



Dublin City Schools
STEAM
Graded Course of Study
2022

DCS STEAM 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.

Capstone Course: Engineering Research and Internship - High School

Capstone Course: Engineering Research and Internship Course Goals:

This course will include a large, yearlong project that will tie together the concepts learned in previous engineering courses. Students will develop a personal portfolio documenting their work. The course will also include work with a professional on researching or developing a solution for a real-world engineering problem. The course will develop students' engineering, computer programming and presentation skills.

Safety		
Strand	Topic	Content Statement
Equipment Safety	Tools and Habits	Develop safe workshop habits using power tools and hand tools.

Capstone and Research		
Strand	Topic	Content Statement
Design and Technology (OH Tech) Addresses the nature of technology to develop and improve products and systems over time to meet human/societal needs and wants through design processes.	4. Use digital learning tools and resources to communicate and disseminate information to multiple audiences.	9-12.DT.4.a Evaluate project/product solutions and communicate observations of the entire design process results. 9-12.DT.4.b Interpret data/information related to product testing to determine revisions and modifications to a design's function

Internship or Real World Application		
Strand	Topic	Content Statement
Design and Technology (OH Tech) Addresses the nature of technology to develop and improve products and systems over time to meet human/societal needs and wants through design processes.	4. Use digital learning tools and resources to communicate and disseminate information to multiple audiences.	9-12.DT.4.a Evaluate project/product solutions and communicate observations of the entire design process results. 9-12.DT.4.b Interpret data/information related to product testing to determine revisions and modifications to a design's function. 9-12.DT.4.c Critically evaluate a design solution at multiple points of a design process. Consider design requirements and adjust processes and outcomes as needed.

Project and Digital Portfolio Development		
Strand	Topic	Content Statement
Information and Communications Technology (OH Tech) The understanding and application of digital learning tools for accessing, creating, evaluating, applying and communicating ideas and information.	3. Use digital learning tools and resources to construct knowledge.	9-12.ICT.3.c Create artifacts using digital learning tools and resources to demonstrate knowledge.
Design and Technology (OH Tech) Addresses the nature of technology to develop and improve products	2. Identify a problem and use an engineering design process to solve the problem.	9-12.DT.2.b Implement, document and present a design process as applied to a particular product, process or problem.
	4. Use digital learning tools and	9-12.DT.4.a Evaluate project/product solutions and communicate

and systems over time to meet human/societal needs and wants through design processes.	resources to communicate and disseminate information to multiple audiences.	observations of the entire design process results.
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Capstone Project		
Strand	Topic	Content Statement
Design and Technology (OH Tech) Addresses the nature of technology to develop and improve products and systems over time to meet human/societal needs and wants through design processes.	4. Use digital learning tools and resources to communicate and disseminate information to multiple audiences.	9-12.DT.4.a Evaluate project/product solutions and communicate observations of the entire design process results. 9-12.DT.4.b Interpret data/information related to product testing to determine revisions and modifications to a design's function.

Internship or Real World Application		
Strand	Topic	Content Statement
Design and Technology (OH Tech) Addresses the nature of technology to develop and improve products and systems over time to meet human/societal needs and wants	4. Use digital learning tools and resources to communicate and disseminate information to multiple audiences.	9-12.DT.4.a Evaluate project/product solutions and communicate observations of the entire design process results. 9-12.DT.4.b Interpret data/information related to product testing to determine revisions and modifications to a design's function. 9-12.DT.4.c Critically evaluate a design solution at multiple points of a design process. Consider design requirements and adjust processes

through design processes.		and outcomes as needed.
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Digital Portfolio Development		
Strand	Topic	Content Statement
Information and Communications Technology (OH Tech) The understanding and application of digital learning tools for accessing, creating, evaluating, applying and communicating ideas and information.	3. Use digital learning tools and resources to construct knowledge.	9-12.ICT.3.a Synthesize textual, visual and quantitative research and data (e.g., images, diagrams, maps, graphs, infographics, videos, animations, interactives) from a variety of digital learning tools and resources. 9-12.ICT.3.b Analyze relationships and forecast outcomes using data collected by students or retrieved from a variety of digital learning tools and resources. 9-12.ICT.3.c Create artifacts using digital learning tools and resources to demonstrate knowledge.

Capstone Presentation		
Strand	Topic	Content Statement
Information and Communications Technology (OH Tech) The understanding and application of digital learning tools for accessing, creating, evaluating, applying and communicating ideas and information.	4. Use digital learning tools and resources to communicate and disseminate information to multiple audiences.	9-12.ICT.4.a Use digital learning tools and resources to identify communication needs considering goals, audience, content, access to tools or devices, timing of communication (e.g., time zones), etc. 9-12.ICT.4.b Based on communication needs, develop, implement and evaluate a communication plan to disseminate information to multiple audiences. 9-12.ICT.4.c Integrate accessibility principles to effectively communicate to, and meet the needs of, multiple audiences.

		9-12.ICT.4.d Use digital learning tools to represent and model complex systems of information to a target audience.
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