

Main Criteria: Forward Education
Secondary Criteria: Washington State K-12 Learning Standards and Guidelines
Subjects: Mathematics, Science, Technology Education
Grades: 11, 12, Key Stage 4

Forward Education

Autonomous Electric Vehicles of the Future

Washington State K-12 Learning Standards and Guidelines
Mathematics
Grade 11 - Adopted: 2011

EALR	WA.MP.	Mathematical Practices
BIG IDEA / CORE CONTENT	MP.1.	Make sense of problems and persevere in solving them.
BIG IDEA / CORE CONTENT	MP.2.	Reason abstractly and quantitatively.
BIG IDEA / CORE CONTENT	MP.3.	Construct viable arguments and critique the reasoning of others.
BIG IDEA / CORE CONTENT	MP.4.	Model with mathematics.
BIG IDEA / CORE CONTENT	MP.8.	Look for and express regularity in repeated reasoning.

EALR	WA.A.	Algebra
BIG IDEA / CORE CONTENT	A-CED.	Creating Equations
CORE CONTENT / CONTENT STANDARD		Create equations that describe numbers or relationships.

CONTENT
STANDARD /
PERFORMANCE
EXPECTATION

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

EALR	WA.A.	Algebra
BIG IDEA / CORE CONTENT	A-REI.	Reasoning with Equations and Inequalities
CORE CONTENT / CONTENT STANDARD		Understand solving equations as a process of reasoning and explain the reasoning.

CONTENT STANDARD / PERFORMANCE EXPECTATION	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.
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EALR	WA.F.	Functions
BIG IDEA / CORE CONTENT	F-IF.	Interpreting Functions
CORE CONTENT / CONTENT STANDARD		Analyze functions using different representations.
CONTENT STANDARD / PERFORMANCE EXPECTATION	F-IF.7.	Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.

PERFORMANCE EXPECTATION F-IF.7(a) Graph linear and quadratic functions and show intercepts, maxima, and minima.

EALR	WA.F.	Functions
BIG IDEA / CORE CONTENT	F-LE.	Linear and Exponential Models
CORE CONTENT / CONTENT STANDARD		Construct and compare linear and exponential models and solve problems.
CONTENT STANDARD / PERFORMANCE EXPECTATION	F-LE.1.	Distinguish between situations that can be modeled with linear functions and with exponential functions.

PERFORMANCE EXPECTATION F-LE.1(a) Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals.

EALR	WA.G.	Geometry
BIG IDEA / CORE CONTENT	G-GPE.	Expressing Geometric Properties with Equations
CORE CONTENT / CONTENT STANDARD		Use coordinates to prove simple geometric theorems algebraically

CONTENT STANDARD / PERFORMANCE EXPECTATION G-GPE.5. Prove 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).

Washington State K-12 Learning Standards and Guidelines
Mathematics

Grade 12 - Adopted: 2011

EALR	WA.MP.	Mathematical Practices
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BIG IDEA / CORE CONTENT	MP.1.	Make sense of problems and persevere in solving them.
BIG IDEA / CORE CONTENT	MP.2.	Reason abstractly and quantitatively.
BIG IDEA / CORE CONTENT	MP.3.	Construct viable arguments and critique the reasoning of others.
BIG IDEA / CORE CONTENT	MP.4.	Model with mathematics.
BIG IDEA / CORE CONTENT	MP.8.	Look for and express regularity in repeated reasoning.

EALR	WA.A.	Algebra
BIG IDEA / CORE CONTENT	A-CED.	Creating Equations
CORE CONTENT / CONTENT STANDARD		Create equations that describe numbers or relationships.

CONTENT STANDARD / PERFORMANCE EXPECTATION

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

EALR	WA.A.	Algebra
BIG IDEA / CORE CONTENT	A-REI.	Reasoning with Equations and Inequalities
CORE CONTENT / CONTENT STANDARD		Understand solving equations as a process of reasoning and explain the reasoning.

CONTENT STANDARD / PERFORMANCE EXPECTATION

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.

EALR	WA.F.	Functions
BIG IDEA / CORE CONTENT	F-IF.	Interpreting Functions
CORE CONTENT / CONTENT STANDARD		Analyze functions using different representations.

CONTENT STANDARD / PERFORMANCE EXPECTATION	F-IF.7.	Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.
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PERFORMANCE EXPECTATION F-IF.7(a) Graph linear and quadratic functions and show intercepts, maxima, and minima.

EALR	WA.F.	Functions
BIG IDEA / CORE CONTENT	F-LE.	Linear and Exponential Models
CORE CONTENT / CONTENT STANDARD		Construct and compare linear and exponential models and solve problems.
CONTENT STANDARD / PERFORMANCE EXPECTATION	F-LE.1.	Distinguish between situations that can be modeled with linear functions and with exponential functions.

PERFORMANCE EXPECTATION F-LE.1(a) Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals.

EALR	WA.G.	Geometry
BIG IDEA / CORE CONTENT	G-GPE.	Expressing Geometric Properties with Equations
CORE CONTENT / CONTENT STANDARD		Use coordinates to prove simple geometric theorems algebraically

CONTENT STANDARD / PERFORMANCE EXPECTATION G-GPE.5. Prove 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).

Washington State K-12 Learning Standards and Guidelines

Science

Grade 11 - Adopted: 2014

EALR	WA.HS-PS.	PHYSICAL SCIENCE
BIG IDEA / CORE CONTENT	HS-PS1.	Matter and Its Interactions
CORE CONTENT / CONTENT STANDARD		Students who demonstrate understanding can:

CONTENT STANDARD / PERFORMANCE EXPECTATION HS-PS1-4. Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.

EALR	WA.HS-PS.	PHYSICAL SCIENCE
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BIG IDEA / CORE CONTENT	HS-PS3.	Energy
CORE CONTENT / CONTENT STANDARD		Students who demonstrate understanding can:

CONTENT STANDARD / PERFORMANCE EXPECTATION HS-PS3-3. Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy.

EALR	WA.HS-PS.	PHYSICAL SCIENCE
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BIG IDEA / CORE CONTENT	HS-PS4.	Waves and Their Applications in Technologies for Information Transfer
CORE CONTENT / CONTENT STANDARD		Students who demonstrate understanding can:

CONTENT STANDARD / PERFORMANCE EXPECTATION HS-PS4-2. Evaluate questions about the advantages of using a digital transmission and storage of information.

EALR	WA.HS-LS.	LIFE SCIENCE
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BIG IDEA / CORE CONTENT	HS-LS2.	Ecosystems: Interactions, Energy, and Dynamics
CORE CONTENT / CONTENT STANDARD		Students who demonstrate understanding can:

CONTENT STANDARD / PERFORMANCE EXPECTATION HS-LS2-7. Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.

EALR	WA.HS-ESS.	EARTH AND SPACE SCIENCE
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BIG IDEA / CORE CONTENT	HS-ESS2.	Earth's Systems
CORE CONTENT / CONTENT STANDARD		Students who demonstrate understanding can:

CONTENT STANDARD / PERFORMANCE EXPECTATION HS-ESS2-4. Use a model to describe how variations in the flow of energy into and out of Earth's systems result in changes in climate.

EALR	WA.HS-ESS.	EARTH AND SPACE SCIENCE
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BIG IDEA / CORE CONTENT	HS-ESS3.	Earth and Human Activity
CORE CONTENT / CONTENT STANDARD		Students who demonstrate understanding can:

CONTENT STANDARD / PERFORMANCE EXPECTATION	HS-ESS3-1.	Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.
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CONTENT STANDARD / PERFORMANCE EXPECTATION	HS-ESS3-2.	Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.
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CONTENT STANDARD / PERFORMANCE EXPECTATION	HS-ESS3-3.	Create a computational simulation to illustrate the relationships among management of natural resources, the sustainability of human populations, and biodiversity.
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CONTENT STANDARD / PERFORMANCE EXPECTATION	HS-ESS3-4.	Evaluate or refine a technological solution that reduces impacts of human activities on natural systems.
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CONTENT STANDARD / PERFORMANCE EXPECTATION	HS-ESS3-6.	Use a computational representation to illustrate the relationships among Earth systems and how those relationships are being modified due to human activity.
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EALR	WA.HS-ETS.	ENGINEERING DESIGN
BIG IDEA / CORE CONTENT	HS-ETS1.	Engineering Design
CORE CONTENT / CONTENT STANDARD		Students who demonstrate understanding can:

CONTENT STANDARD / PERFORMANCE EXPECTATION	HS-ETS1-1.	Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.
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CONTENT STANDARD / PERFORMANCE EXPECTATION	HS-ETS1-2.	Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.
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CONTENT STANDARD / PERFORMANCE EXPECTATION	HS-ETS1-3.	Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.
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EALR	WA.RST.11-12.	Reading Standards for Literacy in Science and Technical Subjects
BIG IDEA / CORE CONTENT		Key Ideas and Details

CORE CONTENT / CONTENT STANDARD RST.11-12.2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.

CORE CONTENT / CONTENT STANDARD RST.11-12.3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.

EALR	WA.RST.11-12.	Reading Standards for Literacy in Science and Technical Subjects
BIG IDEA / CORE CONTENT		Craft and Structure

CORE CONTENT / CONTENT STANDARD RST.11-12.4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.

CORE CONTENT / CONTENT STANDARD RST.11-12.5. Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.

EALR	WA.RST.11-12.	Reading Standards for Literacy in Science and Technical Subjects
BIG IDEA / CORE CONTENT		Integration of Knowledge and Ideas

CORE CONTENT / CONTENT STANDARD RST.11-12.9. Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.

EALR	WA.RST.11-12.	Reading Standards for Literacy in Science and Technical Subjects
BIG IDEA / CORE CONTENT		Range of Reading and Level of Text Complexity

CORE CONTENT / CONTENT STANDARD RST.11-12.10. By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.

EALR	WA.WHST.11-12.	Writing Standards for Literacy in Science and Technical Subjects
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BIG IDEA / CORE CONTENT		Text Types and Purposes
CORE CONTENT / CONTENT STANDARD	WHST.1 1-12.2.	Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.

CONTENT STANDARD / PERFORMANCE EXPECTATION WHST.11 -12.2(d) Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.

EALR	WA.WHS T.11-12.	Writing Standards for Literacy in Science and Technical Subjects
BIG IDEA / CORE CONTENT		Production and Distribution of Writing

CORE CONTENT / CONTENT STANDARD WHST.11 -12.4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

CORE CONTENT / CONTENT STANDARD WHST.11 -12.6. Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.

Washington State K-12 Learning Standards and Guidelines
Science
Grade 12 - Adopted: 2014

EALR	WA.HS-PS.	PHYSICAL SCIENCE
BIG IDEA / CORE CONTENT	HS-PS1.	Matter and Its Interactions
CORE CONTENT / CONTENT STANDARD		Students who demonstrate understanding can:

CONTENT STANDARD / PERFORMANCE EXPECTATION HS-PS1-4. Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.

EALR	WA.HS-PS.	PHYSICAL SCIENCE
BIG IDEA / CORE CONTENT	HS-PS3.	Energy
CORE CONTENT / CONTENT STANDARD		Students who demonstrate understanding can:

CONTENT STANDARD / PERFORMANCE EXPECTATION HS-PS3-3. Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy.

EALR	WA.HS-PS.	PHYSICAL SCIENCE
BIG IDEA / CORE CONTENT	HS-PS4.	Waves and Their Applications in Technologies for Information Transfer
CORE CONTENT / CONTENT STANDARD		Students who demonstrate understanding can:

CONTENT STANDARD / PERFORMANCE EXPECTATION HS-PS4-2. Evaluate questions about the advantages of using a digital transmission and storage of information.

EALR	WA.HS-LS.	LIFE SCIENCE
BIG IDEA / CORE CONTENT	HS-LS2.	Ecosystems: Interactions, Energy, and Dynamics
CORE CONTENT / CONTENT STANDARD		Students who demonstrate understanding can:

CONTENT STANDARD / PERFORMANCE EXPECTATION HS-LS2-7. Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.

EALR	WA.HS-ESS.	EARTH AND SPACE SCIENCE
BIG IDEA / CORE CONTENT	HS-ESS2.	Earth's Systems
CORE CONTENT / CONTENT STANDARD		Students who demonstrate understanding can:

CONTENT STANDARD / PERFORMANCE EXPECTATION HS-ESS2-4. Use a model to describe how variations in the flow of energy into and out of Earth's systems result in changes in climate.

EALR	WA.HS-ESS.	EARTH AND SPACE SCIENCE
BIG IDEA / CORE CONTENT	HS-ESS3.	Earth and Human Activity
CORE CONTENT / CONTENT STANDARD		Students who demonstrate understanding can:

CONTENT STANDARD / PERFORMANCE EXPECTATION	HS-ESS3-1.	Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.
CONTENT STANDARD / PERFORMANCE EXPECTATION	HS-ESS3-2.	Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.
CONTENT STANDARD / PERFORMANCE EXPECTATION	HS-ESS3-3.	Create a computational simulation to illustrate the relationships among management of natural resources, the sustainability of human populations, and biodiversity.
CONTENT STANDARD / PERFORMANCE EXPECTATION	HS-ESS3-4.	Evaluate or refine a technological solution that reduces impacts of human activities on natural systems.
CONTENT STANDARD / PERFORMANCE EXPECTATION	HS-ESS3-6.	Use a computational representation to illustrate the relationships among Earth systems and how those relationships are being modified due to human activity.

EALR	WA.HS-ETS.	ENGINEERING DESIGN
BIG IDEA / CORE CONTENT	HS-ETS1.	Engineering Design
CORE CONTENT / CONTENT STANDARD		Students who demonstrate understanding can:

CONTENT STANDARD / PERFORMANCE EXPECTATION	HS-ETS1-1.	Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.
CONTENT STANDARD / PERFORMANCE EXPECTATION	HS-ETS1-2.	Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.
CONTENT STANDARD / PERFORMANCE EXPECTATION	HS-ETS1-3.	Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.

Grade 12 - Adopted: 2010

EALR	WA.RST. 11-12.	Reading Standards for Literacy in Science and Technical Subjects
BIG IDEA / CORE CONTENT		Key Ideas and Details

CORE CONTENT / CONTENT STANDARD	RST.11-12.2.	Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
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CORE CONTENT / CONTENT STANDARD	RST.11-12.3.	Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.
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EALR	WA.RST.11-12.	Reading Standards for Literacy in Science and Technical Subjects
BIG IDEA / CORE CONTENT		Craft and Structure

CORE CONTENT / CONTENT STANDARD	RST.11-12.4.	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.
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CORE CONTENT / CONTENT STANDARD	RST.11-12.5.	Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.
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EALR	WA.RST.11-12.	Reading Standards for Literacy in Science and Technical Subjects
BIG IDEA / CORE CONTENT		Integration of Knowledge and Ideas

CORE CONTENT / CONTENT STANDARD	RST.11-12.9.	Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.
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EALR	WA.RST.11-12.	Reading Standards for Literacy in Science and Technical Subjects
BIG IDEA / CORE CONTENT		Range of Reading and Level of Text Complexity

CORE CONTENT / CONTENT STANDARD	RST.11-12.10.	By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.
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EALR	WA.WHST.11-12.	Writing Standards for Literacy in Science and Technical Subjects
BIG IDEA / CORE CONTENT		Text Types and Purposes
CORE CONTENT / CONTENT STANDARD	WHST.11-12.2.	Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.

CONTENT STANDARD / PERFORMANCE EXPECTATION	WHST.11 -12.2(d)	Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.
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EALR	WA.WHS T.11-12.	Writing Standards for Literacy in Science and Technical Subjects
BIG IDEA / CORE CONTENT		Production and Distribution of Writing

CORE CONTENT / CONTENT STANDARD	WHST.11 -12.4.	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
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CORE CONTENT / CONTENT STANDARD	WHST.11 -12.6.	Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.
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Washington State K-12 Learning Standards and Guidelines
Technology Education
Grade 11 - Adopted: 2018

EALR	WA.ET.9-12.	Educational Technology Learning Standards
BIG IDEA / CORE CONTENT	9-12.3.	Knowledge Constructor - Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others.

CORE CONTENT / CONTENT STANDARD	9-12.3.d.	Students build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions.
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EALR	WA.ET.9-12.	Educational Technology Learning Standards
BIG IDEA / CORE CONTENT	9-12.4.	Innovative Designer - Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions.

CORE CONTENT / CONTENT STANDARD	9-12.4.a.	Students know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.
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CORE CONTENT / CONTENT STANDARD	9-12.4.b.	Students select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.
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EALR	WA.ET.9-12.	Educational Technology Learning Standards
BIG IDEA / CORE CONTENT	9-12.5.	Computational Thinker - Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.

CORE CONTENT / CONTENT STANDARD	9-12.5.a.	Students formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions.
CORE CONTENT / CONTENT STANDARD	9-12.5.b.	Students collect data or identify relevant data sets, use digital tools to analyze them, and represent data in various ways to facilitate problem-solving and decision-making.
CORE CONTENT / CONTENT STANDARD	9-12.5.c.	Students break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.
CORE CONTENT / CONTENT STANDARD	9-12.5.d.	Students understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.

EALR		Computer Science
BIG IDEA / CORE CONTENT		Level 3B: 11-12
CORE CONTENT / CONTENT STANDARD	3B-AP.	Algorithms and Programming

CONTENT STANDARD / PERFORMANCE EXPECTATION	3B-AP- 10.	Use and adapt classic algorithms to solve computational problems. (P. 4.2)
CONTENT STANDARD / PERFORMANCE EXPECTATION	3B-AP- 11.	Evaluate algorithms in terms of their efficiency, correctness, and clarity. (P. 4.2)
CONTENT STANDARD / PERFORMANCE EXPECTATION	3B-AP- 13.	Illustrate the flow of execution of a recursive algorithm. (P. 3.2)
CONTENT STANDARD / PERFORMANCE EXPECTATION	3B-AP- 14.	Construct solutions to problems using student-created components, such as procedures, modules and/or objects. (P. 5.2)
CONTENT STANDARD / PERFORMANCE EXPECTATION	3B-AP- 20.	Use version control systems, integrated development environments (IDEs), and collaborative tools and practices (code documentation) in a group software project. (P. 2.4)

CONTENT STANDARD / PERFORMANCE EXPECTATION	3B-AP-21.	Develop and use a series of test cases to verify that a program performs according to its design specifications. (P. 6.1)
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Washington State K-12 Learning Standards and Guidelines
Technology Education
Grade 12 - Adopted: 2018

EALR	WA.ET.9-12.	Educational Technology Learning Standards
BIG IDEA / CORE CONTENT	9-12.3.	Knowledge Constructor - Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others.

CORE CONTENT / CONTENT STANDARD	9-12.3.d.	Students build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions.
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EALR	WA.ET.9-12.	Educational Technology Learning Standards
BIG IDEA / CORE CONTENT	9-12.4.	Innovative Designer - Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions.

CORE CONTENT / CONTENT STANDARD	9-12.4.a.	Students know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.
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CORE CONTENT / CONTENT STANDARD	9-12.4.b.	Students select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.
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EALR	WA.ET.9-12.	Educational Technology Learning Standards
BIG IDEA / CORE CONTENT	9-12.5.	Computational Thinker - Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.

CORE CONTENT / CONTENT STANDARD	9-12.5.a.	Students formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions.
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CORE CONTENT / CONTENT STANDARD	9-12.5.b.	Students collect data or identify relevant data sets, use digital tools to analyze them, and represent data in various ways to facilitate problem-solving and decision-making.
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CORE CONTENT / CONTENT STANDARD	9-12.5.c.	Students break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.
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CORE
CONTENT /
CONTENT
STANDARD

9-12.5.d. Students understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.

EALR		Computer Science
BIG IDEA / CORE CONTENT		Level 3B: 11-12
CORE CONTENT / CONTENT STANDARD	3B-AP.	Algorithms and Programming

CONTENT
STANDARD /
PERFORMANCE
EXPECTATION

3B-AP-10. Use and adapt classic algorithms to solve computational problems. (P. 4.2)

CONTENT
STANDARD /
PERFORMANCE
EXPECTATION

3B-AP-11. Evaluate algorithms in terms of their efficiency, correctness, and clarity. (P. 4.2)

CONTENT
STANDARD /
PERFORMANCE
EXPECTATION

3B-AP-13. Illustrate the flow of execution of a recursive algorithm. (P. 3.2)

CONTENT
STANDARD /
PERFORMANCE
EXPECTATION

3B-AP-14. Construct solutions to problems using student-created components, such as procedures, modules and/or objects. (P. 5.2)

CONTENT
STANDARD /
PERFORMANCE
EXPECTATION

3B-AP-20. Use version control systems, integrated development environments (IDEs), and collaborative tools and practices (code documentation) in a group software project. (P. 2.4)

CONTENT
STANDARD /
PERFORMANCE
EXPECTATION

3B-AP-21. Develop and use a series of test cases to verify that a program performs according to its design specifications. (P. 6.1)