



Rochester City School District
Career and Technical Education Program
Scope and Sequence
Class: City Living- Technological Literacy

Time Frame Unit of Study	Essential Questions	Learning Targets (Knowledge and Skills)	Assessments	Standards	Resources
Introduction City Living Course	<input type="checkbox"/> How is eLearning accessed and integrated into the City Living course? <input type="checkbox"/> What is Technology? <input type="checkbox"/> When did technology become part of our lives? <input type="checkbox"/> Can you survive a day without technology? <input type="checkbox"/> What are your favorite technologies? <input type="checkbox"/> Why is Rochester known as a city of innovation?	<input type="checkbox"/> Access district email. <input type="checkbox"/> Access google drive account. <input type="checkbox"/> Establish a shared google folder to submit course work. <input type="checkbox"/> Login to eLearning classroom. <input type="checkbox"/> Complete RCSD eLearning tutorial activities. <input type="checkbox"/> Define Technology. <input type="checkbox"/> Compare the evolution of human made technology.	<input type="checkbox"/> RCSD created course activities <input type="checkbox"/> Favorite technology activity <input type="checkbox"/> Student presentation	<input type="checkbox"/> MST 1 <input type="checkbox"/> MST 5 <input type="checkbox"/> MP1 <u>Make sense of problems and persevere in solving them.</u> <input type="checkbox"/> MP3 <u>Construct viable arguments and critique the reasoning of others</u> <input type="checkbox"/> MP5 <u>Use Appropriate Tools Strategically</u>	<input type="checkbox"/> Computers with internet accessibility.

<p>Unit 1 Design Process</p>	<ul style="list-style-type: none"> <input type="checkbox"/> What is a Design? <input type="checkbox"/> What is Problem Solving? <input type="checkbox"/> What is the benefit of developing multiple solutions to a problem? <input type="checkbox"/> What is Brainstorming? <input type="checkbox"/> What is Troubleshooting? <input type="checkbox"/> What is the engineering design process? <input type="checkbox"/> How is evaluation critical to success? <input type="checkbox"/> What are the steps in the Engineering Design Process? <input type="checkbox"/> How is the engineering design process used in problem solving? 	<ul style="list-style-type: none"> <input type="checkbox"/> Compare and contrast inventions and innovations <input type="checkbox"/> Identify and define the terminology used in the engineering design process. <input type="checkbox"/> Describe each of the steps in the engineering design process <input type="checkbox"/> Conduct research in order to gain reliable factual information <input type="checkbox"/> Effectively develop solutions while considering <input type="checkbox"/> Collaborate with team members to work towards solving design challenges <input type="checkbox"/> Complete a design challenge using the engineering design process to design the solution based on specific design requirements. <input type="checkbox"/> Analyze and evaluate constructed prototypes in order to make changes and improvements to the design 	<ul style="list-style-type: none"> <input type="checkbox"/> Newspaper tower challenge <input type="checkbox"/> Tennis ball tower project <input type="checkbox"/> Technology in the news activity <input type="checkbox"/> Teacher created unit assessments. 	<ul style="list-style-type: none"> <input type="checkbox"/> MST 1 <input type="checkbox"/> MST 2 <input type="checkbox"/> MST 5 <input type="checkbox"/> MST 6 <input type="checkbox"/> MP1 <p><u>Make sense of problems and persevere in solving them.</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> MP3 <p><u>Construct viable arguments and critique the reasoning of others</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> MP5 <p><u>Use Appropriate Tools Strategically</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> MP 4 <p><u>Model with mathematics</u></p>	<ul style="list-style-type: none"> <input type="checkbox"/> Computers with internet accessibility.
<p>Unit 2 Technical Sketching and Drawing</p>	<ul style="list-style-type: none"> <input type="checkbox"/> How are design solution ideas shared with someone that is unfamiliar with the original problem? <input type="checkbox"/> What information is included in a technical drawing? 	<ul style="list-style-type: none"> <input type="checkbox"/> Create multiple ideas or solutions to a problem through brainstorming. <input type="checkbox"/> Identify and define features on a technical drawing <input type="checkbox"/> Identify the standard line types present on a technical drawing. <input type="checkbox"/> Determine the views necessary 	<ul style="list-style-type: none"> <input type="checkbox"/> Completed technical drawings and sketches. <input type="checkbox"/> Teacher created unit assessments. 	<ul style="list-style-type: none"> <input type="checkbox"/> MST 2 <input type="checkbox"/> MST 3 <input type="checkbox"/> MST 5 <input type="checkbox"/> MP3 <p><u>Construct viable arguments and critique the reasoning of others</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> MP 4 <p><u>Model with mathematics</u></p>	<ul style="list-style-type: none"> <input type="checkbox"/> Computers with internet accessibility.

	<input type="checkbox"/> What are the industry standard viewpoints of a solid model? <input type="checkbox"/> How are features on a technical drawing labeled? <input type="checkbox"/> What are the benefits of creating a prototype using CAD software?	<p>to identify the features of the solution.</p> <input type="checkbox"/> Hand sketch isometric and orthographic views of an identified object. <input type="checkbox"/> Create drawings that represent ideas and/or physical objects. <input type="checkbox"/> Develop sketches that communicate design ideas to team members. <input type="checkbox"/> Create technical drawings using CAD software. <input type="checkbox"/> Create a multiple component assembly using CAD software.		<input type="checkbox"/> MP5 <u>Use Appropriate Tools Strategically</u> <input type="checkbox"/> MP 6 <u>Attend to Precision</u>	
Unit 3 Energy and Power	<input type="checkbox"/> What are the types of energy? <input type="checkbox"/> Which resources are consumed to create energy? <input type="checkbox"/> How are natural resources obtained? <input type="checkbox"/> How is electricity produced? <input type="checkbox"/> How has electricity changed our world? <input type="checkbox"/> Which electricity production methods occur in New York? <input type="checkbox"/> What are the	<input type="checkbox"/> Describe the major types of energy. <input type="checkbox"/> Describe the similarities and differences between kinetic and potential energies. <input type="checkbox"/> Distinguish between the conventional methods of electricity production. <input type="checkbox"/> Identify the benefits and consequences of energy production. <input type="checkbox"/> Explore existing alternative energy production methods. <input type="checkbox"/> Research emerging renewable methods to produce electricity. <input type="checkbox"/> Differentiate how energy is produced in different geographical locations.	<input type="checkbox"/> Teacher created unit assessments. <input type="checkbox"/> Technology in the news activities. <input type="checkbox"/> Alternative energy project. <input type="checkbox"/> Student presentation.	<input type="checkbox"/> MST 1 <input type="checkbox"/> MST 2 <input type="checkbox"/> MST 4 <input type="checkbox"/> MST 5 <input type="checkbox"/> MST 6 <input type="checkbox"/> MST 7 <input type="checkbox"/> MP3 <u>Construct viable arguments and critique the reasoning of others</u> <input type="checkbox"/> MP 4 <u>Model with mathematics</u>	<input type="checkbox"/> Computers with internet accessibility.

	<p>benefits and challenges of alternative energy sources?</p> <ul style="list-style-type: none"> <input type="checkbox"/> What safety procedures apply specifically to energy industries? <input type="checkbox"/> What are the different employment roles that exist within the Energy sector? <input type="checkbox"/> What impact do alternative power sources have on a city? <input type="checkbox"/> What employment opportunities exist within the energy sector? 	<ul style="list-style-type: none"> <input type="checkbox"/> Locate renewable energy production around Rochester <input type="checkbox"/> Understand the concept of the System Model and the interrelation between areas of technology. <input type="checkbox"/> Locate resources in Rochester to develop skills necessary to become employed in the Energy sector. <input type="checkbox"/> Identify various career paths within the Energy industry. 			
<p>Unit 4 Construction</p>	<ul style="list-style-type: none"> <input type="checkbox"/> What is Construction? <input type="checkbox"/> What are the different classifications of construction? <input type="checkbox"/> How is construction a result of a creative act? <input type="checkbox"/> What role does design have in construction? <input type="checkbox"/> How is technical 	<ul style="list-style-type: none"> <input type="checkbox"/> Define construction. <input type="checkbox"/> Differentiate between Commercial, Industrial and Residential construction. <input type="checkbox"/> Describe the components that all buildings share. <input type="checkbox"/> Identify how design is integral to the construction industry. <input type="checkbox"/> Describe how architecture defines a city? <input type="checkbox"/> Select appropriate materials to best meet the needs of a 	<ul style="list-style-type: none"> <input type="checkbox"/> Teacher created unit assessments. <input type="checkbox"/> Technology in the news activities.(4) <input type="checkbox"/> Construction project. <input type="checkbox"/> Future cities activity. <input type="checkbox"/> Student presentation. 	<ul style="list-style-type: none"> <input type="checkbox"/> MST 1 <input type="checkbox"/> MST 2 <input type="checkbox"/> MST 3 <input type="checkbox"/> MST 4 <input type="checkbox"/> MST 5 <input type="checkbox"/> MST 6 <input type="checkbox"/> MST 7 <input type="checkbox"/> MP1 <p><u>Make sense of problems and persevere in solving them.</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> MP3 <p><u>Construct viable arguments and critique the reasoning of others</u></p>	<ul style="list-style-type: none"> <input type="checkbox"/> Computers with internet accessibility.

	<p>drawing integrated throughout construction trades?</p> <ul style="list-style-type: none"> <input type="checkbox"/> What types of materials are used in construction? <input type="checkbox"/> What are the different employment roles that exist within the Construction discipline? <input type="checkbox"/> What safety procedures apply specifically to the construction industry? 	<p>project.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Identify design constraints in construction projects. <input type="checkbox"/> Create a blueprint. <input type="checkbox"/> Analyze the impacts of construction on the environment. <input type="checkbox"/> Compare the variety of architecture existing in Rochester. <input type="checkbox"/> Identify construction projects around Rochester. <input type="checkbox"/> Develop ideas to improve our existing infrastructure to benefit the citizens of rochester. <input type="checkbox"/> Assess the positive and negative impacts construction has on the community. <input type="checkbox"/> Locate resources in Rochester to develop skills necessary to become employed in the Construction sector. <input type="checkbox"/> Identify various career paths within the Construction industry. 		<ul style="list-style-type: none"> <input type="checkbox"/> MP5 <p><u>Use Appropriate Tools Strategically</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> MP 4 <p><u>Model with mathematics</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> 	
<p>Unit 5 Manufacturing</p>	<ul style="list-style-type: none"> <input type="checkbox"/> What is Manufacturing? <input type="checkbox"/> How has manufacturing been critical to the development of Rochester? 	<ul style="list-style-type: none"> <input type="checkbox"/> Define Manufacturing. <input type="checkbox"/> Describe which types of products are produced by manufacturing. <input type="checkbox"/> Identify the types of manufacturing industries in Rochester. 	<ul style="list-style-type: none"> <input type="checkbox"/> Teacher created unit assessments. <input type="checkbox"/> Technology in the news activities. <input type="checkbox"/> Alternative energy project. 	<ul style="list-style-type: none"> <input type="checkbox"/> MST 1 <input type="checkbox"/> MST 2 <input type="checkbox"/> MST 5 <input type="checkbox"/> MST 6 <input type="checkbox"/> MST 7 <input type="checkbox"/> MP1 <p><u>Make sense of problems and persevere in solving</u></p>	<ul style="list-style-type: none"> <input type="checkbox"/> Computers with internet accessibility.

	<ul style="list-style-type: none"> <input type="checkbox"/> How has manufacturing impacted society? <input type="checkbox"/> What different types of manufacturing exist? <input type="checkbox"/> How is manufacturing an evolutionary technology? <input type="checkbox"/> What are the benefits and consequences of manufacturing? <input type="checkbox"/> How does manufacturing impact our daily lives? <input type="checkbox"/> How has manufacturing changed the role of the skilled worker? <input type="checkbox"/> What safety procedures exist within the manufacturing industry? <input type="checkbox"/> What different employment roles exist within the manufacturing industry? 	<ul style="list-style-type: none"> <input type="checkbox"/> Describe the impact of manufacturing on Rochester. <input type="checkbox"/> Describe the benefits/consequences of manufacturing on skilled workers. <input type="checkbox"/> Predict how manufacturing will evolve in the next 10 years. <input type="checkbox"/> Investigate how manufacturing impacts the environment. <input type="checkbox"/> Assess the positive and negative impacts manufacturing has on the community. <input type="checkbox"/> Locate resources in Rochester to develop skills necessary to become employed in the Manufacturing sector. <input type="checkbox"/> Identify various career paths within the Manufacturing industry. 	<ul style="list-style-type: none"> <input type="checkbox"/> Student presentation. <p style="text-align: center;">Examples</p> <ul style="list-style-type: none"> <input type="checkbox"/> 3D Print Project (Dice, Fidget Spinner, etc) <input type="checkbox"/> Mass Production Project <input type="checkbox"/> Business Partners Field Trips 	<p><u>them.</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> MP3 <p><u>Construct viable arguments and critique the reasoning of others</u></p>	
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<p>Unit 6</p> <p>Transportation</p>	<ul style="list-style-type: none"> <input type="checkbox"/> What is Transportation? <input type="checkbox"/> What role has Transportation had in the development of Rochester? <input type="checkbox"/> How does Transportation impact society? <input type="checkbox"/> What are the different types of Transportation? <input type="checkbox"/> How is Transportation evolutionary? <input type="checkbox"/> What are the benefits and consequences of Transportation? <input type="checkbox"/> How does Transportation have an impact our daily lives? <input type="checkbox"/> What safety procedures are unique within the Transportation industry? <input type="checkbox"/> What different employment roles exist within the Transportation industry? 	<ul style="list-style-type: none"> <input type="checkbox"/> Define Transportation. <input type="checkbox"/> Describe the various types of transportation.. <input type="checkbox"/> Identify which types of transportation exist in Rochester. <input type="checkbox"/> Describe the impact that transportation has had on Rochester. <input type="checkbox"/> Describe the benefits/consequences of transportation systems. <input type="checkbox"/> Predict how transportation will evolve in the next 10 years. <input type="checkbox"/> Investigate how transportation impacts the environment. <input type="checkbox"/> Assess the positive and negative impacts transportation has on our quality of life. <input type="checkbox"/> Locate transportation resources in Rochester that would allow you to travel to a different city. <input type="checkbox"/> Identify the skills necessary to become employed in the transportation sector. <input type="checkbox"/> Identify various career paths within the transportation industry. 	<ul style="list-style-type: none"> <input type="checkbox"/> Teacher created unit assessments. <input type="checkbox"/> Technology in the news activities. (4) <input type="checkbox"/> Transportation project. <input type="checkbox"/> Student presentation. 	<ul style="list-style-type: none"> <input type="checkbox"/> MST 1 <input type="checkbox"/> MST 2 <input type="checkbox"/> MST 3 <input type="checkbox"/> MST 5 <input type="checkbox"/> MST 6 <input type="checkbox"/> MST 7 <input type="checkbox"/> MP1 <p><u>Make sense of problems and persevere in solving them.</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> MP3 <p><u>Construct viable arguments and critique the reasoning of others</u></p>	<ul style="list-style-type: none"> <input type="checkbox"/> Computers with internet accessibility.
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