and answer questions • Accesses a wide range of resources (print, non-print, and technological) to expand knowledge, conduct research, communicate information, create original works, and investigate complex problems
Advanced CAD	• Building Assemblies • Working with Assemblies • Exploded Views and Animations	• Creativity and Innovation • Critical Thinking and Problem Solving • Productivity and Accountability	• Listens and views verbal and nonverbal presentations in order to analyze, clarify, follow directions, and ask and answer questions • Accesses a wide range of resources (print, non-print, and technological) to expand knowledge, conduct research, communicate information, create original works, and investigate complex problems

Computer Aided Design (CAD) Pathway		*Computer Aided Design (CAD) (7)*	*Architecturural Design (8)*	*Intro To Communications (HS sem)*	*Intro to Engineering (HS sem)*	*Introduction to CAD (HS sem)*	*Advanced CAD (HS sem)*
	Creativity & Innovation						
•	Complete a cost estimation.		X				
•	Describe the universal input, process, output, feedback (IPOF) systems model	X	X		X		
•	Develop preliminary product layouts	X	X	X	X	X	X
•	Develop, test and modify a design idea through experimentation	X		X			
•	Differentiate between manufacturing and construction systems					X	
•	Discuss the influence of enterprise on culture, society and the environment			X	X		
•	Engage in an activity that requires creativity	X		X			
•	Explain the role of creativity in the engineering design process	X				X	
•	Explore a variety of creativity-enhancing techniques	X		X			
•	Explore techniques used to refine conceptual design sketches		X	X			
•	Identify and describe the tools, materials and methods used in manufacturing products					X	
•	Identify and evaluate alternative materials				X		
•	Identify the elements of design	X		X			
•	Identify the social and economic impacts of automation and computer controlled processing technologies				X		
•	Trace the historical development of at least one technology, identifying its effects and hypothesizing about its future				X		
•	Trace the historical evolution of the construction industry				X		
•	Use a variety of creativity enhancing techniques in conceptual design situations	X		X			
•	Design a product based on available materials, tools and equipment			X			
•	Develop conceptual designs for communications			X			

Computer Aided Design (CAD) Pathway		*Computer Aided Design (CAD) (7)*	*Architecturural Design (8)*	*Intro To Communications (HS sem)*	*Intro to Engineering (HS sem)*	*Introduction to CAD (HS sem)*	*Advanced CAD (HS sem)*
	Creativity & Innovation						
•	Identify and describe the historical innovations in the evolution of communications systems and their impact on soceity			X			

Computer Aided Design (CAD) Pathway		*Computer Aided Design (CAD) (7)*	*Architecturural Design (8)*	*Intro To Communications (HS sem)*	*Intro to Engineering (HS sem)*	*Introduction to CAD (HS sem)*	*Advanced CAD (HS sem)*
	Critical Thinking & Problem Solving						
•	Develop several alternatives design solutions to the same problem			X		X	X
•	Acquire technology-based information and apply it in classroom and laboratory situations			X	X		
•	Analyze a product for its ability to satisfy consumer demands				X		
•	Apply a general problem solving model to improve upon an existing product				X	X	
•	Apply appropriate and effective questioning techniques			X	X		
•	Apply cooperative techniques while engaging in group problem-solving activities			X	X	X	X
•	Apply technological systems to solve a posed problem			X	X	X	X
•	Be familiar with the laws related to copyrights, trademarks, and patents			X	X	X	
•	Conduct an applied research project	X					
•	Describe and apply the processes used to make decisions		X	X	X		
•	Develop a solution for a real-life problem	X	X		X		
•	Develop criteria for evaluating technology	X					
•	Develop skills in making wise consumer decisions	X			X		
•	Differentiate between human problems and needs	X					
•	Discuss how technological systems have been used to solve human problems	X			X		
•	Engage in an activity that requires creativity			X	X	X	X
•	Evaluate design ideas to determine the most appropriate			X		X	
•	Explain how technology and technological activity has expected and unexpected effects	X					
•	Identify appropriate sources of information for research			X		X	X
•	Identify research methods, material and techniques	X		X	X	X	X

Computer Aided Design (CAD) Pathway		*Computer Aided Design (CAD) (7)*	*Architecturural Design (8)*	*Intro To Communications (HS sem)*	*Intro to Engineering (HS sem)*	*Introduction to CAD (HS sem)*	*Advanced CAD (HS sem)*
	Critical Thinking & Problem Solving						
•	Identify the elements of design	X			X		
•	Prepare and document a design brief				X		
•	Present an idea using multimedia technology			X	X	X	X
•	Produce simple products from a variety of materials, using manual and computer- controlled devices				X		
•	Select and apply a general problem-solving model in a laboratory setting	X		X			
•	Select appropriate technical processes and fabricate a prototype			X	X		
•	Use a communication technology to visualize a design idea			X		X	X
•	Develop test and modify a design through experimentation				X		
•	Test a design idea through experimentation			X			
•	Differentiate between invention and innovation				X	X	

Computer Aided Design (CAD) Pathway		*Computer Aided Design (CAD) (7)*	*Architecturural Design (8)*	*Intro To Communications (HS sem)*	*Intro to Engineering (HS sem)*	*Introduction to CAD (HS sem)*	*Advanced CAD (HS sem)*
	Interpersonal Communication & Collaboration						
•	Acquire technology-based information and apply it in classroom and laboratory situations			X			
•	Apply accepted design principals of text and graphics to the layout of printed and electronically published materials	X		X		X	
•	Apply techniques of interpersonal and mass communication through activities such as sketching, computer- aided drafting (CAD), photography and video	X			X		
•	Apply techniques of interpersonal communication in activities			X			
•	Create prototypes of communication instruments in various media			X			
•	Demonstrate skills in selecting and utilizing appropriate communication technology			X			
•	Demonstrate the application of communication techniques and strategies in delivering a message electronically			X			
•	Demonstrate the application of communication techniques and strategies in delivering a message in audio form			X			
•	Demonstrate the application of communication techniques and strategies in delivering a message in printed form			X			
•	Demonstrate the proper use of the terminology associated with a variety of communication techniques			X	X		
•	Describe how products are manufactured	X				X	
•	Engage in presentation activities	X		X	X		
•	Evaluate and select appropriate methods of communication for a given problem or situation	X		X	X		
•	Explore and identify the personal, societal, economic and environmental effects of technological systems	X			X		

Computer Aided Design (CAD) Pathway		*Computer Aided Design (CAD) (7)*	*Architecturural Design (8)*	*Intro To Communications (HS sem)*	*Intro to Engineering (HS sem)*	*Introduction to CAD (HS sem)*	*Advanced CAD (HS sem)*
	Interpersonal Communication & Collaboration						
•	Identify and describe how individual technological innovations may be combined to create new technologies	X			X		
•	Operate and apply appropriate electronic communication technology to processing, transmitting, receiving, and organizing information			X			
•	Send and access information through a network			X			
•	Trace the production of a piece of communication media from its inception to use			X			
•	Use communications technology to acquire images and information			X	X		
•	Design and produce a multimedia presentation			X			
•	Explore a variety of technological devices used for communication			X			
•	identify and give examples of integrated technologies			X			
•	Present an idea using multimedia technology			X			

Computer Aided Design (CAD) Pathway		*Computer Aided Design (CAD) (7)*	*Architecturural Design (8)*	*Intro To Communications (HS sem)*	*Intro to Engineering (HS sem)*	*Introduction to CAD (HS sem)*	*Advanced CAD (HS sem)*
	Products & Accountability						
•	Define basic manufacturing terminology.	X	X	X	X	X	X
•	Demonstrate a working knowledge of the layout, shaping, smoothing, assembly, and finish techniques used to produce a product						X
•	Describe how a business produces profit	X			X		
•	Describe how products are manufactured.				X		
•	Explore pre-production and post-production processes			X			
•	Explore the principles of computer-controlled processing techniques					X	X
•	Participate in determining manufacturing process selection for a particular product part					X	X
•	Produce products from a variety of materials using manual and computer controlled devices	X				X	
•	Use manual and electronic measuring devices accurately	X	X	X	X	X	X
•	Classify raw materials according to their physical and mechanical properties				X		
•	Demonstrate the appropriate selection, use and safe operation of basic hand and power tools				X		
•	Describe how products are manufactured using the methods of single craftsman, line and mass, and automated robotics manufacturing				X		
•	Demonstrate safe and accurate use of tools, production systems and materials to create a finished product			X			
•	Describe how societies are organized to produce and distribute goods and services in a structured manner				X		

Computer Aided Design (CAD) Pathway		*Computer Aided Design (CAD) (7)*	*Architecturural Design (8)*	*Intro To Communications (HS sem)*	*Intro to Engineering (HS sem)*	*Introduction to CAD (HS sem)*	*Advanced CAD (HS sem)*
	Leadership & Responsibility						
•	Apply organizational skills to classroom and lab activities			X	X		
•	Assume appropriate roles within a team environment				X		
•	Consider personal strengths in determining team assignments			X	X		
•	Demonstrate an ability to take responsibility for their own actions	X	X	X	X	X	X
•	Demonstrate an application of the elements of interpersonal communication			X			
•	Demonstrate organizational skills through planning for task completion over several weeks						X
•	Engage in presentation activities		X	X	X		
•	Explore different roles while working cooperatively and effectively in team situations	X	X	X	X		
•	Identify and demonstrate organizational skills	X	X	X	X	X	X
•	Present information in a clear, concise, and appropriate manner to a variety of audiences		X	X			
•	Demonstrate strategies for assuming responsibility in a cooperative activity in class			X			
•	Demonstrate strategies for effectively managing time over several class periods			X			
•	Demonstrate strategies for effectively managing time			X	X		
•	Develop organizational skills through practical experiences			X			
•	Engage in presentation activity using some visual aid			X			
•	Explore different roles while working cooperatively and effectively in team situations				X		

Computer Aided Design (CAD) Pathway		*Computer Aided Design (CAD) (7)*	*Architecturural Design (8)*	*Intro To Communications (HS sem)*	*Intro to Engineering (HS sem)*	*Introduction to CAD (HS sem)*	*Advanced CAD (HS sem)*
	Career Awareness						
•	Calculate the cost of producing a manufactured product and determine a retail price				X		
•	Define and demonstrate a personal work ethic	X	X	X	X	X	X
•	Define the terms single ownership, company, corporation and partnership				X		
•	Demonstrate awareness of changes in job requirements over time	X		X			
•	Describe free enterprise				X		
•	Describe how technological development affects careers and occupations	X		X	X		
•	Develop a learning portfolio of their areas of experience and expertise			X	X		
•	Develop skills in making wise consumer decisions				X		
•	Discuss the influence of enterprise on culture, society and the environment				X		
•	Explore career options	X		X	X		
•	Explore market research and its relationship to satisfying consumer needs				X		
•	Identify and categorize careers associated with each of the CT Career Clusters and pathways			X	X		
•	Identify expectations in the workplace	X		X	X		
•	Identify high school and postsecondary training selections necessary to prepare for a particular career choice			X	X		
•	Participate in a variety of roles within an organizational structure				X		
•	Prepare a preliminary career plan with connections to high school course selections	X		X			
•	Conduct research related to careers				X		
•	Exhibit appropriate behavior in both school and work situations			X			
•	Explore the career possibilities and responsibilities in enterprise			X			

Computer Aided Design (Grade 7)

I. Creativity & Innovation

- Describe the universal input, process, output, feedback (IPOF) systems model
- Develop preliminary product layouts
- Develop, test and modify a design idea through experimentation
- Engage in an activity that requires creativity
- Explain the role of creativity in the engineering design process
- Explore a variety of creativity-enhancing techniques
- Identify the elements of design
- Use a variety of creativity-enhancing techniques in conceptual deisgn situations

II. Critical Thinking & Problem Solving

- Conduct an applied research project
- Develop a solution for a real-life problem
- Develop criteria for evaluating technology
- Develop skills in making wise consumer decisions
- Differentiate between human problems and needs
- Discuss how technological systems have been used to solve human problems
- Explain how technology and technological activity has expected and unexpected effects
- Identify research methods, material and techniques
- Identify the elements of design
- Select and apply a general problem-solving model in a laboratory setting

III. Interpersonal Communication & Collaboration

- Apply accepted design principals of text and graphics to the layout of printed and electronically published materials
- Apply techniques of interpersonal and mass communication through activities such as sketching, computer-aided drafting, photography and video
- Describe how products are manufactured
- Engage in presentation activities
- Evaluate and select appropriate methods of cummunication for a given problem or situation
- Explore and identify the personal, societal, economic and environmental effects of technological systems
- Identify and describe how individual technological innovations may be combined to create new technologies

IV. Products & Accountability

- Define basic manufacturing terminology
- Describe how a business produces profit
- Produce products from a variety of materials using manual and computer controlled devices
- Use manual and electronic measuring devices accurately

Computer Aided Design (Grade 7)

V. Leadership & Responsibility

- Demonstrate an ability to take responsibility for their own actions
- Explore different roles while working cooperatively and effectively in team situations
  Identify and demonstrate organizational skills

VI. Career Awareness

- Define and demonstrate a personal work ethic
  Demonstrate awareness of changes in job requirements over time
  Describe how technological development affects careers and occupations
  Explore career options
  Identify expectations in the workplace
  Prepare a preliminary career plan with connections to high school course selections

Architectural Design (Grade 8)

I. Creativity & Innovation

- Discuss the influence of enterprise on culture, society and the environment
- Engage in an activity that requires creativity
- Identify the elements of design

II. Critical Thinking & Problem Solving

- Apply technological systems to solve a posed problem
- Develop a solution for a real-life problem
- Engage in an activity that requires creativity
- Evaluate design ideas to determine the most appropriate
- Identify the elements of design

III. Interpersonal Communication & Collaboration

- Apply techniques of interpersonal and mass communication through activities such as sketching, computer-aided drafting (CAD), photography and video
- Present an idea using multimedia technology

IV. Products & Accountability

Not applicable

V. Leadership & Responsibility

- Demonstrate an ability to take responsibility for their own actions
- Demonstrate strategies for effectively managing time
- Engage in presentation activities

VI. Career Awareness

- Define and demonstrate a personal work ethic
- Explore career options
- Identify and categorize careers associated with each of the CT Career Clusters and pathways
- Identify expectations in the workplace
- Identify high school and postsecondary training selections necessary to prepare for a particular career choice
- Participate in a variety of roles within an organizational structure.
- Conduct research related to careers

Intro to Communications (HS Semester)

I. Creativity & Innovation

- Design a product based on available materials, tools, and equipment
- Develop conceptual designs for communications
- Develop preliminary product layouts
- Develop, test and modify a design idea through experimentation
- Discuss the influence of enterprise on culture, society and the environment
- Engage in an activity that requires creativity
- Explore a variety of creativity-enhancing techniques
- Explore techniques used to refine conceptual design sketches
- Identify and describe the historical innovations in the evolution of communications systems and their impact on society
- Identify the elements of design
- Use a variety of creativity enhancing techniques in conceptual design situations

II. Critical Thinking & Problem Solving

- Develop several alternatives design solutions to the same problem
- Acquire technology-based information and apply it in classroom and laboratory situations
- Apply cooperative techniques while engaging in group problem-solving activities
- Apply technological systems to solve a posed problem
- Be familiar with the laws related to copyrights, trademarks, and patents
- Describe and apply the processes used to make decisions
- Engage in an activity that requires creativity
- Evaluate design ideas to determine the most appropriate
- Identify appropriate sources of information for research
- Identify research methods, material and techniques
- Select appropriate technical processes and fabricate a prototype
- Test a design idea through experimentation
- Use a communication technology to visualize a design idea
- Apply appropriate and effective questioning techniques

III. Interpersonal Communication & Collaboration

- Acquire technology-based information and apply it in classroom and laboratory situations
- Apply accepted design principals of text and graphics to the layout of printed and electronically published materials
- Apply techniques of interpersonal communication in activities
- Create prototypes of communication instruments in various media
- Demonstrate the application of communication techniques and strategies in delivering a message electronically
- Demonstrate the application of communication techniques and strategies in delivering a message in audio form
- Demonstrate the application of communication techniques and strategies in delivering a message in printed form

Intro to Communications (HS Semester)

III. Interpersonal Communication & Collaboration (continued)

- Demonstrate the proper use of the terminology associated with a variety of communication techniques
- Design and produce a multimedia presentation
- Engage in presentation activities
- Explore a variety of technological devices used for communication
- Identify and give examples of integrated technologies
- Operate and apply appropriate electronic communication technology to processing, transmitting, receiving, and organizing information
- Trace the production of a piece of communication media from its inception to use
- Use communications technology to acquire images and information
- Present an idea using multimedia technology
- Demonstrate skills in selecting and utilizing appropriate communication technology
- Evaluate and select appropriate methods of communication for a given problem or situation
- Send and access information through a network

IV. Products & Accountability

- Demonstrate safe and accurate use of tools, production systems and materials to create a finished product
- Explore pre-production and post-production processes
- Use manual and electronic measuring devices accurately

V. Leadership & Responsibility

- Apply organizational skills to classroom and lab activities
- Consider personal strengths in determining team assignments
- Demonstrate an ability to take responsibility for their own actions
- Demonstrate strategies for assuming responsibility in a cooperative activity in class
- Demonstrate strategies for effectively managing time over several class periods
- Demonstrate strategies for effectively managing time
- Develop organizational skills through practical experiences
- Engage in presentation activities
- Engage in presentation activity using some visual aid
- Explore different roles while working cooperatively and effectively in team situations
- Identify and demonstrate organizational skills
- Present information in an appropriate manner

VI. Career Awareness

- Define and demonstrate a personal work ethic.
- Demonstrate awareness of changes in job requirements over time.
- Describe how technological development affects careers and occupations.
- Develop a learning portfolio of their areas of experience and expertise.
- Exhibit appropriate behavior in both school and work situations.

Intro to Communications (HS Semester)

VI. Career Awareness (continued)

- Explore career options
- Explore the career possibilities and responsibilities in enterprise
- Identify and categorize careers associated with each of the CT Careeer Clusters
- Identify expectations in the workplace
- Identify high school and postsecondary training selections necessary to prepare for a particular career choice
- Prepare a preliminary career plan with connections to high school course selections

Intro to Engineering (HS Semester)

I. Creativity & Innovation

- Describe the universal input, process, output, feedback (IPOF) systems model
- Develop preliminary product layouts
- Discuss the influence of enterprise on culture, society and the environment.
- Identify and evaluate alternative materials
- Identify the social and economic impacts of automation and computer controlled processing technologies
- Apply technological systems to solve a posed problem
- Trace the historical evolution of the construction industry

II. Critical Thinking & Problem Solving

- Acquire technology-based information and apply it in classroom and laboratory situations.
- Analyze a product for its ability to satisfy consumer demands
- Apply a general problem solving model to improve upon an existing product
- Apply appropriate and effective questioning techniques
- Apply cooperative techniques while engaging in group problem-solving activities
- Apply technological systems to solve a posed problem
- Be familiar with the laws related to copyrights, trademarks, and patents.
- Describe and apply the processes used to make decisions
- Develop a solution for a real-life problem
- Develop skills in making wise consumer decisions
- Differentiate between invention and innovation
- Discuss how technological systems have been used to solve human problems
- Engage in an activity that requires creativity
- Identify research methods, materials and techniques
- Identify the elements of design
- Prepare and document a design brief
- Select appropriate technical processes and fabricate a prototype
- Develop test and modify a design through experimentation

III. Interpersonl Communication & Collaboration

- Apply techniques of interpersonal and mass communication through activities such as sketching, computer- aided drafting (CAD), photography and video
- Demonstrate the proper use of the terminology associated with a variety of communication techniques
- Engage in multimedia presentation activities
- Evaluate and select appropriate methods of communication for a given problem or situation
- Explore and identify the personal, societal, economic and environmental effects of technological systems
- Identify and describe how individual technological innovations may be combined to create new technologies
- Use communications technology to acquire images and information
- Present an idea using multimedia technology

Intro to Engineering (HS Semester)

IV. Products & Accountability

- Analyze a product for its ability to satisfy consumer demands
- Describe the evolution of technological enterprise
- Differentiate between human problems and needs
- Differentiate between invention and innovation
- Discuss how technological systems have been used to solve human problems
- Discuss the differences between problem solving and design strategies
- Engage in an activity that requires creativity
- Use manual and electronic measuring devices accurately

V. Leadership & Responsibility

- Apply organizational skills to classroom and lab activities
- Assume appropriate roles within a team environment
- Consider personal strengths in determining team assignments
- Demonstrate an ability to take responsibility for their own actions
- Demonstrate strategies for effectively managing time
- Engage in presentation activities
- Explore different roles while working cooperatively and effectively in team situations
- Identify and demonstrate organizational skills

VI. Career Awareness

- Calculate the cost of producing a manufactured product and determine a retail price
- Define and demonstrate a personal work ethic
- Define the terms single ownership, company, corporation and partnership
- Describe free enterprise
- Describe how technological development affects careers and occupations
- Develop a learning portfolio of their areas of experience and expertise
- Develop skills in making wise consumer decisions
- Discuss the influence of enterprise on culture, society and the environment
- Explore career options
- Explore market research and its relationship to satisfying consumer needs
- Identify and categorize careers associated with each of the CT Career Clusters and pathways
- Identify expectations in the workplace
- Identify high school and postsecondary training selections necessary to prepare for a particular career choice
- Participate in a variety of roles within an organizational structure
- Conduct research related to careers

Intro to CAD (HS Semester)

I. Creativity & Innovation

- Develop preliminary product layouts
- Differentiate between manufacturing and construction systems
- Explain the role of creativity in the engineering design process
- Identify and describe the tools, materials and methods used in manufacturing products

II. Critical Thinking & Problem Solving

- Develop several alternative design solutions to the same problem
- Apply a general problem solving model to improve upon an existing product
- Apply cooperative techniques while engaging in group problem-solving activities
- Apply technological systems to solve a posed problem
- Be familiar with laws related to copyrights, trademarks and patents
- Engage in an activity that requires creativity
- Evaluate design ideas to determine the most appropriate
- Identify appropriate sources of information for research
- Identify research methods, material and techniques
- Present an idea using multimedia technology
- Use a communication technology to visualize a design idea
- Differentiate between invention and innovation

III. Interpersonal Communication & Collaboration

- Apply accepted design principals of text and graphics to the layout of printed and electronically published materials
- Describe how products are manufactured

IV. Products & Accountability

- Define basic manufacturing terminology
- Explore the principles of computer-controlled processing techniques
- Participate in determining manufacturing process selection for a particular product part
- Produce products from a variety of materials using manual and computer controlled devices
- Use manual and electronic measuring devices accurately

V. Leadership & Responsibility

- Demonstrate an ability to take responsibility for their own actions
- Identify and demonstrate organizational skills

VI. Career Awareness

- Define and demonstrate a personal work ethic

Advanced CAD (High School Semester)

I. Creativity & Innovation

- Develop preliminary product layouts

II. Critical Thinking & Problem Solving

- Develop several alternative design solutions to the same problem
- Apply cooperative techniques while engaging in group problem-solving activities
- Apply technological systems to solve a posed problem
- Engage in an activity that requires creativity
- Identify appropriate sources of information for research
- Identify research methods, material and techniques
- Present an idea using multimedia technology
- Use a communication technology to visualize a design idea

III. Interpersonal Communication & Collaboration

Not applicable

IV. Products & Accountability

- Define basic manufacturing terminology
- Demonstrate a working knowledge of the layout, shaping, smoothing, assembly, and finish techniques used to produce a product
- Explore the principles of computer-controlled processing techniques
- Participate in determining manufacturing process selection for a particular product part
- Use manual and electronic measuring devices accurately

V. Leadership & Responsibility

- Demonstrate an ability to take responsibility for their own actions
- Demonstrate organizational skills through planning for task completion over several weeks.
- Identify and demonstrate organizational skills

VI. Career Awareness

- Define and demonstrate a personal work ethic

Instructional Support

Assessment

Appendix