Dublin City Schools
App Creators
Graded Course of Study

VISION

Dublin City Schools is committed to providing purposeful STEAM learning experiences to students throughout their K-12 journey. These experiences will be in the form of integrated, interdisciplinary experiences as well as focused pathways in the areas of STEAM.

We commit to transforming STEAM into more than the integration of Science, Technology, Engineering, and Mathematics with vision to expand ownership to all disciplines and grade levels. By creating a culture of thinking, curiosity and creativity across content, students will engage in interest based learning that will help them develop the attitudes and skills that will support them in a variety of career and life pathways. These learning experiences will support students as lifelong, adaptable learners who can thrive in a quickly changing world.

We believe in STEAM learning for all students and commit to creating equitable access so that our STEAM classrooms are representative of our school populations and communities.

Instructional Agreements

- We recognize the importance of early access and exposure to STEAM learning.
- We prioritize learning where students will identify and solve open-ended problems and engage in experiential learning.
- We will engage students through a lens of design thinking and promote opportunities for PBL.
- We will provide students with industry connections and experiences.
- We prioritize educating the whole child, in addition to our content. This includes a commitment to employability skills and emotional intelligence.
- We value students seeing themselves in STEAM fields.

Course Goals

App Creators uses a Project Lead the Way (PLTW) curriculum that introduces students to the field of computer science and the concepts of computational thinking, through the creation of mobile apps. Students are challenged to be creative and innovative, as they collaboratively design and develop mobile solutions to engaging, authentic problems. Students experience the positive impact of the application of computer science to society as well as other disciplines, particularly biomedical science. This course uses a Project Lead the Way (PLTW) Curriculum.

Communication, Collaboration, and Problem-Solving		
Strand	**Topic**	**Content Statements**
CAREER AWARENESS AND EXPLORATION (CAE)	CAE-A Identify the variety of careers related to engineering, biomedical science, and computer science	Explore a variety of careers related to engineering, biomedical sciences, and computer science.
		Explore and reflect on your personal interests and strengths in relation to diverse career opportunities.
COMMUNICATION (COM)	COM-A Communicate effectively for specific purposes and settings	Use accurate and appropriate terminology.
		Document work, including processes, research, and solutions.
		Use reliable evidence to support a claim.
COLLABORATION (COL)	COL-A Collaborate effectively on	Illustrate successful collaboration through effective

	a diverse and multidisciplinary team.	communication and constructive feedback.
		Apply team norms to encourage productivity and define how a team will function and measure its success.
CRITICAL AND CREATIVE PROBLEM SOLVING (CCP)	CCP-A Apply the design process to create a solution.	Describe major steps of a design process and the typical tasks around each step.
		Identify appropriate design requirements (criteria and constraints).
		Generate ideas or build upon other ideas to innovate.
		Evaluate solution ideas against the design requirements and justify the best solution to pursue.
		Iteratively design and develop a solution.
		Develop and implement a plan to test and evaluate a potential solution to verify that it best meets all design requirements.
	CCP-B Apply user-centered design principles when creating a solution.	Investigate the types of interactions between users and a proposed solution.
		Consider accessibility and equity when designing and creating solutions.

		Incorporate safety in all designs, products, and solutions.
	CCP-C Creatively solve a problem using computational thinking, analytical and critical thinking skills.	Create and execute a plan to manage and use resources such as time, materials, and tools.
		Decompose a problem into smaller parts.
		Collect, display, analyze, and interpret data to draw a conclusion.
	CCP-D Analyze and describe design functionality of a product.	Dissect a product to gain understanding about its functionality.

Technical Knowledge and Skills		
Strand	**Topic**	**Content Statements**
DATA	DAT-A Create and store data during the execution of a program.	Store, access, and update data stored in variables or lists.
		Trace a program and deduce the values that variables or loops will have after the code is executed.
ALGORITHMS AND PROGRAMMING (AAP)	AAP-A Analyze and create algorithms.	Analyze, break down, and explain the logic of an algorithm.

		Create simple algorithms that involve variables, conditionals, operators, or logic.
		Create algorithms that use loops or procedures.
	AAP-B Analyze the functionality of a program.	Identify and describe the high-level structures of a program, such as user interface components, data components, event handlers, and procedures.
	AAP-C Create programs by developing and testing code in a modular, incremental approach.	Plan a program using appropriate strategies such as flowcharting.
		Create appropriate event handlers to respond to runtime events.
		Apply programming best practices, such as creating or improving documentation, using descriptive variables and procedure names, using comments, and testing code frequently.
		Debug programs or identify hardware issues.
	AAP-D Adapt and expand existing code to meet a need.	Find code relevant to meet a need and extend or apply it to a new purpose.
	AAP-E Recognize abstractions.	Identify how abstraction hides the complexity of a task.

COMPUTER SYSTEMS (CSY)	CSY-A Describe the hardware components of an electronic device and how they interact with software and the environment.	Identify how a user interacts with the parts of a computational system and how these parts interact with each other.
SOCIAL IMPACTS OF COMPUTING (SIOC)	SIOC-A Analyze the implications of computing in society.	Identify the positive and negative ways that computing has changed or is changing the way people work, live, and play.
GAME DESIGN (GDE)	GDE-A Apply game design principles to design a game.	Design or analyze a game's mechanics, objectives, and aesthetic.
		Analyze a game's user appeal and experience.