EMERGING TRENDS IN IT	
CURRICULUM/CONTENT AREA	COURSE LENGTH
Computer Science	*One Semester (or One Year w/ LAUNCH)*
GRADE LEVEL	DATE LAST REVIEWED
9 - 12	*2022 (new)*
PREREQUISITE(s) *if applicable*	BOARD APPROVAL DATE
None	*11/15/2022*
PRIMARY RESOURCE *if applicable*	

DESIRED RESULTS

COURSE DESCRIPTION AND PURPOSE

This course provides students the opportunity to choose from multiple current trends in IT to build their own unique course of study. Computer programming concepts, problem solving techniques and communication skills will be the foundation of every student's experience. Online learning tools and mentors will support students learning throughout the course. Guided by their own interests, students will have multiple opportunities to earn industry recognized certifications for their achievements.

ENDURING UNDERSTANDINGS *Students will understand that...*	ESSENTIAL QUESTIONS *Students will keep considering...*
Creativity, innovation, and critical thinking are essential for success in a technologically advanced world.	Why is creativity and innovation important? How is creativity and innovation used in Computer Science?
	How do teams efficiently and effectively solve problems in an increasingly complex world?
	What strategies and processes can I use to become a more effective creator, thinker and problem solver?
The ability to communicate and collaborate with people with diverse backgrounds and perspectives is key to participation in a global economic society.	Why is communication and collaboration important? How do positive work behaviors and personal qualities impact communication and collaboration?
	What is effective teamwork? What strategies can I use/teams use to work better together? How can perspectives and experiences of a diverse group develop innovative solutions to a given problem?
Career and technical education provides pathways to high-demand, high-wage career opportunities, and personal fulfillment.	Why is career and life readiness important? What jobs and careers are available to meet individual and societal needs locally, regionally, and nationally?
	How might technical knowledge and skills influence one's employability and advancement opportunities within various work settings?
	What are employability skills? How do I prepare myself for a career that is in demand now and in 5, 10, or 20 years from now?

PRIORITY CAREER & TECHNICAL STANDARDS
Students will be skilled at...

Creativity, Critical Thinking, Communication and Collaboration
4C2: Students will formulate and defend judgments and decisions by employing critical thinking skills.
a: I develop effective resolutions for a given problem, decision or opportunity using available information.
b: I develop and implement a resolution for a new situation using personal knowledge and experience.

Career Development
CD4: Students will identify and apply employability skills.
a: I identify and demonstrate positive work behaviors and personal qualities needed to be employable.
b: I demonstrate skills related to seeking and applying for employment to find and obtain a desired job.
c: I identify and exhibit traits for retaining employment.
d: I develop positive relationships with others.

Information, Media, Technology
IMT1: Students will access, interpret and evaluate information from a variety of sources in order to inform and support premises, arguments, decisions, ideas and initiatives.
a: I choose appropriate sources of data and information for a given purpose.
b: I determine the relevance, validity and timeliness of data and information.
c: I select relevant information necessary for making decisions and solving problems
d: I apply data and information to communicate ideas and create new opportunities.

PRIORITY CONTENT STANDARDS *Students will know...*	
Standard AP2: Students will create computational artifacts using algorithms and programming	
Potential INDUSTRY-RECOGNIZED CREDENTIALS (IRCs) Opportunties associated with the course	Potential WORK BASED LEARNING (WBL) opportunities associated with the course
IC3	
Certifport: IT Specialist- Java, Java Script, Python, and/or software development	
Potential DUAL CREDIT Opportunties associated with the course	

Unit 1 - IT Fundamentals		
STAGE 1: Desired Unit Results *What will students understand as a result of the unit?*		**STAGE 2: Assessment Evidence** *By what criteria will performances of understanding be assessed? Through what authentic performance tasks will students demonstrate the desired unit results?*
ESSENTIAL QUESTION (s) *What thought-provoking questions will foster inquiry, understanding, and transfer of learning?*		**Success Criteria with Standards** *The criteria for evaluating performance on standards is constant.*
- Why is career and life readiness important? What jobs and careers are available to meet individual and societal needs locally, regionally, and nationally?		CTE standards-based Rubric: Throughout the course, students and teachers use the rubric for communication of success criteria, reflection, goal setting, and feedback.
What are employability skills? How do I prepare myself for a career that is in demand now and in 5, 10, or 20 years from now?		In their portfolio/evidence journal, students will reflect on the essential questions through a quick write, constructed response.
PRIORITY CAREER & TECHNICAL STANDARDS & Learning Targets		**Performance Tasks Options/ Assessment Strategies by Standard** *Students may be given options to show their learning in varied ways.*
Creativity, Critical Thinking, Communication and Collaboration **4C2: Students will formulate and defend judgments and decisions by employing critical thinking skills.**		
a: I develop effective resolutions for a given problem, decision or opportunity using available information.	4C2.a.11.h: I can determine the information needed to address an identified problem.	*Develop a prioriitized task list solve a problem.*
	4C2.a.12.h: I can contrast the benefits and drawbacks of various proposed resolutions to a given situation.	*Collaborate with team members to determine the best fit solution to a probleem.*
	4C2.a.15.h: I can determine the best resolution for a problem, decision or opportunity based on given criteria.	*Use project requirements to guide the development of a solution.*
b: I develop and implement a resolution for a new situation using personal knowledge and experience.	4C2.b.5.h: I can apply past experience to develop a course of action for a new situation.	*Compare and contrast the ways technology has effected communication in the workplace.*
	4C2.b.6.h: I can use existing knowledge to develop a resolution for a new situation, problem or opportunity.	*Develop an education plan to achieve the requirements for a specific IT career.*
Career Development **CD4: Students will identify and apply employability skills.**		
a: I identify and demonstrate positive work behaviors and personal qualities needed to be employable.	CD4.a.9.h: I can use positive workqualities typically desired in each of the career cluster's pathways.	*Arrive on-time to all classes and meetings.*
	CD4.a.10.h: I can manage work roles and responsibilities to balance them with other life roles and responsibilities.	*Participate in a group discussion about the importance of time management.*
c: I identify and exhibit traits for retaining employment.	CD4.c.4.h: I can model behaviors that demonstrate reliability and dependability.	*Use electronic communication between teacher, team members, and mentors .*
d: I develop positive relationships with others.	CD4.d.7.h: I can examine the skills required to enable students to successfully transition to postsecondary opportunities.	*Research and list the top skills and traits needed to be successfull at the post secondary level.*
Information, Media, Technology **IMT1: Students will access, interpret and evaluate information from a variety of sources in order to inform and support premises, arguments, decisions, ideas and initiatives.**		
b: I determine the relevance, validity and timeliness of data and information.	IMT1.b.7.h: I can use raw data and information appropriately to support an argument, idea or initiative.	*Research and present the growth of IT careers over the last ten years.*
c: I select relevant information necessary for making decisions and solving problems	IMT1.c.6.h: I can interpret and select appropriate information to develop a resolution for a given situation.	*Collect data using computational tools and transform the data to make it more useful and reliable.*
	IMT1.d.7.h: I can synthesize data and information from multiple sources to identify new trends.	*Reflect on findings/discoveries during the project process and pivot next steps when necessary.*
	IMT1.d.8.h: I can manage and share stored data and information for a specific purpose.	*Use project management tools to share project progress with team members, mentors, and teachers.*
PRIORITY CONTENT STANDARDS & Learning Targets		**Performance Tasks Options/ Assessment Strategies by Standard** *Students may be given options to show their learning in varied ways.*
Standard AP2: Students will create computational artifacts using algorithms and programming	I can use user-centered research and design techniques (e.g., surveys, interviews) to create software solutions. I can integrate grade-level appropriate mathematical techniques, concepts, and processes in the creation of computational artifacts. I can use mathematical operations to change a value stored in a variable I can decompose a computational problem by creating new data types, functions, or classes. I can develop programs for multiple computing platforms (e.g., computer desktop, web, mobile). I can implement an Artificial Intelligence (AI) algorithm to play a game against a human opponent or solve a problem. I can demonstrate code reuse by creating programming solutions using libraries and application program interfaces (APIs) (e.g., graphics libraries, maps, API).	*Write and implement a solution to a computational problem.*
Standard DA1: Students will create computational artifacts using data and analysis	I can convert between binary, decimal, and hexadecimal representations of data (e.g., convert hexadecimal color codes to decimal percentages, ASCII/ Unicode representation). I can analyze the representation tradeoffs among various forms of digital information (e.g., lossy vs. lossless compression, encrypted vs. unencrypted, various image representations). I can discuss how data sequences (e.g., binary, hexadecimal, octal) can be interpreted in a variety of forms (e.g., instructions, numbers, text, sound, image).	*Use data analysis tools and techniques to identify patterns in data representing complex systems.*
Stage 3: Learning Activities *A brief summary of the key learning activities- How will students build knowledge & develop skills? How will learning be relevant, accessible, and engaging? How will the learning unforld in a natural flow?*		

GUIDING UNIT QUESTIONS *Using Costas Level of Thinking, what questions will hook and hold students so that they develop a deep understanding of the desired results? The guiding questions are more topic-specific to the particular unit. They guide the exploration of the essential questions and rigor of the standards. This may include questions that guide project based/ problem based learning*	STRATEGIES/ACTIVITIES *What learning strategies and experiences will authentically engage students so that they gain understanding the desired results? This includes strategies and activities that help learners acquire targeted knowledge and skills, make meaning of important ideas, and transfer their learning to new situations. Consider how the learning will be tailored and flexible to address the interests and learning styles of all students.*	RESOURCES/MATERIALS *This includes an applicable textbooks, software, industry recognized certification software/tools, subcriptions (such asPLTW), etc.*
What are the steps of the programming process?	Problem solving activities.	Students will need access to project management software. Many versions are free. LAUNCH and the school district may wish to purchase a solution that could be globaly adobted.
Why is project management important?	Students will use project management software to track their teams performance throughout projects.	Access to LAUNCH resources for college and career preperation. (Project and time management, professional communication, team norms...)
Why use an Agile strategy for solution development?	Discuss industry recognized certifications with mentors and hiring managers.	
What are the importance of industry recognized certifications?		

Unit 2 - Programming Certification		
STAGE 1: Desired Unit Results What will students understand as a result of the unit?		**STAGE 2: Assessment Evidence** By what criteria will performances of understanding be assessed? Through what authentic performance tasks will students demonstrate the desired unit results?
ESSENTIAL QUESTION (s) What thought-provoking questions will foster inquiry, understanding, and transfer of learning?		**Success Criteria with Standards** The criteria for evaluating performance on standards is constant.
- Why is career and life readiness important? What jobs and careers are available to meet individual and societal needs locally, regionally, and nationally?		CTE standards-based Rubric: Throughout the course, students and teachers use the rubric for communication of success criteria, reflection, goal setting, and feedback.
What are employability skills? How do I prepare myself for a career that is in demand now and in 5, 10, or 20 years from now?		In their portfolio/evidence journal, students will reflect on the essential questions through a quick write, constructed response.
PRIORITY CAREER & TECHNICAL STANDARDS & Learning Targets		**Performance Tasks Options/ Assessment Strategies by Standard** Students may be given options to show their learning in varied ways.
Creativity, Critical Thinking, Communication and Collaboration **4C2: Students will formulate and defend judgments and decisions by employing critical thinking skills.**		
a: I develop effective resolutions for a given problem, decision or opportunity using available information.	4C2.a.11.h: I can determine the information needed to address an identified problem.	Determine an appropriate program design to solve a problem or accomplish a task.
	4C2.a.12.h: I can contrast the benefits and drawbacks of various proposed resolutions to a given situation.	Determine if two or more code segments yield equivalent results.
	4C2.a.13.h: I can predict how an action could result in unintended consequences, both positive and negative.	Use test-cases to find errors or validate results.
	4C2.a.14.h: I can analyze the impact of a decision using a systems thinking model.	Determine code that would be used to complete code segments.
	4C2.a.15.h: I can determine the best resolution for a problem, decision or opportunity based on given criteria.	Determine an appropriate program design to solve a problem or accomplish a task.
b: I develop and implement a resolution for a new situation using personal knowledge and experience.	4C2.b.5.h: I can apply past experience to develop a course of action for a new situation.	Determine the result or output based on statement execution order in a code segment.
	4C2.b.6.h: I can use existing knowledge to develop a resolution for a new situation, problem or opportunity.	Describe the behavior and conditions that produce identified results in a program.
Career Development **CD4: Students will identify and apply employability skills.**		
a: I identify and demonstrate positive work behaviors and personal qualities needed to be employable.	CD4.a.9.h: I can use positive workqualities typically desired in each of the career cluster's pathways.	Arrive on-time to all classes and meetings.
c: I identify and exhibit traits for retaining employment.	CD4.c.4.h: I can model behaviors that demonstrate reliability and dependability.	Use electronic communication between teacher, team members, and mentors .
d: I develop positive relationships with others.	CD4.d.7.h: I can examine the skills required to enable students to successfully transition to postsecondary opportunities.	Research and list the top skills and traits needed to be successfull at the post secondary level.
Information, Media, Technology **IMT1: Students will access, interpret and evaluate information from a variety of sources in order to inform and support premises, arguments, decisions, ideas and initiatives.**		
b: I determine the relevance, validity and timeliness of data and information.	IMT1.b.7.h: I can use raw data and information appropriately to support an argument, idea or initiative.	Determine an appropriate program design to solve a problem or accomplish a task.
c: I select relevant information necessary for making decisions and solving problems	IMT1.c.6.h: I can interpret and select appropriate information to develop a resolution for a given situation.	Collect data using computational tools and transform the data to make it more useful and reliable.
d: I apply data and information to communicate ideas and create new opportunities.	IMT1.d.6.h: I can defend a proposal for a new product or service based on data and information analysis.	Evaluate the ability of models and simulations to test and support the refinement of hypotheses.
PRIORITY CONTENT STANDARDS & Learning Targets		**Performance Tasks Options/ Assessment Strategies by Standard** Students may be given options to show their learning in varied ways.
Standard AP2: Students will create computational artifacts using algorithms and programming	I can use user-centered research and design techniques (e.g., surveys, interviews) to create software solutions. I can integrate grade-level appropriate mathematical techniques, concepts, and processes in the creation of computational artifacts. I can use mathematical operations to change a value stored in a variable I can decompose a computational problem by creating new data types, functions, or classes. I can develop programs for multiple computing platforms (e.g., computer desktop, web, mobile). I can implement an Artificial Intelligence (AI) algorithm to play a game against a human opponent or solve a problem. I can demonstrate code reuse by creating programming solutions using libraries and application program interfaces (APIs) (e.g., graphics libraries, maps, API).	Write and implement a solution to a computational problem.
Standard DA1: Students will create computational artifacts using data and analysis	I can convert between binary, decimal, and hexadecimal representations of data (e.g., convert hexadecimal color codes to decimal percentages, ASCII/ Unicode representation). I can analyze the representation tradeoffs among various forms of digital information (e.g., lossy vs. lossless compression, encrypted vs. unencrypted, various image representations). I can discuss how data sequences (e.g., binary, hexadecimal, octal) can be interpreted in a variety of forms (e.g., instructions, numbers, text, sound, image).	Use data analysis tools and techniques to identify patterns in data representing complex systems.
Stage 3: Learning Activities A brief summary of the key learning activities- How will students build knowledge & develop skills? How will learning be relevant, accessible, and engaging? How will the learning unforld in a natural flow?		

GUIDING UNIT QUESTIONS Using Costas Level of Thinking, what questions will hook and hold students so that they develop a deep understanding of the desired results? The guiding questions are more topic-specific to the particular unit. They guide the exploration of the essential questions and rigor of the standards. This may include questions that guide project based/ problem based learning	STRATEGIES/ACTIVITIES What learning strategies and experiences will authentically engage students so that they gain understanding the desired results? This includes strategies and activities that help learners acquire targeted knowledge and skills, make meaning of important ideas, and transfer their learning to new situations. Consider how the learning will be tailored and flexible to address the interests and learning styles of all students.	RESOURCES/MATERIALS This includes an applicable textbooks, software, industry recognized certification software/tools, subcriptions (such asPLTW), etc.
How do you store data in a computer?	Write programs that receive data from the user, store that data, and display the data to the user.	Students will need access to an IDE to write their programs. VS Code supports multiple programming languages.
How does a computer make a decision?	Write programs that use decision structures to change the program flow during program execution.	Students will need access to certification resources.
How can itteration help to solve problems?	Write programs that us itteration structures to solve a problem.	Access to LAUNCH resources for college and career preperation. (Project and time management, professional communication, team norms...)

Unit 3 - Emerging Trends in IT - Student Choice		
STAGE 1: Desired Unit Results What will students understand as a result of the unit?		**STAGE 2: Assessment Evidence** By what criteria will performances of understanding be assessed? Through what authentic performance tasks will students demonstrate the desired unit results?
ESSENTIAL QUESTION (s) What thought-provoking questions will foster inquiry, understanding, and transfer of learning?		**Success Criteria with Standards** The criteria for evaluating performance on standards is constant.
- Why is career and life readiness important? What jobs and careers are available to meet individual and societal needs locally, regionally, and nationally?		CTE standards-based Rubric: Throughout the course, students and teachers use the rubric for communication of success criteria, reflection, goal setting, and feedback.
What are employability skills? How do I prepare myself for a career that is in demand now and in 5, 10, or 20 years from now?		In their portfolio/evidence journal, students will reflect on the essential questions through a quick write, constructed response.
PRIORITY CAREER & TECHNICAL STANDARDS & Learning Targets		**Performance Tasks Options/ Assessment Strategies by Standard** Students may be given options to show their learning in varied ways.
Creativity, Critical Thinking, Communication and Collaboration **4C2: Students will formulate and defend judgments and decisions by employing critical thinking skills.**		
a: I develop effective resolutions for a given problem, decision or opportunity using available information.	4C2.a.11.h: I can determine the information needed to address an identified problem.	Research information about a topic to solve a problem or accomplish a task.
	4C2.a.12.h: I can contrast the benefits and drawbacks of various proposed resolutions to a given situation.	Debate the resources, services, and costs between multiple solution proposals to a problem.
	4C2.a.13.h: I can predict how an action could result in unintended consequences, both positive and negative.	Use test-cases to find errors or validate results.
	4C2.a.14.h: I can analyze the impact of a decision using a systems thinking model.	Determine resources necessary to implement a proposed solution to a problem.
	4C2.a.15.h: I can determine the best resolution for a problem, decision or opportunity based on given criteria.	Use project requirements to guide the development of a solution.
	C2.a.16.h: I can defend an action taken or a decision implemented.	Present the process, emphasizing the impact of decisions made, used to solve a problem.
	4C2.b.6.h: I can use existing knowledge to develop a resolution for a new situation, problem or opportunity.	Utilize IT Fundamentals and programming skills to solve a problem.
Career Development **CD4: Students will identify and apply employability skills.**		
a: I identify and demonstrate positive work behaviors and personal qualities needed to be employable.	CD4.a.9.h: I can use positive workqualities typically desired in each of the career cluster's pathways.	Arrive on-time to all classes and meetings.
c: I identify and exhibit traits for retaining employment.	CD4.c.4.h: I can model behaviors that demonstrate reliability and dependability.	Use electronic communication between teacher, team members, and mentors .
PRIORITY CONTENT STANDARDS & Learning Targets		**Performance Tasks Options/ Assessment Strategies by Standard** Students may be given options to show their learning in varied ways.
Standard AP2: Students will create computational artifacts using algorithms and programming	I can use user-centered research and design techniques (e.g., surveys, interviews) to create software solutions. I can integrate grade-level appropriate mathematical techniques, concepts, and processes in the creation of computational artifacts. I can use mathematical operations to change a value stored in a variable I can decompose a computational problem by creating new data types, functions, or classes. I can develop programs for multiple computing platforms (e.g., computer desktop, web, mobile). I can implement an Artificial Intelligence (AI) algorithm to play a game against a human opponent or solve a problem. I can demonstrate code reuse by creating programming solutions using libraries and application program interfaces (APIs) (e.g., graphics libraries, maps, API).	Write and implement a solution to a computational problem.
Stage 3: Learning Activities A brief summary of the key learning activities- How will students build knowledge & develop skills? How will learning be relevant, accessible, and engaging? How will the learning unforld in a natural flow?		
GUIDING UNIT QUESTIONS Using Costas Level of Thinking, what questions will hook and hold students so that they develop a deep understanding of the desired results? The guiding questions are more topic-specific to the particular unit. They guide the exploration of the essential questions and rigor of the standards. This may include questions that guide project based/ problem based learning	**STRATEGIES/ACTIVITIES** What learning strategies and experiences will authentically engage students so that they gain understanding the desired results? This includes strategies and activities that help learners acquire targeted knowledge and skills, make meaning of important ideas, and transfer their learning to new situations. Consider how the learning will be tailored and flexible to address the interests and learning styles of all students.	**RESOURCES/MATERIALS** This includes an applicable textbooks, software, industry recognized certification software/tools, subcriptions (such asPLTW), etc.
What is the personal impact of the IT topic you decided to study?	Present progress updates and project completion.	Access to LAUNCH mentor network.
What is the global impact of the IT topic you decided to study?	Collaborate with other students to share concepts learned.	Hardware, software and learning material needs will depend upon student choice for their IT topic.
What IT careers utilize the IT topic you decded to study?	Utilize project management strategies to plan, work through and complete their project.	

Unit 4 - Certifications and Beyond		
STAGE 1: Desired Unit Results What will students understand as a result of the unit?		**STAGE 2: Assessment Evidence** By what criteria will performances of understanding be assessed? Through what authentic performance tasks will students demonstrate the desired unit results?
ESSENTIAL QUESTION (s) What thought-provoking questions will foster inquiry, understanding, and transfer of learning?		**Success Criteria with Standards** The criteria for evaluating performance on standards is constant.
- Why is career and life readiness important? What jobs and careers are available to meet individual and societal needs locally, regionally, and nationally?		CTE standards-based Rubric: Throughout the course, students and teachers use the rubric for communication of success criteria, reflection, goal setting, and feedback.
What are employability skills? How do I prepare myself for a career that is in demand now and in 5, 10, or 20 years from now?		In their portfolio/evidence journal, students will reflect on the essential questions through a quick write, constructed response.
PRIORITY CAREER & TECHNICAL STANDARDS & Learning Targets		**Performance Tasks Options/ Assessment Strategies by Standard** Students may be given options to show their learning in varied ways.
Career Development **CD4: Students will identify and apply employability skills.**		
a: I identify and demonstrate positive work behaviors and personal qualities needed to be employable.	CD4.a.6.h: I can evaluate how selfdiscipline, self-worth, positive attitude and integrity displayed in a work situation affect employment status.	Document a list of desired skills and traits local employers desire in their employees.
	CD4.a.7.h: I can assess how flexibility and willingness to learn new knowledge and skills affect employment status.	Interview a computer science profesional to learn about previous, current, and future learning required for their position.
	CD4.a.8.h: I can apply communication strategies when adapting to a culturally diverse environment.	Participate in a cross cultural discussion of computer science careers with students in another school district.
	CD4.a.9.h: I can use positive workqualities typically desired in each of the career cluster's pathways.	Arrive on-time to all classes and meetings.
	CD4.a.10.h: I can manage work roles and responsibilities to balance them with other life roles and responsibilities.	Participate in a group discussion about the importance of time management.
b: I demonstrate skills related to seeking and applying for employment to find and obtain a desired job.	CD4.b.5.h: I can use multiple resources to locate job opportunities.	Use multiple on-line resources to construct a list potential employement opportunities.
	CD4.b.6.h: I can prepare a resume, cover letter, employment application.	Produce a resume and review it with a hiring manager.
	CD4.b.7.h: I can employ critical thinking and decision-making skills to exhibit qualifications to a potential employer in an interview.	Participate in mock interviews with educators and community members.
c: I identify and exhibit traits for retaining employment.	CD4.c.4.h: I can model behaviors that demonstrate reliability and dependability.	Use electronic communication between teacher, team members, and mentors .
	CD4.c.5.h: I can maintain appropriate dress and behavior for the job to contribute to a safe and effective workplace/jobsite.	Document appropriate dress for computer science positions at local companies.
	CD4.c.6.h: I can complete required employment forms and documentation.	Complete an application for a local job opportunity.
	CD4.c.7.h: I can summarize key activities necessary to retain a job in an industry.	Create a prioritzed list of leadership qualities desired by local employers.
d: I develop positive relationships with others.	CD4.d.5.h: I can participate in cocurricular and community activities to enhance the school experience.	Participate in a job shadow.
	CD4.d.7.h: I can examine the skills required to enable students to successfully transition to postsecondary opportunities.	Research and list the top skills and traits needed to be successfull at the post secondary level.
	CD4.d.8.h: I can use a systematic approach to academic and career planning for students to achieve their learning, socio-cultural and work goals.	Create an academic and career plan with the help of parents, teachers, counselors, and mentors.
PRIORITY CONTENT STANDARDS & Learning Targets		**Performance Tasks Options/ Assessment Strategies by Standard** Students may be given options to show their learning in varied ways.
Standard IC1: Students will understand the impact and effect computing technology has on our everyday lives	I can debate the social and economic implications associated with ethical and unethical computing practices (e.g., intellectual property rights, hacktivism, software piracy, new computers shipped with malware).	Evaluate computational artifacts to maximize their beneficial effects and minimize harmful effects on society.
Standard IC3: Students will understand the importance of proper use of data and information in a computing society	I can debate laws and regulations that impact the development and use of software and be able to explain the main arguments from multiple perspectives.	Debate laws and regulations that impact the development and use of software.
Stage 3: Learning Activities A brief summary of the key learning activities- How will students build knowledge & develop skills? How will learning be relevant, accessible, and engaging? How will the learning unforld in a natural flow?		
GUIDING UNIT QUESTIONS Using Costas Level of Thinking, what questions will hook and hold students so that they develop a deep understanding of the desired results? The guiding questions are more topic-specific to the particular unit. They guide the exploration of the essential questions and rigor of the standards. This may include questions that guide project based/ problem based learning	**STRATEGIES/ACTIVITIES** What learning strategies and experiences will authentically engage students so that they gain understanding the desired results? This includes strategies and activities that help learners acquire targeted knowledge and skills, make meaning of important ideas, and transfer their learning to new situations. Consider how the learning will be tailored and flexible to address the interests and learning styles of all students.	**RESOURCES/MATERIALS** This includes an applicable textbooks, software, industry recognized certification software/tools, subcriptions (such asPLTW), etc.
What is the benefit to earning an industry level certification?	Discuss the value placed on industry level certifications in the hiring process with local professionals.	Certiport IT Specialist Certifications
What are the top technology and soft skills requested by local emoloyers?	Research and document the top technology and soft skills requested by local employers.	Access to distric community partners.
What are five local companies hiring for computer science positions?	Research, document, and present details about current computer science job opportunities.	Transportation options for site visits.

What are the top technology and soft skills requested by local emoloyers?		Access to LAUNCH resources for college and career preperation. (writing resumes, meeting with mentors, professional communication, dress codes...)

Computational Thinking Practices: Skills	
Practice 1 - Program Design and Algorithm Developn	Determine required code segments to produce a given output.
	Determine an appropriate program design to solve a problem or accomplish a task.
	Determine code that would be used to complete code segments.
	Determine code that would be used to interact with completed program code.
Practice 2 - Code Logic	Determine the output, value, or result of given program code given initial values.
	Apply the meaning of specific operators.
	Determine the result or output based on statement execution order in a code segment.
	Determine the result or output based on statement execution order in a code segment without method calls.
	Determine the result or output based on the statement execution order in a code segment containing method calls.
	Determine the number of times a code segment will execute.
Practice 3 - Code Implementation	Write and implement programming code.
	Write program code to create objects of a class and call methods.
	Write program code to define a new type by creating a class
	Write program code to satisfy method specifications using expressions, conditional statements, and iterative statemen
	Write program code to create, traverse, and manipulate elements in 1D array or ArrayList objects.
	Write program code to create, traverse, and manipulate elements in 2D array objects.
Practice 4 - Code Testing	Analyze program code for correctness, equivalence, and errors
	Use test-cases to find errors or validate results.
	Identify errors in program code.
	Determine if two or more code segments yield equivalent results.
Practice 5 - Documentation	Describe the behavior and conditions that produce identified results in a program.
	Describe the behavior of a given segment of program code.
	Explain why a code segment will not compile or work as intended.
	Explain how the result of program code changes, given a change to the initial code.
	Describe the initial conditions that must be met for a program segment to work as intended or described.

Priority Standards	Unit 1	Unit 2	Unit 3	Unit 4
Creativity, Critical Thinking, Communication and Collaboration **4C2: Students will formulate and defend judgments and decisions by employing critical thinking skills.** a: I develop effective resolutions for a given problem, decision or opportunity using available information. b: I develop and implement a resolution for a new situation using personal knowledge and experience.	X	X	X	X
Career Development **CD4: Students will identify and apply employability skills.** a: I identify and demonstrate positive work behaviors and personal qualities needed to be employable. b: I demonstrate skills related to seeking and applying for employment to find and obtain a desired job. c: I identify and exhibit traits for retaining employment. d: I develop positive relationships with others.	X	X	X	X
Information, Media, Technology **IMT1: Students will access, interpret and evaluate information from a variety of sources in order to inform and support premises, arguments, decisions, ideas and initiatives.** a: I choose appropriate sources of data and information for a given purpose. b: I determine the relevance, validity and timeliness of data and information. c: I select relevant information necessary for making decisions and solving problems d: I apply data and information to communicate ideas and create new opportunities.	X	X	X	X
Standard AP2: Students will create computational artifacts using algorithms and programming	X	X	X	
Standard DA1: Students will create computational artifacts using data and analysis	X	X		
Standard IC1: Students will understand the impact and effect computing technology has on our everyday lives				X
Standard IC3: Students will understand the importance of proper use of data and information in a computing society				X