

Main Criteria: Forward Education
Secondary Criteria: Ohio Learning Standards
Subjects: Mathematics, Science, Technology Education
Grades: 11, 12, Key Stage 4

Forward Education

Autonomous Electric Vehicles of the Future

Ohio Learning Standards
Mathematics
Grade 11 - Adopted: 2017

DOMAIN / ACADEMIC CONTENT STANDARD	OH.MP.	Standards for Mathematical Practice
---	---------------	--

STANDARD / BENCHMARK	MP.1.	Make sense of problems and persevere in solving them.
STANDARD / BENCHMARK	MP.2.	Reason abstractly and quantitatively.
STANDARD / BENCHMARK	MP.3.	Construct viable arguments and critique the reasoning of others.
STANDARD / BENCHMARK	MP.4.	Model with mathematics.
STANDARD / BENCHMARK	MP.8.	Look for and express regularity in repeated reasoning.

DOMAIN / ACADEMIC CONTENT STANDARD	OH.A.	Algebra Standards
---	--------------	--------------------------

STANDARD / BENCHMARK	A.CED.	CREATING EQUATIONS
---------------------------------	--------	---------------------------

BENCHMARK / GRADE LEVEL INDICATOR		Create equations that describe numbers or relationships.
--	--	---

PROFICIENCY LEVEL	A.CED.2.	Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.
------------------------------	----------	--

INDICATOR	A.CED.2. a.	Focus on applying linear and simple exponential expressions. (A1, M1)
------------------	----------------	---

DOMAIN / ACADEMIC CONTENT STANDARD	OH.A.	Algebra Standards
---	--------------	--------------------------

STANDARD / BENCHMARK	A.REI.	REASONING WITH EQUATIONS AND INEQUALITIES
---------------------------------	--------	--

BENCHMARK / GRADE LEVEL INDICATOR		Understand solving equations as a process of reasoning and explain the reasoning.
--	--	--

PROFICIENCY LEVEL	A.REI.1.	Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.
DOMAIN / ACADEMIC CONTENT STANDARD	OH.F.	Functions Standards
STANDARD / BENCHMARK	F.IF.	INTERPRETING FUNCTIONS
BENCHMARK / GRADE LEVEL INDICATOR		Analyze functions using different representations.
PROFICIENCY LEVEL	F.IF.7.	Graph functions expressed symbolically and indicate key features of the graph, by hand in simple cases and using technology for more complicated cases. Include applications and how key features relate to characteristics of a situation, making selection of a particular type of function model appropriate.

INDICATOR F.IF.7.a. Graph linear functions and indicate intercepts. (A1, M1)

DOMAIN / ACADEMIC CONTENT STANDARD	OH.F.	Functions Standards
STANDARD / BENCHMARK	F.LE.	LINEAR, QUADRATIC, AND EXPONENTIAL MODELS
BENCHMARK / GRADE LEVEL INDICATOR		Construct and compare linear, quadratic, and exponential models, and solve problems.
PROFICIENCY LEVEL	F.LE.1.	Distinguish between situations that can be modeled with linear functions and with exponential functions.

INDICATOR F.LE.1.a. Show that linear functions grow by equal differences over equal intervals and that exponential functions grow by equal factors over equal intervals.

DOMAIN / ACADEMIC CONTENT STANDARD	OH.G.	Geometry Standards
STANDARD / BENCHMARK	G.GPE.	EXPRESSING GEOMETRIC PROPERTIES WITH EQUATIONS
BENCHMARK / GRADE LEVEL INDICATOR		Use coordinates to prove simple geometric theorems algebraically and to verify specific geometric statements.

PROFICIENCY LEVEL G.GPE.5. Justify the slope criteria for parallel and perpendicular lines, and use them to solve geometric problems, e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point.

Ohio Learning Standards
Mathematics
Grade 12 - Adopted: 2017

DOMAIN / ACADEMIC CONTENT STANDARD	OH.MP.	Standards for Mathematical Practice
------------------------------------	--------	-------------------------------------

STANDARD / BENCHMARK MP.1. Make sense of problems and persevere in solving them.

STANDARD / BENCHMARK	MP.2.	Reason abstractly and quantitatively.
STANDARD / BENCHMARK	MP.3.	Construct viable arguments and critique the reasoning of others.
STANDARD / BENCHMARK	MP.4.	Model with mathematics.
STANDARD / BENCHMARK	MP.8.	Look for and express regularity in repeated reasoning.

DOMAIN / ACADEMIC CONTENT STANDARD	OH.A.	Algebra Standards
STANDARD / BENCHMARK	A.CED.	CREATING EQUATIONS
BENCHMARK / GRADE LEVEL INDICATOR		Create equations that describe numbers or relationships.
PROFICIENCY LEVEL	A.CED.2.	Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.

INDICATOR A.CED.2. Focus on applying linear and simple exponential expressions. (A1, M1)
a.

DOMAIN / ACADEMIC CONTENT STANDARD	OH.A.	Algebra Standards
STANDARD / BENCHMARK	A.REI.	REASONING WITH EQUATIONS AND INEQUALITIES
BENCHMARK / GRADE LEVEL INDICATOR		Understand solving equations as a process of reasoning and explain the reasoning.

PROFICIENCY LEVEL A.REI.1. Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.

DOMAIN / ACADEMIC CONTENT STANDARD	OH.F.	Functions Standards
STANDARD / BENCHMARK	F.IF.	INTERPRETING FUNCTIONS
BENCHMARK / GRADE LEVEL INDICATOR		Analyze functions using different representations.
PROFICIENCY LEVEL	F.IF.7.	Graph functions expressed symbolically and indicate key features of the graph, by hand in simple cases and using technology for more complicated cases. Include applications and how key features relate to characteristics of a situation, making selection of a particular type of function model appropriate.

INDICATOR F.IF.7.a. Graph linear functions and indicate intercepts. (A1, M1)

DOMAIN / ACADEMIC CONTENT STANDARD	OH.F.	Functions Standards
STANDARD / BENCHMARK	F.LE.	LINEAR, QUADRATIC, AND EXPONENTIAL MODELS
BENCHMARK / GRADE LEVEL INDICATOR		Construct and compare linear, quadratic, and exponential models, and solve problems.
PROFICIENCY LEVEL	F.LE.1.	Distinguish between situations that can be modeled with linear functions and with exponential functions.

INDICATOR F.LE.1.a. Show that linear functions grow by equal differences over equal intervals and that exponential functions grow by equal factors over equal intervals.

DOMAIN / ACADEMIC CONTENT STANDARD	OH.G.	Geometry Standards
STANDARD / BENCHMARK	G.GPE.	EXPRESSING GEOMETRIC PROPERTIES WITH EQUATIONS
BENCHMARK / GRADE LEVEL INDICATOR		Use coordinates to prove simple geometric theorems algebraically and to verify specific geometric statements.

PROFICIENCY LEVEL G.GPE.5. Justify the slope criteria for parallel and perpendicular lines, and use them to solve geometric problems, e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point.

**Ohio Learning Standards
Science
Grade 11 - Adopted: 2018**

DOMAIN / ACADEMIC CONTENT STANDARD		Environmental Science
STANDARD / BENCHMARK		EARTH SYSTEMS: INTERCONNECTED SPHERES OF EARTH
BENCHMARK / GRADE LEVEL INDICATOR	ENV.ES. 5:	Movement of matter and energy through the hydrosphere, lithosphere, atmosphere and biosphere

PROFICIENCY LEVEL Climate

DOMAIN / ACADEMIC CONTENT STANDARD		Environmental Science
STANDARD / BENCHMARK		EARTH'S RESOURCES
BENCHMARK / GRADE LEVEL INDICATOR	ENV.ER. 1:	Energy resources

PROFICIENCY LEVEL Renewable and nonrenewable energy sources and efficiency

PROFICIENCY LEVEL	Alternate energy sources and efficiency
-------------------	---

PROFICIENCY LEVEL	Resource availability
-------------------	-----------------------

DOMAIN / ACADEMIC CONTENT STANDARD		Environmental Science
STANDARD / BENCHMARK		EARTH'S RESOURCES
BENCHMARK / GRADE LEVEL INDICATOR	ENV.ER. 2:	Air and air pollution

PROFICIENCY LEVEL	Greenhouse gases
-------------------	------------------

DOMAIN / ACADEMIC CONTENT STANDARD		Environmental Science
STANDARD / BENCHMARK	ENV.GP:	GLOBAL ENVIRONMENTAL PROBLEMS AND ISSUES

BENCHMARK / GRADE LEVEL INDICATOR	ENV.GP. 3:	Climate change
-----------------------------------	------------	----------------

BENCHMARK / GRADE LEVEL INDICATOR	ENV.GP. 4:	Sustainability
-----------------------------------	------------	----------------

BENCHMARK / GRADE LEVEL INDICATOR	ENV.GP. 6:	Air quality
-----------------------------------	------------	-------------

DOMAIN / ACADEMIC CONTENT STANDARD		Physical Geology
STANDARD / BENCHMARK	PG.ER:	EARTH'S RESOURCES
BENCHMARK / GRADE LEVEL INDICATOR	PG.ER.1 :	Energy resources

PROFICIENCY LEVEL	Renewable and nonrenewable energy sources and efficiency
-------------------	--

PROFICIENCY LEVEL	Alternate energy sources and efficiency
-------------------	---

PROFICIENCY LEVEL	Resource availability
-------------------	-----------------------

DOMAIN / ACADEMIC CONTENT STANDARD		Physical Geology
STANDARD / BENCHMARK	PG.ER:	EARTH'S RESOURCES
BENCHMARK / GRADE LEVEL INDICATOR	PG.ER.2 :	Air

PROFICIENCY
LEVEL Greenhouse gases

DOMAIN / ACADEMIC CONTENT STANDARD		Physical Science
STANDARD / BENCHMARK	PS.M:	STUDY OF MATTER
BENCHMARK / GRADE LEVEL INDICATOR	PS.M.5:	Reactions of matter

PROFICIENCY
LEVEL Chemical reactions

DOMAIN / ACADEMIC CONTENT STANDARD		Biology
STANDARD / BENCHMARK	B.DI:	DIVERSITY AND INDEPENDENCE OF LIFE
BENCHMARK / GRADE LEVEL INDICATOR	B.DI.3:	Loss of Diversity

PROFICIENCY
LEVEL Climate change

PROFICIENCY
LEVEL Anthropocene effects

DOMAIN / ACADEMIC CONTENT STANDARD		Chemistry
STANDARD / BENCHMARK	C.IM:	INTERACTIONS OF MATTER
BENCHMARK / GRADE LEVEL INDICATOR	C.IM.1:	Chemical reactions

PROFICIENCY
LEVEL Types of reactions

DOMAIN / ACADEMIC CONTENT STANDARD		Environmental Science
STANDARD / BENCHMARK		EARTH SYSTEMS: INTERCONNECTED SPHERES OF EARTH
BENCHMARK / GRADE LEVEL INDICATOR	ENV.ES. 5:	Movement of matter and energy through the hydrosphere, lithosphere, atmosphere and biosphere

PROFICIENCY LEVEL Climate

DOMAIN / ACADEMIC CONTENT STANDARD		Environmental Science
STANDARD / BENCHMARK		EARTH'S RESOURCES
BENCHMARK / GRADE LEVEL INDICATOR	ENV.ER. 1:	Energy resources

PROFICIENCY LEVEL Renewable and nonrenewable energy sources and efficiency

PROFICIENCY LEVEL Alternate energy sources and efficiency

PROFICIENCY LEVEL Resource availability

DOMAIN / ACADEMIC CONTENT STANDARD		Environmental Science
STANDARD / BENCHMARK		EARTH'S RESOURCES
BENCHMARK / GRADE LEVEL INDICATOR	ENV.ER. 2:	Air and air pollution

PROFICIENCY LEVEL Greenhouse gases

DOMAIN / ACADEMIC CONTENT STANDARD		Environmental Science
STANDARD / BENCHMARK	ENV.GP:	GLOBAL ENVIRONMENTAL PROBLEMS AND ISSUES

BENCHMARK / GRADE LEVEL INDICATOR ENV.GP. 3: Climate change

BENCHMARK /
GRADE LEVEL
INDICATOR

ENV.GP. Sustainability
4:

BENCHMARK /
GRADE LEVEL
INDICATOR

ENV.GP. Air quality
6:

DOMAIN / ACADEMIC CONTENT STANDARD		Physical Geology
STANDARD / BENCHMARK	PG.ER:	EARTH'S RESOURCES
BENCHMARK / GRADE LEVEL INDICATOR	PG.ER.1 :	Energy resources

PROFICIENCY
LEVEL

Renewable and nonrenewable energy sources and efficiency

PROFICIENCY
LEVEL

Alternate energy sources and efficiency

PROFICIENCY
LEVEL

Resource availability

DOMAIN / ACADEMIC CONTENT STANDARD		Physical Geology
STANDARD / BENCHMARK	PG.ER:	EARTH'S RESOURCES
BENCHMARK / GRADE LEVEL INDICATOR	PG.ER.2 :	Air

PROFICIENCY
LEVEL

Greenhouse gases

DOMAIN / ACADEMIC CONTENT STANDARD		Physical Science
STANDARD / BENCHMARK	PS.M:	STUDY OF MATTER
BENCHMARK / GRADE LEVEL INDICATOR	PS.M.5:	Reactions of matter

PROFICIENCY
LEVEL

Chemical reactions

DOMAIN / ACADEMIC CONTENT STANDARD		Biology
---	--	----------------

STANDARD / BENCHMARK	B.DI:	DIVERSITY AND INDEPENDENCE OF LIFE
BENCHMARK / GRADE LEVEL INDICATOR	B.DI.3:	Loss of Diversity

PROFICIENCY LEVEL Climate change

PROFICIENCY LEVEL Anthropocene effects

DOMAIN / ACADEMIC CONTENT STANDARD		Chemistry
---	--	------------------

STANDARD / BENCHMARK	C.IM:	INTERACTIONS OF MATTER
BENCHMARK / GRADE LEVEL INDICATOR	C.IM.1:	Chemical reactions

PROFICIENCY LEVEL Types of reactions

**Ohio Learning Standards
Technology Education
Grade 11 - Adopted: 2017**

DOMAIN / ACADEMIC CONTENT STANDARD		Ohio Learning Standards in Technology
---	--	--

STANDARD / BENCHMARK		Design and Technology: Addresses the nature of technology to develop and improve products and systems over time to meet human/societal needs and wants through design processes.
BENCHMARK / GRADE LEVEL INDICATOR	Topic 2:	Identify a problem and use an engineering design process to solve the problem.

PROFICIENCY LEVEL 9-12.DT.2.a. Evaluate a design solution using conceptual, physical, digital and mathematical models at various intervals of the design process in order to check for proper design and note areas where improvements are needed (e.g., check the design solutions against criteria and constraints).

PROFICIENCY LEVEL 9-12.DT.2.b. Implement, document and present the design process as applied to a particular product, process or problem.

Grade 11 - Adopted: 2022

DOMAIN / ACADEMIC CONTENT STANDARD		Computer Science, Grade 9-12 Foundational Level
---	--	--

STANDARD / BENCHMARK		COMPUTING SYSTEMS
BENCHMARK / GRADE LEVEL INDICATOR		Troubleshooting

PROFICIENCY LEVEL CS.T.9-12.F.a. Apply a systemic process to identify problems and take steps to correct them within an integrated computing system.

DOMAIN / ACADEMIC CONTENT STANDARD		Computer Science, Grade 9-12 Foundational Level
STANDARD / BENCHMARK		ALGORITHMIC THINKING AND PROGRAMMING
BENCHMARK / GRADE LEVEL INDICATOR		Algorithms

PROFICIENCY LEVEL ATP.A.9-12.F.a. Define and use appropriate problem solving strategies and visual artifacts to create and refine a solution to a real-world problem.

PROFICIENCY LEVEL ATP.A.9-12.F.b. Define and implement an algorithm by decomposing problem requirements from a problem statement to solve a problem.

PROFICIENCY LEVEL ATP.A.9-12.F.c. Define and explain iterative algorithms to understand how and when to apply them.

PROFICIENCY LEVEL ATP.A.9-12.F.d. Define and explain recursive algorithms to understand how and when to apply them.

DOMAIN / ACADEMIC CONTENT STANDARD		Computer Science, Grade 9-12 Foundational Level
STANDARD / BENCHMARK		ALGORITHMIC THINKING AND PROGRAMMING
BENCHMARK / GRADE LEVEL INDICATOR		Modularity

PROFICIENCY LEVEL ATP.M.9-12.F.b. Create computational artifacts by systematically organizing, manipulating and/or processing data.

DOMAIN / ACADEMIC CONTENT STANDARD		Computer Science, Grade 9-12 Foundational Level
STANDARD / BENCHMARK		ALGORITHMIC THINKING AND PROGRAMMING
BENCHMARK / GRADE LEVEL INDICATOR		Program Development

PROFICIENCY LEVEL ATP.PD.9-12.F.c. Correctly use consistent naming conventions, version control and comments to demonstrate why these are important for future use, maintenance and reuse of code.

DOMAIN / ACADEMIC CONTENT STANDARD		Computer Science, Grade 9-12 Foundational Level
STANDARD / BENCHMARK		ARTIFICIAL INTELLIGENCE
BENCHMARK / GRADE LEVEL INDICATOR		Representation & Reasoning

PROFICIENCY LEVEL	AI.RR.9-12.F.b.	For each of these types of reasoning problems (classification, prediction, sequential decision-making, combinatorial search, heuristic search, adversarial search, logical deduction and statistical inference), list an algorithm that could be used to solve that problem.
PROFICIENCY LEVEL	AI.RR.9-12.F.c.	Describe the differences between types of search algorithms.
DOMAIN / ACADEMIC CONTENT STANDARD		Computer Science, Grade 9-12 Foundational Level
STANDARD / BENCHMARK		ARTIFICIAL INTELLIGENCE
BENCHMARK / GRADE LEVEL INDICATOR		Machine Learning
PROFICIENCY LEVEL	AI.ML.9-12.F.b.	Use either a supervised or unsupervised learning algorithm to train a model on real-world data, then evaluate the results.
DOMAIN / ACADEMIC CONTENT STANDARD		Computer Science, Grade 9-12 Foundational Level
STANDARD / BENCHMARK		ARTIFICIAL INTELLIGENCE
BENCHMARK / GRADE LEVEL INDICATOR		Natural Interaction
PROFICIENCY LEVEL	AI.NI.9-12.F.a.	Construct context-free grammar to parse simple languages and use language-processing tools to construct a chatbot. Use sentiment analysis tools to extract emotional tone from text.
DOMAIN / ACADEMIC CONTENT STANDARD		Computer Science, Grade 9-12 Advanced Level
STANDARD / BENCHMARK		ALGORITHMIC THINKING AND PROGRAMMING
BENCHMARK / GRADE LEVEL INDICATOR		Algorithms
PROFICIENCY LEVEL	ATP.A.9-12.A.a.	Define and explain iterative and recursive algorithms to understand how and when to apply them.
PROFICIENCY LEVEL	ATP.A.9-12.A.d.	Define and explain sorting and searching algorithms to understand how and when to apply them.
PROFICIENCY LEVEL	ATP.A.9-12.A.f.	Compare and contrast classical, cluster and quantum computing algorithms.

DOMAIN / ACADEMIC CONTENT STANDARD		Ohio Learning Standards in Technology
STANDARD / BENCHMARK		Design and Technology: Addresses the nature of technology to develop and improve products and systems over time to meet human/societal needs and wants through design processes.
BENCHMARK / GRADE LEVEL INDICATOR	Topic 2:	Identify a problem and use an engineering design process to solve the problem.

PROFICIENCY LEVEL 9-12.DT.2.a. Evaluate a design solution using conceptual, physical, digital and mathematical models at various intervals of the design process in order to check for proper design and note areas where improvements are needed (e.g., check the design solutions against criteria and constraints).

PROFICIENCY LEVEL 9-12.DT.2.b. Implement, document and present the design process as applied to a particular product, process or problem.

Grade 12 - Adopted: 2022

DOMAIN / ACADEMIC CONTENT STANDARD		Computer Science, Grade 9-12 Foundational Level
STANDARD / BENCHMARK		COMPUTING SYSTEMS
BENCHMARK / GRADE LEVEL INDICATOR		Troubleshooting

PROFICIENCY LEVEL CS.T.9-12.F.a. Apply a systemic process to identify problems and take steps to correct them within an integrated computing system.

DOMAIN / ACADEMIC CONTENT STANDARD		Computer Science, Grade 9-12 Foundational Level
STANDARD / BENCHMARK		ALGORITHMIC THINKING AND PROGRAMMING
BENCHMARK / GRADE LEVEL INDICATOR		Algorithms

PROFICIENCY LEVEL ATP.A.9-12.F.a. Define and use appropriate problem solving strategies and visual artifacts to create and refine a solution to a real-world problem.

PROFICIENCY LEVEL ATP.A.9-12.F.b. Define and implement an algorithm by decomposing problem requirements from a problem statement to solve a problem.

PROFICIENCY LEVEL ATP.A.9-12.F.c. Define and explain iterative algorithms to understand how and when to apply them.

PROFICIENCY LEVEL ATP.A.9-12.F.d. Define and explain recursive algorithms to understand how and when to apply them.

DOMAIN / ACADEMIC CONTENT STANDARD		Computer Science, Grade 9-12 Foundational Level
---	--	--

STANDARD / BENCHMARK		ALGORITHMIC THINKING AND PROGRAMMING
BENCHMARK / GRADE LEVEL INDICATOR		Modularity

PROFICIENCY LEVEL ATP.M.9-12.F.b. Create computational artifacts by systematically organizing, manipulating and/or processing data.

DOMAIN / ACADEMIC CONTENT STANDARD		Computer Science, Grade 9-12 Foundational Level
---	--	--

STANDARD / BENCHMARK		ALGORITHMIC THINKING AND PROGRAMMING
BENCHMARK / GRADE LEVEL INDICATOR		Program Development

PROFICIENCY LEVEL ATP.PD.9-12.F.c. Correctly use consistent naming conventions, version control and comments to demonstrate why these are important for future use, maintenance and reuse of code.

DOMAIN / ACADEMIC CONTENT STANDARD		Computer Science, Grade 9-12 Foundational Level
---	--	--

STANDARD / BENCHMARK		ARTIFICIAL INTELLIGENCE
BENCHMARK / GRADE LEVEL INDICATOR		Representation & Reasoning

PROFICIENCY LEVEL AI.RR.9-12.F.b. For each of these types of reasoning problems (classification, prediction, sequential decision-making, combinatorial search, heuristic search, adversarial search, logical deduction and statistical inference), list an algorithm that could be used to solve that problem.

PROFICIENCY LEVEL AI.RR.9-12.F.c. Describe the differences between types of search algorithms.

DOMAIN / ACADEMIC CONTENT STANDARD		Computer Science, Grade 9-12 Foundational Level
---	--	--

STANDARD / BENCHMARK		ARTIFICIAL INTELLIGENCE
BENCHMARK / GRADE LEVEL INDICATOR		Machine Learning

PROFICIENCY LEVEL AI.ML.9-12.F.b. Use either a supervised or unsupervised learning algorithm to train a model on real-world data, then evaluate the results.

DOMAIN / ACADEMIC CONTENT STANDARD		Computer Science, Grade 9-12 Foundational Level
---	--	--

STANDARD / BENCHMARK		ARTIFICIAL INTELLIGENCE
-----------------------------	--	--------------------------------

BENCHMARK / GRADE LEVEL INDICATOR		Natural Interaction
--	--	----------------------------

PROFICIENCY LEVEL AI.NI.9-12.F.a. Construct context-free grammar to parse simple languages and use language-processing tools to construct a chatbot. Use sentiment analysis tools to extract emotional tone from text.

DOMAIN / ACADEMIC CONTENT STANDARD		Computer Science, Grade 9-12 Advanced Level
---	--	--

STANDARD / BENCHMARK		ALGORITHMIC THINKING AND PROGRAMMING
-----------------------------	--	---

BENCHMARK / GRADE LEVEL INDICATOR		Algorithms
--	--	-------------------

PROFICIENCY LEVEL ATP.A.9-12.A.a. Define and explain iterative and recursive algorithms to understand how and when to apply them.

PROFICIENCY LEVEL ATP.A.9-12.A.d. Define and explain sorting and searching algorithms to understand how and when to apply them.

PROFICIENCY LEVEL ATP.A.9-12.A.f. Compare and contrast classical, cluster and quantum computing algorithms.