Main Criteria: Forward Education

Secondary Criteria: Pennsylvania Core and Academic Standards, Rhode Island World-Class Standards, South Carolina Standards & Learning, South Dakota Content Standards, Tennessee Academic Standards, Texas Essential Knowledge and Skills (TEKS), Utah Core Standards, Vermont Content Standards, Virginia Standards of Learning, Washington State K-12 Learning Standards and Guidelines, Washington DC Academic Standards, West Virginia College and Career Readiness Standards, Wisconsin Academic Standards, Wyoming Content and Performance Standards

Subjects: Mathematics, Science, Technology Education

Grades: 7, 8, Key Stage 3

Forward Education

Smart Farming with Hydroponics & LED Grow Lights

Pennsylvania Core and Academic Standards

Mathematics

Grade **7** - Adopted: **2014**

SUBJECT / STANDARD AREA	PA.CC.MP.	Standards for Mathematical Practice
STANDARD AREA / STATEMENT	CC.MP.1.	Make sense of problems and persevere in solving them.
STANDARD AREA / STATEMENT	CC.MP.2.	Reason abstractly and quantitatively.
STANDARD AREA / STATEMENT	CC.MP.3.	Construct viable arguments and critique the reasoning of others.
STANDARD AREA / STATEMENT	CC.MP.4.	Model with mathematics.
STANDARD AREA / STATEMENT	CC.MP.6.	Attend to precision.
STANDARD AREA / STATEMENT	CC.MP.7.	Look for and make use of structure.
STANDARD AREA / STATEMENT	CC.MP.8.	Look for and express regularity in repeated reasoning.

Pennsylvania Core and Academic Standards

Mathematics

Grade **8** - Adopted: **2014**

SUBJECT / STANDARD AREA	PA.CC.MP.	Standards for Mathematical Practice
STANDARD AREA / STATEMENT	CC.MP.1.	Make sense of problems and persevere in solving them.

STANDARD AREA / STATEMENT	CC.MP.2.	Reason abstractly and quantitatively.
STANDARD AREA / STATEMENT	CC.MP.3.	Construct viable arguments and critique the reasoning of others.
STANDARD AREA / STATEMENT	CC.MP.4.	Model with mathematics.
STANDARD AREA / STATEMENT	CC.MP.6.	Attend to precision.
STANDARD AREA / STATEMENT	CC.MP.7.	Look for and make use of structure.
STANDARD AREA / STATEMENT	CC.MP.8.	Look for and express regularity in repeated reasoning.

SUBJECT / STANDARD AREA	**PA.CC.2.2.8.**	**Algebraic Concepts**
STANDARD AREA / STATEMENT	**CC.2.2.8.B.**	**Expressions and Equations**
STANDARD	CC.2.2.8.B.2.	Understand the connections between proportional relationships, lines, and linear equations.
STANDARD	CC.2.2.8.B.3.	Analyze and solve linear equations and pairs of simultaneous linear equations.

Pennsylvania Core and Academic Standards

Science

Grade **7** - Adopted: **2010**

SUBJECT / STANDARD AREA	**PA.SI.**	**Science as Inquiry**
STANDARD AREA / STATEMENT	SI.6.	Develop descriptions, explanations, and models using evidence and understand that these emphasize evidence, have logically consistent arguments, and are based on scientific principles, models, and theories.

SUBJECT / STANDARD AREA	**PA.3.**	**Science and Technology and Engineering Education**
STANDARD AREA / STATEMENT	**3.4.**	**Technology and Engineering Education**
STANDARD	**3.4.A.**	**The Scope of Technology**

DESCRIPTOR / STANDARD	3.4.7.A1.	Explain how technology is closely linked to creativity, which has resulted in innovation and invention.

SUBJECT / STANDARD AREA	**PA.3.**	**Science and Technology and Engineering Education**
STANDARD AREA / STATEMENT	**3.4.**	**Technology and Engineering Education**
STANDARD	**3.4.B.**	**Technology and Society**
DESCRIPTOR / STANDARD	3.4.7.B1.	Explain how the use of technology can have consequences that affect humans in many ways.
DESCRIPTOR / STANDARD	3.4.7.B2.	Explain how decisions to develop and use technologies may be influenced by environmental and economic concerns.
DESCRIPTOR / STANDARD	3.4.7.B3.	Describe how invention and innovation lead to changes in society and the creation of new needs and wants.
DESCRIPTOR / STANDARD	3.4.7.B4.	Explain how many inventions and innovations have evolved by using deliberate and methodical processes of tests and refinements.

SUBJECT / STANDARD AREA	**PA.3.**	**Science and Technology and Engineering Education**
STANDARD AREA / STATEMENT	**3.4.**	**Technology and Engineering Education**
STANDARD	**3.4.D.**	**Abilities for a Technological World**
DESCRIPTOR / STANDARD	3.4.7.D1.	Identify and collect information about everyday problems that can be solved by technology and generate ideas and requirements for solving a problem.
DESCRIPTOR / STANDARD	3.4.7.D3.	Use data collected to analyze and interpret trends in order to identify the positive or negative effects of a technology.

SUBJECT / STANDARD AREA	**PA.3.**	**Science and Technology and Engineering Education**
STANDARD AREA / STATEMENT	**3.4.**	**Technology and Engineering Education**
STANDARD	**3.4.E.**	**The Designed World**
DESCRIPTOR / STANDARD	3.4.7.E2.	Examine specialized equipment and practices used to improve the production of food, fiber, fuel, and other useful products and in the care of animals.

SUBJECT / STANDARD AREA	**PA.4.**	**Environment and Ecology**
STANDARD AREA / STATEMENT	**4.3.**	**Natural Resources**
STANDARD	**4.3.7.B.**	**Explain the distribution and management of natural resources.**

DESCRIPTOR / STANDARD	4.3.7.B.1.	conservation, preservation, and exploitation.

SUBJECT / STANDARD AREA	**PA.4.**	**Environment and Ecology**
STANDARD AREA / STATEMENT	**4.4.**	**Agriculture and Society**
STANDARD	4.4.7.A.	Describe how agricultural practices, the environment, and the availability of natural resources are related.
STANDARD	4.4.7.B.	Describe the economic importance of agriculture to society.
STANDARD	4.4.7.C.	Investigate resources, their relation to land use, and their impact on the food and fiber system.
STANDARD	4.4.7.D.	Identify the positive and negative effects of technology used in agriculture and its effects on the food and fiber system and the environment over time.

SUBJECT / STANDARD AREA	**PA.4.**	**Environment and Ecology**
STANDARD AREA / STATEMENT	**4.5.**	**Humans and the Environment**
STANDARD	**4.5.7.A.**	**Describe how the development of civilization affects the use of natural resources.**
DESCRIPTOR / STANDARD	4.5.7.A.1.	Compare and contrast how people use natural resources in sustainable and nonsustainable ways throughout the world.

Grade **7** - Adopted: **2014**

SUBJECT / STANDARD AREA	**PA.CC.3.5.6-8.**	**Reading Informational Text: Students read, understand, and respond to informational text – with emphasis on comprehension, making connections among ideas and between texts with focus on textual evidence.**
STANDARD AREA / STATEMENT		**Key Ideas and Details**
STANDARD	CC.3.5.6-8.B.	Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.

SUBJECT / STANDARD AREA	**PA.CC.3.5.6-8.**	**Reading Informational Text: Students read, understand, and respond to informational text – with emphasis on comprehension, making connections among ideas and between texts with focus on textual evidence.**
STANDARD AREA / STATEMENT		**Integration of Knowledge and Ideas**
STANDARD	CC.3.5.6-8.I.	Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.

SUBJECT / STANDARD AREA	**PA.CC.3.5.6-8.**	**Reading Informational Text: Students read, understand, and respond to informational text – with emphasis on comprehension, making connections among ideas and between texts with focus on textual evidence.**

STANDARD AREA / STATEMENT		**Range and Level of Complex Texts**
STANDARD	CC.3.5.6-8.J.	By the end of grade 8, read and comprehend science/technical texts in the grades 6–8 text complexity band independently and proficiently.

Pennsylvania Core and Academic Standards

Science

Grade **8** - Adopted: **2010**

SUBJECT / STANDARD AREA	**PA.SI.**	**Science as Inquiry**
STANDARD AREA / STATEMENT	SI.4.	Formulate and revise explanations and models using logic and evidence.
STANDARD AREA / STATEMENT	SI.5.	Recognize and analyze alternative explanations and models.

SUBJECT / STANDARD AREA	**PA.3.**	**Science and Technology and Engineering Education**
STANDARD AREA / STATEMENT	**3.4.**	**Technology and Engineering Education**
STANDARD	**3.4.A.**	**The Scope of Technology**
DESCRIPTOR / STANDARD	3.4.8.A1.	Analyze the development of technology based on affordability or urgency.

SUBJECT / STANDARD AREA	**PA.3.**	**Science and Technology and Engineering Education**
STANDARD AREA / STATEMENT	**3.4.**	**Technology and Engineering Education**
STANDARD	**3.4.B.**	**Technology and Society**
DESCRIPTOR / STANDARD	3.4.8.B2.	Compare and contrast decisions to develop and use technologies as related to environmental and economic concerns.
DESCRIPTOR / STANDARD	3.4.8.B3.	Explain how throughout history, new technologies have resulted from the demands, values, and interests of individuals, businesses, industries, and societies.
DESCRIPTOR / STANDARD	3.4.8.B4.	Explain how societal and cultural priorities and values are reflected in technological devices.

SUBJECT / STANDARD AREA	**PA.4.**	**Environment and Ecology**
STANDARD AREA / STATEMENT	**4.5.**	**Humans and the Environment**

STANDARD	4.5.8.A.	Explain how Best Management Practices (BMP) can be used to mitigate environmental problems.

Grade **8** - Adopted: **2014**

SUBJECT / STANDARD AREA	**PA.CC.3.5.6-8.**	**Reading Informational Text: Students read, understand, and respond to informational text – with emphasis on comprehension, making connections among ideas and between texts with focus on textual evidence.**
STANDARD AREA / STATEMENT		**Key Ideas and Details**
STANDARD	CC.3.5.6-8.B.	Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.

SUBJECT / STANDARD AREA	**PA.CC.3.5.6-8.**	**Reading Informational Text: Students read, understand, and respond to informational text – with emphasis on comprehension, making connections among ideas and between texts with focus on textual evidence.**
STANDARD AREA / STATEMENT		**Integration of Knowledge and Ideas**
STANDARD	CC.3.5.6-8.I.	Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.

SUBJECT / STANDARD AREA	**PA.CC.3.5.6-8.**	**Reading Informational Text: Students read, understand, and respond to informational text – with emphasis on comprehension, making connections among ideas and between texts with focus on textual evidence.**
STANDARD AREA / STATEMENT		**Range and Level of Complex Texts**
STANDARD	CC.3.5.6-8.J.	By the end of grade 8, read and comprehend science/technical texts in the grades 6–8 text complexity band independently and proficiently.

Pennsylvania Core and Academic Standards

Technology Education

Grade **7** - Adopted: **2017**

SUBJECT / STANDARD AREA	**CSTA.2.**	**Level 2 (Ages 11-14)**
STANDARD AREA / STATEMENT	**2-AP.**	**Algorithms & Programming**
STANDARD		**Algorithms**
DESCRIPTOR / STANDARD	2-AP-10.	Use flowcharts and/or pseudocode to address complex problems as algorithms. (P4.4, P4.1)

SUBJECT / STANDARD AREA	**CSTA.2.**	**Level 2 (Ages 11-14)**
STANDARD AREA / STATEMENT	**2-AP.**	**Algorithms & Programming**
STANDARD		**Modularity**

DESCRIPTOR / STANDARD	2-AP-13.	Decompose problems and subproblems into parts to facilitate the design, implementation, and review of programs. (P3.2)

SUBJECT / STANDARD AREA	**CSTA.2.**	**Level 2 (Ages 11-14)**
STANDARD AREA / STATEMENT	**2-AP.**	**Algorithms & Programming**
STANDARD		**Program Development**

DESCRIPTOR / STANDARD	2-AP-15.	Seek and incorporate feedback from team members and users to refine a solution that meets user needs. (P2.3, P1.1)

SUBJECT / STANDARD AREA	**CSTA.2.**	**Level 2 (Ages 11-14)**
STANDARD AREA / STATEMENT	**2-IC.**	**Impacts of Computing**
STANDARD		**Social Interactions**

DESCRIPTOR / STANDARD	2-IC-22.	Collaborate with many contributors through strategies such as crowdsourcing or surveys when creating a computational artifact. (P2.4, P5.2)

Pennsylvania Core and Academic Standards

Technology Education

Grade **8** - Adopted: **2017**

SUBJECT / STANDARD AREA	**CSTA.2.**	**Level 2 (Ages 11-14)**
STANDARD AREA / STATEMENT	**2-AP.**	**Algorithms & Programming**
STANDARD		**Algorithms**

DESCRIPTOR / STANDARD	2-AP-10.	Use flowcharts and/or pseudocode to address complex problems as algorithms. (P4.4, P4.1)

SUBJECT / STANDARD AREA	**CSTA.2.**	**Level 2 (Ages 11-14)**
STANDARD AREA / STATEMENT	**2-AP.**	**Algorithms & Programming**
STANDARD		**Modularity**

DESCRIPTOR / STANDARD	2-AP-13.	Decompose problems and subproblems into parts to facilitate the design, implementation, and review of programs. (P3.2)

SUBJECT / STANDARD AREA	**CSTA.2.**	**Level 2 (Ages 11-14)**
STANDARD AREA / STATEMENT	**2-AP.**	**Algorithms & Programming**

STANDARD		**Program Development**
DESCRIPTOR / STANDARD	2-AP-15.	Seek and incorporate feedback from team members and users to refine a solution that meets user needs. (P2.3, P1.1)

SUBJECT / STANDARD AREA	**CSTA.2.**	**Level 2 (Ages 11-14)**
STANDARD AREA / STATEMENT	**2-IC.**	**Impacts of Computing**
STANDARD		**Social Interactions**
DESCRIPTOR / STANDARD	2-IC-22.	Collaborate with many contributors through strategies such as crowdsourcing or surveys when creating a computational artifact. (P2.4, P5.2)

Rhode Island World-Class Standards

Mathematics

Grade **7** - Adopted: **2021**

DOMAIN		**The Standards for Mathematical Practice**
STATEMENT OF ENDURING KNOWLEDGE	MP1	Make sense of problems and persevere in solving them.
STATEMENT OF ENDURING KNOWLEDGE	MP2	Reason abstractly and quantitatively.
STATEMENT OF ENDURING KNOWLEDGE	MP3	Construct viable arguments and critique the reasoning of others.
STATEMENT OF ENDURING KNOWLEDGE	MP4	Model with mathematics.
STATEMENT OF ENDURING KNOWLEDGE	MP6	Attend to precision.
STATEMENT OF ENDURING KNOWLEDGE	MP7	Look for and make use of structure.
STATEMENT OF ENDURING KNOWLEDGE	MP8	Look for and express regularity in repeated reasoning.

DOMAIN		**Grade 7 Content Standards**
STATEMENT OF ENDURING KNOWLEDGE	**7.NS.**	**The Number System**

GSE STEM	**7.NS.A.**	**Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.**
SPECIFIC INDICATOR	**7.NS.A.1.**	**Apply and extend previous understandings of addition and subtraction to add and subtract integers and other rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.**
INDICATOR	7.NS.A.1.d.	Apply properties of operations as strategies to add and subtract rational numbers.

DOMAIN		**Grade 7 Content Standards**
STATEMENT OF ENDURING KNOWLEDGE	**7.NS.**	**The Number System**
GSE STEM	**7.NS.A.**	**Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.**
SPECIFIC INDICATOR	**7.NS.A.2.**	**Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide integers and other rational numbers.**
INDICATOR	7.NS.A.2.a.	Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (–1)(–1) = 1 and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.
INDICATOR	7.NS.A.2.c.	Apply properties of operations as strategies to multiply and divide rational numbers.

DOMAIN		**Grade 7 Content Standards**
STATEMENT OF ENDURING KNOWLEDGE	**7.EE.**	**Expressions and Equations**
GSE STEM	**7.EE.B.**	**Solve real-life and mathematical problems using numerical and algebraic expressions and equations.**
SPECIFIC INDICATOR	**7.EE.B.4.**	**Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.**
INDICATOR	7.EE.B.4.a.	Solve word problems leading to equations of the form px + q = r and p(x ÷ q) = r, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach.

Rhode Island World-Class Standards

Mathematics

Grade **8** - Adopted: **2021**

DOMAIN		**The Standards for Mathematical Practice**
STATEMENT OF ENDURING KNOWLEDGE	MP1	Make sense of problems and persevere in solving them.
STATEMENT OF ENDURING KNOWLEDGE	MP2	Reason abstractly and quantitatively.
STATEMENT OF ENDURING KNOWLEDGE	MP3	Construct viable arguments and critique the reasoning of others.

STATEMENT OF ENDURING KNOWLEDGE	MP4	Model with mathematics.
STATEMENT OF ENDURING KNOWLEDGE	MP6	Attend to precision.
STATEMENT OF ENDURING KNOWLEDGE	MP7	Look for and make use of structure.
STATEMENT OF ENDURING KNOWLEDGE	MP8	Look for and express regularity in repeated reasoning.

DOMAIN		Grade 8 Content Standards
STATEMENT OF ENDURING KNOWLEDGE	**8.EE.**	**Expressions and Equations**
GSE STEM	**8.EE.C.**	**Analyze and solve linear equations and pairs of simultaneous linear equations.**
SPECIFIC INDICATOR	**8.EE.C.7.**	**Solve linear equations in one variable.**
INDICATOR	8.EE.C.7.a.	Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers).
INDICATOR	8.EE.C.7.b.	Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.

Rhode Island World-Class Standards

Science

Grade **7** - Adopted: **2013**

DOMAIN	NGSS.MS-LS.	LIFE SCIENCE
STATEMENT OF ENDURING KNOWLEDGE	**MS-LS2.**	**Ecosystems: Interactions, Energy, and Dynamics**
GSE STEM		**Students who demonstrate understanding can:**
SPECIFIC INDICATOR	MS-LS2-5.	Evaluate competing design solutions for maintaining biodiversity and ecosystem services.

DOMAIN	NGSS.MS-ESS.	EARTH AND SPACE SCIENCE
STATEMENT OF ENDURING KNOWLEDGE	**MS-ESS3.**	**Earth and Human Activity**
GSE STEM		**Students who demonstrate understanding can:**
SPECIFIC INDICATOR	MS-ESS3-3.	Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.

SPECIFIC INDICATOR	MS-ESS3-4.	Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.

Grade **7** - Adopted: **2010**

DOMAIN	**RST.6-8.**	**Reading Standards for Literacy in Science and Technical Subjects**
STATEMENT OF ENDURING KNOWLEDGE		**Key Ideas and Details**
GSE STEM	RST.6-8.2.	Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.

DOMAIN	**RST.6-8.**	**Reading Standards for Literacy in Science and Technical Subjects**
STATEMENT OF ENDURING KNOWLEDGE		**Integration of Knowledge and Ideas**
GSE STEM	RST.6-8.9.	Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.

DOMAIN	**RST.6-8.**	**Reading Standards for Literacy in Science and Technical Subjects**
STATEMENT OF ENDURING KNOWLEDGE		**Range of Reading and Level of Text Complexity**
GSE STEM	RST.6-8.10.	By the end of grade 8, read and comprehend science/technical texts in the grades 6-8 text complexity band independently and proficiently.

Rhode Island World-Class Standards

Science

Grade **8** - Adopted: **2013**

DOMAIN	**NGSS.MS-LS.**	**LIFE SCIENCE**
STATEMENT OF ENDURING KNOWLEDGE	**MS-LS2.**	**Ecosystems: Interactions, Energy, and Dynamics**
GSE STEM		**Students who demonstrate understanding can:**
SPECIFIC INDICATOR	MS-LS2-5.	Evaluate competing design solutions for maintaining biodiversity and ecosystem services.

DOMAIN	**NGSS.MS-ESS.**	**EARTH AND SPACE SCIENCE**
STATEMENT OF ENDURING KNOWLEDGE	**MS-ESS3.**	**Earth and Human Activity**
GSE STEM		**Students who demonstrate understanding can:**
SPECIFIC INDICATOR	MS-ESS3-3.	Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.
SPECIFIC INDICATOR	MS-ESS3-4.	Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.

Grade **8** - Adopted: **2010**

DOMAIN	RST.6-8.	Reading Standards for Literacy in Science and Technical Subjects
STATEMENT OF ENDURING KNOWLEDGE		Key Ideas and Details
GSE STEM	RST.6-8.2.	Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.

DOMAIN	RST.6-8.	Reading Standards for Literacy in Science and Technical Subjects
STATEMENT OF ENDURING KNOWLEDGE		Integration of Knowledge and Ideas
GSE STEM	RST.6-8.9.	Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.

DOMAIN	RST.6-8.	Reading Standards for Literacy in Science and Technical Subjects
STATEMENT OF ENDURING KNOWLEDGE		Range of Reading and Level of Text Complexity
GSE STEM	RST.6-8.10.	By the end of grade 8, read and comprehend science/technical texts in the grades 6-8 text complexity band independently and proficiently.

Rhode Island World-Class Standards

Technology Education

Grade **7** - Adopted: **2016**

DOMAIN		ISTE Standards for Students
STATEMENT OF ENDURING KNOWLEDGE	RI.ISTE-S.3.	Knowledge Constructors: 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.
GSE STEM	ISTE-S.3.d.	Build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions.

DOMAIN		ISTE Standards for Students
STATEMENT OF ENDURING KNOWLEDGE	RI.ISTE-S.4.	Innovative Designers: Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions.
GSE STEM	ISTE-S.4.a.	Know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.
GSE STEM	ISTE-S.4.b.	Select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.

DOMAIN		ISTE Standards for Students
STATEMENT OF ENDURING KNOWLEDGE	RI.ISTE-S.5.	Computational Thinkers: Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.
GSE STEM	ISTE-S.5.a.	Formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models, and algorithmic thinking in exploring and finding solutions.

GSE STEM	ISTE-S.5.b.	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.
GSE STEM	ISTE-S.5.d.	Understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.

Grade **7** - Adopted: **2018**

DOMAIN		**Computer Science**
STATEMENT OF ENDURING KNOWLEDGE	**2-CT.**	**Computational Thinking & Programming**
GSE STEM	**2-CT-A.**	**Algorithms**
SPECIFIC INDICATOR	2-CT-A-1.	Use diagrams and/or pseudocode to plan, analyze, solve and/or code complex problems as algorithms.

Rhode Island World-Class Standards

Technology Education

Grade **8** - Adopted: **2016**

DOMAIN		**ISTE Standards for Students**
STATEMENT OF ENDURING KNOWLEDGE	**RI.ISTE-S.3.**	**Knowledge Constructors: 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.**
GSE STEM	ISTE-S.3.d.	Build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions.

DOMAIN		**ISTE Standards for Students**
STATEMENT OF ENDURING KNOWLEDGE	**RI.ISTE-S.4.**	**Innovative Designers: Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions.**
GSE STEM	ISTE-S.4.a.	Know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.
GSE STEM	ISTE-S.4.b.	Select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.

DOMAIN		**ISTE Standards for Students**
STATEMENT OF ENDURING KNOWLEDGE	**RI.ISTE-S.5.**	**Computational Thinkers: Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.**
GSE STEM	ISTE-S.5.a.	Formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models, and algorithmic thinking in exploring and finding solutions.
GSE STEM	ISTE-S.5.b.	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.
GSE STEM	ISTE-S.5.d.	Understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.

Grade **8** - Adopted: **2018**

DOMAIN		Computer Science
STATEMENT OF ENDURING KNOWLEDGE	2-CT.	Computational Thinking & Programming
GSE STEM	2-CT-A.	Algorithms
SPECIFIC INDICATOR	2-CT-A-1.	Use diagrams and/or pseudocode to plan, analyze, solve and/or code complex problems as algorithms.

South Carolina Standards & Learning

Mathematics

Grade **7** - Adopted: **2015**

STANDARD / COURSE	SC.PS.	South Carolina College- and Career-Ready Mathematical Process Standards
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION	PS.1.	Make sense of problems and persevere in solving them.
PERFORMANCE DESCRIPTOR / STANDARD	PS.1b.	Recognize there may be multiple entry points to a problem and more than one path to a solution.
PERFORMANCE DESCRIPTOR / STANDARD	PS.1c.	Analyze what is given, what is not given, what is being asked, and what strategies are needed, and make an initial attempt to solve a problem.
PERFORMANCE DESCRIPTOR / STANDARD	PS.1d.	Evaluate the success of an approach to solve a problem and refine it if necessary.

STANDARD / COURSE	SC.PS.	South Carolina College- and Career-Ready Mathematical Process Standards
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION	PS.2.	Reason both contextually and abstractly.
PERFORMANCE DESCRIPTOR / STANDARD	PS.2d.	Connect the meaning of mathematical operations to the context of a given situation.

STANDARD / COURSE	SC.PS.	South Carolina College- and Career-Ready Mathematical Process Standards
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION	PS.3.	Use critical thinking skills to justify mathematical reasoning and critique the reasoning of others.
PERFORMANCE DESCRIPTOR / STANDARD	PS.3a.	Construct and justify a solution to a problem.
PERFORMANCE DESCRIPTOR / STANDARD	PS.3b.	Compare and discuss the validity of various reasoning strategies.

PERFORMANCE DESCRIPTOR / STANDARD	PS.3d.	Reflect on and provide thoughtful responses to the reasoning of others.

STANDARD / COURSE	SC.PS.	South Carolina College- and Career-Ready Mathematical Process Standards
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION	**PS.4.**	**Connect mathematical ideas and real-world situations through modeling.**
PERFORMANCE DESCRIPTOR / STANDARD	PS.4a.	Identify relevant quantities and develop a model to describe their relationships.
PERFORMANCE DESCRIPTOR / STANDARD	PS.4b.	Interpret mathematical models in the context of the situation.
PERFORMANCE DESCRIPTOR / STANDARD	PS.4d.	Evaluate the reasonableness of a model and refine if necessary.

STANDARD / COURSE	SC.PS.	South Carolina College- and Career-Ready Mathematical Process Standards
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION	**PS.6.**	**Communicate mathematically and approach mathematical situations with precision.**
PERFORMANCE DESCRIPTOR / STANDARD	PS.6a.	Express numerical answers with the degree of precision appropriate for the context of a situation.
PERFORMANCE DESCRIPTOR / STANDARD	PS.6b.	Represent numbers in an appropriate form according to the context of the situation.

STANDARD / COURSE	SC.PS.	South Carolina College- and Career-Ready Mathematical Process Standards
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION	**PS.7.**	**Identify and utilize structure and patterns.**
PERFORMANCE DESCRIPTOR / STANDARD	PS.7a.	Recognize complex mathematical objects as being composed of more than one simple object.
PERFORMANCE DESCRIPTOR / STANDARD	PS.7b.	Recognize mathematical repetition in order to make generalizations.
PERFORMANCE DESCRIPTOR / STANDARD	PS.7c.	Look for structures to interpret meaning and develop solution strategies.

STANDARD / COURSE	**SC.7.NS.**	**The Number System**
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION	**7.NS.1.**	**Extend prior knowledge of operations with positive rational numbers to add and to subtract all rational numbers and represent the sum or difference on a number line.**
PERFORMANCE DESCRIPTOR / STANDARD	7.NS.1e.	Apply mathematical properties (e.g., commutative, associative, distributive, or the properties of identity and inverse elements) to add and subtract rational numbers.

STANDARD / COURSE	**SC.7.NS.**	**The Number System**
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION	**7.NS.2.**	**Extend prior knowledge of operations with positive rational numbers to multiply and to divide all rational numbers.**
PERFORMANCE DESCRIPTOR / STANDARD	7.NS.2b.	Understand sign rules for multiplying rational numbers.
PERFORMANCE DESCRIPTOR / STANDARD	7.NS.2c.	Understand sign rules for dividing rational numbers and that a quotient of integers (with a non-zero divisor) is a rational number.
PERFORMANCE DESCRIPTOR / STANDARD	7.NS.2d.	Apply mathematical properties (e.g., commutative, associative, distributive, or the properties of identity and inverse elements) to multiply and divide rational numbers.

STANDARD / COURSE	**SC.7.EEI.**	**Expressions, Equations, and Inequalities**
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION	**7.EEI.4.**	**Apply the concepts of linear equations and inequalities in one variable to real-world and mathematical situations.**
PERFORMANCE DESCRIPTOR / STANDARD	7.EEI.4c.	Write and solve two-step linear inequalities. Graph the solution set on a number line and interpret its meaning.
PERFORMANCE DESCRIPTOR / STANDARD	7.EEI.4d.	Identify and justify the steps for solving multi-step linear equations and two-step linear inequalities.

South Carolina Standards & Learning

Mathematics

Grade **8** - Adopted: **2015**

STANDARD / COURSE	**SC.PS.**	**South Carolina College- and Career-Ready Mathematical Process Standards**
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION	**PS.1.**	**Make sense of problems and persevere in solving them.**
PERFORMANCE DESCRIPTOR / STANDARD	PS.1b.	Recognize there may be multiple entry points to a problem and more than one path to a solution.

PERFORMANCE DESCRIPTOR / STANDARD	PS.1c.	Analyze what is given, what is not given, what is being asked, and what strategies are needed, and make an initial attempt to solve a problem.
PERFORMANCE DESCRIPTOR / STANDARD	PS.1d.	Evaluate the success of an approach to solve a problem and refine it if necessary.
STANDARD / COURSE	**SC.PS.**	**South Carolina College- and Career-Ready Mathematical Process Standards**
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION	**PS.2.**	**Reason both contextually and abstractly.**
PERFORMANCE DESCRIPTOR / STANDARD	PS.2d.	Connect the meaning of mathematical operations to the context of a given situation.
STANDARD / COURSE	**SC.PS.**	**South Carolina College- and Career-Ready Mathematical Process Standards**
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION	**PS.3.**	**Use critical thinking skills to justify mathematical reasoning and critique the reasoning of others.**
PERFORMANCE DESCRIPTOR / STANDARD	PS.3a.	Construct and justify a solution to a problem.
PERFORMANCE DESCRIPTOR / STANDARD	PS.3b.	Compare and discuss the validity of various reasoning strategies.
PERFORMANCE DESCRIPTOR / STANDARD	PS.3d.	Reflect on and provide thoughtful responses to the reasoning of others.
STANDARD / COURSE	**SC.PS.**	**South Carolina College- and Career-Ready Mathematical Process Standards**
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION	**PS.4.**	**Connect mathematical ideas and real-world situations through modeling.**
PERFORMANCE DESCRIPTOR / STANDARD	PS.4a.	Identify relevant quantities and develop a model to describe their relationships.
PERFORMANCE DESCRIPTOR / STANDARD	PS.4b.	Interpret mathematical models in the context of the situation.
PERFORMANCE DESCRIPTOR / STANDARD	PS.4d.	Evaluate the reasonableness of a model and refine if necessary.

STANDARD / COURSE	**SC.PS.**	**South Carolina College- and Career-Ready Mathematical Process Standards**
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION	**PS.6.**	**Communicate mathematically and approach mathematical situations with precision.**
PERFORMANCE DESCRIPTOR / STANDARD	PS.6a.	Express numerical answers with the degree of precision appropriate for the context of a situation.
PERFORMANCE DESCRIPTOR / STANDARD	PS.6b.	Represent numbers in an appropriate form according to the context of the situation.

STANDARD / COURSE	**SC.PS.**	**South Carolina College- and Career-Ready Mathematical Process Standards**
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION	**PS.7.**	**Identify and utilize structure and patterns.**
PERFORMANCE DESCRIPTOR / STANDARD	PS.7a.	Recognize complex mathematical objects as being composed of more than one simple object.
PERFORMANCE DESCRIPTOR / STANDARD	PS.7b.	Recognize mathematical repetition in order to make generalizations.
PERFORMANCE DESCRIPTOR / STANDARD	PS.7c.	Look for structures to interpret meaning and develop solution strategies.

STANDARD / COURSE	**SC.8.EEI.**	**Expressions, Equations, and Inequalities**
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION	**8.EEI.4.**	**Apply the concepts of decimal and scientific notation to solve real-world and mathematical problems.**
PERFORMANCE DESCRIPTOR / STANDARD	8.EEI.4a.	Multiply and divide numbers expressed in both decimal and scientific notation.

STANDARD / COURSE	**SC.8.EEI.**	**Expressions, Equations, and Inequalities**
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION	**8.EEI.7.**	**Extend concepts of linear equations and inequalities in one variable to more complex multi-step equations and inequalities in real-world and mathematical situations.**
PERFORMANCE DESCRIPTOR / STANDARD	8.EEI.7a.	Solve linear equations and inequalities with rational number coefficients that include the use of the distributive property, combining like terms, and variables on both sides.

PERFORMANCE DESCRIPTOR / STANDARD	8.EEI.7b.	Recognize the three types of solutions to linear equations: one solution (x=a), infinitely many solutions (a=a), or no solutions (a=b).
PERFORMANCE DESCRIPTOR / STANDARD	8.EEI.7d.	Justify why linear equations have a specific type of solution.

South Carolina Standards & Learning

Science

Grade **7** - Adopted: **2021**

STANDARD / COURSE		**Life Science (LS)**
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION		**Ecosystems: Interactions, Energy, and Dynamics (LS2)**
PERFORMANCE DESCRIPTOR / STANDARD	7-LS2-5.	Evaluate competing design solutions for maintaining biodiversity and ecosystem services.
STANDARD / COURSE		**Earth and Space Science (ESS)**
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION		**Earth and Human Activity (ESS3)**
PERFORMANCE DESCRIPTOR / STANDARD	7-ESS3-3.	Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.
PERFORMANCE DESCRIPTOR / STANDARD	7-ESS3-4.	Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.

South Carolina Standards & Learning

Technology Education

Grade **7** - Adopted: **2017**

STANDARD / COURSE		**Process Standards**
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION		**A computer science literate student can:**
PERFORMANCE DESCRIPTOR / STANDARD	**3**	**Recognize, define, and analyze computational problems.**
GRADE LEVEL EXAMPLE / STAGE	3.a.	Recognize when it is appropriate to solve a problem computationally.

GRADE LEVEL EXAMPLE / STAGE	3.b.	Make sense of computational problems and persevere in solving them.
GRADE LEVEL EXAMPLE / STAGE	3.c.	Relate computational problems to prior knowledge.
GRADE LEVEL EXAMPLE / STAGE	3.d.	Recognize that there may be multiple approaches to solving a problem.
GRADE LEVEL EXAMPLE / STAGE	3.e.	Approach problem solving iteratively, using a cyclical process.

STANDARD / COURSE		**Process Standards**
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION		**A computer science literate student can:**
PERFORMANCE DESCRIPTOR / STANDARD	**4**	**Create, test, and refine computational artifacts.**

GRADE LEVEL EXAMPLE / STAGE	4.b.	Recognize when to use the same solution for multiple problems.
GRADE LEVEL EXAMPLE / STAGE	4.c.	Test computational artifacts systematically by considering multiple scenarios and using test cases.

STANDARD / COURSE		**Process Standards**
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION		**A computer science literate student can:**
PERFORMANCE DESCRIPTOR / STANDARD	**5**	**Communicate about computing.**

GRADE LEVEL EXAMPLE / STAGE	5.a.	Select and use appropriate technological tools to convey solutions to computing problems.

STANDARD / COURSE		**Algorithms and Programming**
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION	**Standard 1.**	**Design, evaluate, and modify simple algorithms (e.g., steps to make a sandwich; steps to a popular dance; steps for sending an email).**

PERFORMANCE DESCRIPTOR / STANDARD	7.AP.1.1.	Write sequences of instructions for others to perform tasks.
PERFORMANCE DESCRIPTOR / STANDARD	7.AP.1.2.	Suggest changes to the sequence of instructions that can lead to the same result (e.g., explore different ways to tying shoes).
STANDARD / COURSE		**Algorithms and Programming**
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION	**Standard 3.**	**Decompose problems into subproblems and write code to solve the subproblems (i.e., break down a problem into smaller parts).**
PERFORMANCE DESCRIPTOR / STANDARD	7.AP.3.2.	Identify the parts of a program (e.g., components of creating a video game include keeping score, determining winners/losers, moving characters, designing game art, and advancing level).
STANDARD / COURSE		**Algorithms and Programming**
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION	**Standard 4.**	**Design and code programs to solve problems.**
PERFORMANCE DESCRIPTOR / STANDARD	7.AP.4.1.	Use a beginner coding language (e.g., drag-and-drop, block-based) to design and code a moderately complex program that solves a problem.
STANDARD / COURSE		**Impact of Computing**
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION	**Standard 1.**	**Evaluate the tradeoffs of computing in everyday activities.**
PERFORMANCE DESCRIPTOR / STANDARD	7.IC.1.1.	Understand how computer science is and can be used to solve problems in students' daily lives (e.g., voter identification website, online tax filing).
PERFORMANCE DESCRIPTOR / STANDARD	7.IC.1.2.	Compare positive and negative impacts of computing on society (e.g., personal, health, workforce, economy, education, culture, environment).
STANDARD / COURSE		**Impact of Computing**
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION	**Standard 6.**	**Explore computer science and computing-intensive careers.**
PERFORMANCE DESCRIPTOR / STANDARD	7.IC.6.1.	Explain how computer science plays a role in every industry.

STANDARD / COURSE		Process Standards
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION		A computer science literate student can:
PERFORMANCE DESCRIPTOR / STANDARD	3	Recognize, define, and analyze computational problems.
GRADE LEVEL EXAMPLE / STAGE	3.a.	Recognize when it is appropriate to solve a problem computationally.
GRADE LEVEL EXAMPLE / STAGE	3.b.	Make sense of computational problems and persevere in solving them.
GRADE LEVEL EXAMPLE / STAGE	3.c.	Relate computational problems to prior knowledge.
GRADE LEVEL EXAMPLE / STAGE	3.d.	Recognize that there may be multiple approaches to solving a problem.
GRADE LEVEL EXAMPLE / STAGE	3.e.	Approach problem solving iteratively, using a cyclical process.

STANDARD / COURSE		Process Standards
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION		A computer science literate student can:
PERFORMANCE DESCRIPTOR / STANDARD	4	Create, test, and refine computational artifacts.
GRADE LEVEL EXAMPLE / STAGE	4.b.	Recognize when to use the same solution for multiple problems.
GRADE LEVEL EXAMPLE / STAGE	4.c.	Test computational artifacts systematically by considering multiple scenarios and using test cases.

STANDARD / COURSE		Process Standards
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION		A computer science literate student can:

PERFORMANCE DESCRIPTOR / STANDARD	**5**	**Communicate about computing.**
GRADE LEVEL EXAMPLE / STAGE	5.a.	Select and use appropriate technological tools to convey solutions to computing problems.
STANDARD / COURSE		**Data and Analysis**
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION	**Standard 3.**	**Analyze various ways to visually represent data.**
PERFORMANCE DESCRIPTOR / STANDARD	8.DA.3.3.	Explain how models are used to predict specific behaviors and/or outcomes (e.g., weather data presented in a model used to predict future weather conditions and activity).
STANDARD / COURSE		**Algorithms and Programming**
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION	**Standard 1.**	**Design, evaluate, and modify simple algorithms (e.g., steps to make a sandwich; steps to a popular dance; steps for sending an email).**
PERFORMANCE DESCRIPTOR / STANDARD	8.AP.1.1.	Modify a sequence of instructions to solve problems.
PERFORMANCE DESCRIPTOR / STANDARD	8.AP.1.2.	Make changes to the sequence of instructions that can lead to the same result.
STANDARD / COURSE		**Algorithms and Programming**
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION	**Standard 3.**	**Decompose problems into subproblems and write code to solve the subproblems (i.e., break down a problem into smaller parts).**
PERFORMANCE DESCRIPTOR / STANDARD	8.AP.3.2.	Compose a program with multiple parts.
STANDARD / COURSE		**Algorithms and Programming**
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION	**Standard 4.**	**Design and code programs to solve problems.**
PERFORMANCE DESCRIPTOR / STANDARD	8.AP.4.1.	Use a beginner coding language (e.g., drag-and-drop, block-based) to design and code a complex program that solves a problem.
STANDARD / COURSE		**Impact of Computing**

KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION	**Standard 1.**	**Evaluate the tradeoffs of computing in everyday activities.**
PERFORMANCE DESCRIPTOR / STANDARD	8.IC.1.2.	Analyze positive and negative impacts of computing on society (e.g., personal, health, workforce, economy, education, culture, environment).

South Dakota Content Standards

Mathematics

Grade **7** - Adopted: **2018**

GOAL/STRAND		**Standards for Mathematical Practice**
INDICATOR/BENCHMARK	1	Make sense of problems and persevere in solving them.
INDICATOR/BENCHMARK	2	Reason abstractly and quantitatively.
INDICATOR/BENCHMARK	3	Construct viable arguments and critique the reasoning of others.
INDICATOR/BENCHMARK	4	Model with mathematics.
INDICATOR/BENCHMARK	6	Attend to precision.
INDICATOR/BENCHMARK	7	Look for and make use of structure.
INDICATOR/BENCHMARK	8	Look for and express regularity in repeated reasoning.

GOAL/STRAND	**7.NS.**	**The Number System**
INDICATOR/BENCHMARK	**7.NS.A.**	**Apply and extend previous understandings of operations with fractions to add, subtract, multiply and divide rational numbers.**
STANDARD	**7.NS.A.1.**	**Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.**
SUPPORTING SKILLS	7.NS.A.1.d.	Apply properties of operations as strategies to add and subtract rational numbers.

GOAL/STRAND	**7.NS.**	**The Number System**
INDICATOR/BENCHMARK	**7.NS.A.**	**Apply and extend previous understandings of operations with fractions to add, subtract, multiply and divide rational numbers.**
STANDARD	**7.NS.A.2.**	**Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.**
SUPPORTING SKILLS	7.NS.A.2.a.	Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (–1)(–1) = 1 and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.

SUPPORTING SKILLS	7.NS.A.2.c.	Apply properties of operations as strategies to multiply and divide rational numbers.

GOAL/STRAND	**7.EE.**	**Expressions and Equations**
INDICATOR/BENCHMARK	**7.EE.A.**	**Use properties of operations to generate equivalent expressions.**
STANDARD	**7.EE.A.4.**	**Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.**
SUPPORTING SKILLS	7.EE.A.4.a.	Solve word problems leading to equations of the form px + q = r and p(x + q) = r, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach.

South Dakota Content Standards

Mathematics

Grade **8** - Adopted: **2018**

GOAL/STRAND		**Standards for Mathematical Practice**
INDICATOR/BENCHMARK	1	Make sense of problems and persevere in solving them.
INDICATOR/BENCHMARK	2	Reason abstractly and quantitatively.
INDICATOR/BENCHMARK	3	Construct viable arguments and critique the reasoning of others.
INDICATOR/BENCHMARK	4	Model with mathematics.
INDICATOR/BENCHMARK	6	Attend to precision.
INDICATOR/BENCHMARK	7	Look for and make use of structure.
INDICATOR/BENCHMARK	8	Look for and express regularity in repeated reasoning.

GOAL/STRAND	**8.EE.**	**Expressions and Equations**
INDICATOR/BENCHMARK	**8.EE.C.**	**Analyze and solve linear equations and pairs of simultaneous linear equations.**
STANDARD	**8.EE.C.7.**	**Solve linear equations in one variable.**
SUPPORTING SKILLS	8.EE.C.7.a.	Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers).
SUPPORTING SKILLS	8.EE.C.7.b.	Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and combining like terms.

Science

Grade **7** - Adopted: **2015**

GOAL/STRAND	**SD.6-8.LSS.**	**Middle School Life Science Standards**
INDICATOR/BENCHMARK	MS-LS2-5.	Evaluate competing design solutions for maintaining biodiversity and ecosystem services. (SEP: 7; DCI: LS2.C, LS4.D, ETS1.B ; CCC: Stability/Change, Technology)
GOAL/STRAND	**SD.6-8.ESS.**	**Middle School Earth and Space Science Standards**
INDICATOR/BENCHMARK	MS-ESS3-3.	Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment. (SEP: 6 ; DCI: ESS3.C; CCC: Cause/Effect, Technology)
INDICATOR/BENCHMARK	MS-ESS3-4.	Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems. (SEP: 7; DCI: ESS3.C; CCC: Cause/Effect, Technology, Nature Science/Consequence-Actions)

Grade **7** - Adopted: **2010**

GOAL/STRAND	**SD.RST.6-8.**	**Reading Standards for Literacy in Science and Technical Subjects**
INDICATOR/BENCHMARK		**Key Ideas and Details**
STANDARD	RST.6-8.2.	Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.
GOAL/STRAND	**SD.RST.6-8.**	**Reading Standards for Literacy in Science and Technical Subjects**
INDICATOR/BENCHMARK		**Integration of Knowledge and Ideas**
STANDARD	RST.6-8.9.	Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.
GOAL/STRAND	**SD.RST.6-8.**	**Reading Standards for Literacy in Science and Technical Subjects**
INDICATOR/BENCHMARK		**Range of Reading and Level of Text Complexity**
STANDARD	RST.6-8.10.	By the end of grade 8, read and comprehend science/technical texts in the grades 6-8 text complexity band independently and proficiently.

South Dakota Content Standards

Science

Grade **8** - Adopted: **2015**

GOAL/STRAND	**SD.6-8.LSS.**	**Middle School Life Science Standards**
INDICATOR/BENCHMARK	MS-LS2-5.	Evaluate competing design solutions for maintaining biodiversity and ecosystem services. (SEP: 7; DCI: LS2.C, LS4.D, ETS1.B ; CCC: Stability/Change, Technology)
GOAL/STRAND	**SD.6-8.ESS.**	**Middle School Earth and Space Science Standards**

INDICATOR/BENCHMARK	MS-ESS3-3.	Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment. (SEP: 6 ; DCI: ESS3.C; CCC: Cause/Effect, Technology)
INDICATOR/BENCHMARK	MS-ESS3-4.	Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems. (SEP: 7; DCI: ESS3.C; CCC: Cause/Effect, Technology, Nature Science/Consequence-Actions)

Grade **8** - Adopted: **2010**

GOAL/STRAND	**SD.RST.6-8.**	**Reading Standards for Literacy in Science and Technical Subjects**
INDICATOR/BENCHMARK		**Key Ideas and Details**
STANDARD	RST.6-8.2.	Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.

GOAL/STRAND	**SD.RST.6-8.**	**Reading Standards for Literacy in Science and Technical Subjects**
INDICATOR/BENCHMARK		**Integration of Knowledge and Ideas**
STANDARD	RST.6-8.9.	Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.

GOAL/STRAND	**SD.RST.6-8.**	**Reading Standards for Literacy in Science and Technical Subjects**
INDICATOR/BENCHMARK		**Range of Reading and Level of Text Complexity**
STANDARD	RST.6-8.10.	By the end of grade 8, read and comprehend science/technical texts in the grades 6-8 text complexity band independently and proficiently.

South Dakota Content Standards

Technology Education

Grade **8** - Adopted: **2015**

GOAL/STRAND	**SD.ET.**	**Educational Technology**
INDICATOR/BENCHMARK	**ET.CT.**	**Eighth Grade Critical Thinking, Problem Solving, and Decision Making**
STANDARD	**8.ET.CT.3.**	**Students evaluate and select technology tools based on the specific tasks.**
SUPPORTING SKILLS	8.ET.CT.3.1.	Develop, analyze, and integrate a repertoire of strategies to apply new technologies to tasks.

GOAL/STRAND	**SD.ET.**	**Educational Technology**
INDICATOR/BENCHMARK	**ET.OC.**	**Eighth Grade Technology Operations and Concepts**
STANDARD	**8.ET.OC.1.**	**Students interpret the history and progression of technology.**
SUPPORTING SKILLS	8.ET.OC.1.1.	Critique the progression of technology systems and peripherals to improve the user experience

SUPPORTING SKILLS	8.ET.OC.1.2.	Predict the effects that may result from society's increasing reliance on technology.

Tennessee Academic Standards

Mathematics

Grade **7** - Adopted: **2021**

STRAND / STANDARD / COURSE		Standards for Mathematical Practice
CONCEPTUAL STRAND / GUIDING QUESTION	1	Make sense of problems and persevere in solving them.
CONCEPTUAL STRAND / GUIDING QUESTION	2	Reason abstractly and quantitatively.
CONCEPTUAL STRAND / GUIDING QUESTION	3	Construct viable arguments and critique the reasoning of others.
CONCEPTUAL STRAND / GUIDING QUESTION	4	Model with mathematics.
CONCEPTUAL STRAND / GUIDING QUESTION	6	Attend to precision.
CONCEPTUAL STRAND / GUIDING QUESTION	7	Look for and make use of structure.
CONCEPTUAL STRAND / GUIDING QUESTION	8	Look for and express regularity in repeated reasoning.

STRAND / STANDARD / COURSE		Mathematics | Grade 7
CONCEPTUAL STRAND / GUIDING QUESTION	**7.NS.**	**The Number System (NS)**
GUIDING QUESTION / LEARNING EXPECTATION	**7.NS.A.**	**Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.**
LEARNING EXPECTATION	**7.NS.A.1.**	**Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.**

INDICATOR	7.NS.A.1.c.	Apply properties of operations as strategies to add and subtract rational numbers.

STRAND / STANDARD / COURSE		**Mathematics | Grade 7**
CONCEPTUAL STRAND / GUIDING QUESTION	**7.NS.**	**The Number System (NS)**
GUIDING QUESTION / LEARNING EXPECTATION	**7.NS.A.**	**Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.**
LEARNING EXPECTATION	**7.NS.A.2.**	**Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.**
INDICATOR	7.NS.A.2.a.	Understand that multiplication is extended from fractions to all rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (–1)(–1) = 1 and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.
INDICATOR	7.NS.A.2.c.	Apply properties of operations as strategies to multiply and divide rational numbers.

STRAND / STANDARD / COURSE		**Mathematics | Grade 7**
CONCEPTUAL STRAND / GUIDING QUESTION	**7.EE.**	**Expressions and Equations(EE)**
GUIDING QUESTION / LEARNING EXPECTATION	**7.EE.B.**	**Solve real-world and mathematical problems using numerical and algebraic expressions and equations and inequalities.**
LEARNING EXPECTATION	**7.EE.B.4.**	**Use variables to represent quantities in a real-world and mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.**
INDICATOR	7.EE.B.4.a.	Solve real-world and mathematical problems leading to equations of the form px + q = r and p(x + q) = r where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?

Tennessee Academic Standards

Mathematics

Grade **8** - Adopted: **2021**

STRAND / STANDARD / COURSE		**Standards for Mathematical Practice**
CONCEPTUAL STRAND / GUIDING QUESTION	1	Make sense of problems and persevere in solving them.

CONCEPTUAL STRAND / GUIDING QUESTION	2	Reason abstractly and quantitatively.
CONCEPTUAL STRAND / GUIDING QUESTION	3	Construct viable arguments and critique the reasoning of others.
CONCEPTUAL STRAND / GUIDING QUESTION	4	Model with mathematics.
CONCEPTUAL STRAND / GUIDING QUESTION	6	Attend to precision.
CONCEPTUAL STRAND / GUIDING QUESTION	7	Look for and make use of structure.
CONCEPTUAL STRAND / GUIDING QUESTION	8	Look for and express regularity in repeated reasoning.

STRAND / STANDARD / COURSE		**Mathematics | Grade 8**
CONCEPTUAL STRAND / GUIDING QUESTION	**8.EE.**	**Expressions and Equations(EE)**
GUIDING QUESTION / LEARNING EXPECTATION	**8.EE.C.**	**Analyze and solve linear equations, linear inequalities, and systems of two linear equations.**
LEARNING EXPECTATION	**8.EE.C.7.**	**Solve linear equations in one variable.**
INDICATOR	8.EE.C.7.a.	Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers).
INDICATOR	8.EE.C.7.b.	Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and combining like terms.

Tennessee Academic Standards

Technology Education

Grade **7** - Adopted: **2022**

STRAND / STANDARD / COURSE		**Tennessee K-12 Computer Science State Standards**

CONCEPTUAL STRAND / GUIDING QUESTION		**Middle School: Computer Science Standards**
GUIDING QUESTION / LEARNING EXPECTATION	**MS.AT.**	**Algorithmic Thinking**
LEARNING EXPECTATION	MS.AT.1.	Use clearly named variables of various data types to create generalized algorithms.
LEARNING EXPECTATION	MS.AT.2.	Create algorithms which include methods of controlling the flow of computation using “if…then… else” type conditional statements to perform different operations depending on the values of inputs.
LEARNING EXPECTATION	MS.AT.3.	Identify algorithms that make use of sequencing, selection, or iteration.
LEARNING EXPECTATION	MS.AT.4.	Describe how algorithmic processes and automation increase efficiency.

STRAND / STANDARD / COURSE		**Tennessee K-12 Computer Science State Standards**
CONCEPTUAL STRAND / GUIDING QUESTION		**Middle School: Computer Science Standards**
GUIDING QUESTION / LEARNING EXPECTATION	**MS.PC.**	**Programming Concepts**
LEARNING EXPECTATION	MS.PC.1.	Decompose problems and subproblems into parts to facilitate the design, implementation, and review of programs.

Tennessee Academic Standards

Technology Education

Grade **8** - Adopted: **2022**

STRAND / STANDARD / COURSE		**Tennessee K-12 Computer Science State Standards**
CONCEPTUAL STRAND / GUIDING QUESTION		**Middle School: Computer Science Standards**
GUIDING QUESTION / LEARNING EXPECTATION	**MS.AT.**	**Algorithmic Thinking**
LEARNING EXPECTATION	MS.AT.1.	Use clearly named variables of various data types to create generalized algorithms.
LEARNING EXPECTATION	MS.AT.2.	Create algorithms which include methods of controlling the flow of computation using “if…then… else” type conditional statements to perform different operations depending on the values of inputs.
LEARNING EXPECTATION	MS.AT.3.	Identify algorithms that make use of sequencing, selection, or iteration.

LEARNING EXPECTATION	MS.AT.4.	Describe how algorithmic processes and automation increase efficiency.

STRAND / STANDARD / COURSE		**Tennessee K-12 Computer Science State Standards**
CONCEPTUAL STRAND / GUIDING QUESTION		**Middle School: Computer Science Standards**
GUIDING QUESTION / LEARNING EXPECTATION	**MS.PC.**	**Programming Concepts**
LEARNING EXPECTATION	MS.PC.1.	Decompose problems and subproblems into parts to facilitate the design, implementation, and review of programs.

Texas Essential Knowledge and Skills (TEKS)

Mathematics

Grade **7** - Adopted: **2012**

TEKS	**111.27.**	**Grade 7, Adopted 2012.**
STUDENT EXPECTATION	**111.27.b.1.**	**Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:**
GRADE LEVEL EXPECTATION	111.27.b.1.B.	Use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.
GRADE LEVEL EXPECTATION	111.27.b.1.C.	Select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems.
GRADE LEVEL EXPECTATION	111.27.b.1.F.	Analyze mathematical relationships to connect and communicate mathematical ideas.

TEKS	**111.27.**	**Grade 7, Adopted 2012.**
STUDENT EXPECTATION	**111.27.b.10.**	**Expressions, equations, and relationships. The student applies mathematical process standards to use one-variable equations and inequalities to represent situations. The student is expected to:**
GRADE LEVEL EXPECTATION	111.27.b.10.C.	Write a corresponding real-world problem given a one-variable, two-step equation or inequality.

TEKS	**111.27.**	**Grade 7, Adopted 2012.**
STUDENT EXPECTATION	**111.27.b.11.**	**Expressions, equations, and relationships. The student applies mathematical process standards to solve one-variable equations and inequalities. The student is expected to:**
GRADE LEVEL EXPECTATION	111.27.b.11.A.	Model and solve one-variable, two-step equations and inequalities.

Texas Essential Knowledge and Skills (TEKS)

Mathematics

Grade **8** - Adopted: **2012**

TEKS	**111.28.**	**Grade 8, Adopted 2012.**

STUDENT EXPECTATION	**111.28.b.1.**	**Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:**
GRADE LEVEL EXPECTATION	111.28.b.1.B.	Use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.
GRADE LEVEL EXPECTATION	111.28.b.1.C.	Select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems.
GRADE LEVEL EXPECTATION	111.28.b.1.F.	Analyze mathematical relationships to connect and communicate mathematical ideas.

Texas Essential Knowledge and Skills (TEKS)

Technology Education

Grade **7** - Adopted: **2011**

TEKS	**§126.15.**	**Technology Applications, Grade 7**
STUDENT EXPECTATION	**§126.15.(4)**	**Critical thinking, problem solving, and decision making. The student makes informed decisions by applying critical-thinking and problem-solving skills. The student is expected to:**
GRADE LEVEL EXPECTATION	§126.15.(4)(A)	Identify and define relevant problems and significant questions for investigation.

Texas Essential Knowledge and Skills (TEKS)

Technology Education

Grade **8** - Adopted: **2011**

TEKS	**§126.16.**	**Technology Applications, Grade 8**
STUDENT EXPECTATION	**§126.16.(4)**	**Critical thinking, problem solving, and decision making. The student makes informed decisions by applying critical-thinking and problem-solving skills. The student is expected to:**
GRADE LEVEL EXPECTATION	§126.16.(4)(A)	Identify and define relevant problems and significant questions for investigation.

Utah Core Standards

Mathematics

Grade **7** - Adopted: **2016**

STANDARD / AREA OF LEARNING	**UT.7.MP.**	**MATHEMATICAL PRACTICES (7.MP)**
OBJECTIVE / STRAND	7.MP.1.	Make sense of problems and persevere in solving them. Explain the meaning of a problem and look for entry points to its solution. Analyze givens, constraints, relationships, and goals. Make conjectures about the form and meaning of the solution, plan a solution pathway, and continually monitor progress asking, “Does this make sense?” Consider analogous problems, make connections between multiple representations, identify the correspondence between different approaches, look for trends, and transform algebraic expressions to highlight meaningful mathematics. Check answers to problems using a different method.
OBJECTIVE / STRAND	7.MP.2.	Reason abstractly and quantitatively. Make sense of the quantities and their relationships in problem situations. Translate between context and algebraic representations by contextualizing and decontextualizing quantitative relationships. This includes the ability to decontextualize a given situation, representing it algebraically and manipulating symbols fluently as well as the ability to contextualize algebraic representations to make sense of the problem.

OBJECTIVE / STRAND	7.MP.3.	Construct viable arguments and critique the reasoning of others. Understand and use stated assumptions, definitions, and previously established results in constructing arguments. Make conjectures and build a logical progression of statements to explore the truth of their conjectures. Justify conclusions and communicate them to others. Respond to the arguments of others by listening, asking clarifying questions, and critiquing the reasoning of others.
OBJECTIVE / STRAND	7.MP.4.	Model with mathematics. Apply mathematics to solve problems arising in everyday life, society, and the workplace. Make assumptions and approximations, identifying important quantities to construct a mathematical model. Routinely interpret mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.
OBJECTIVE / STRAND	7.MP.6.	Attend to precision. Communicate precisely to others. Use explicit definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose. Specify units of measure and label axes to clarify the correspondence with quantities in a problem. Calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context.
OBJECTIVE / STRAND	7.MP.7.	Look for and make use of structure. Look closely at mathematical relationships to identify the underlying structure by recognizing a simple structure within a more complicated structure. See complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, see 5 – 3(x – y)^2 as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers x and y.
OBJECTIVE / STRAND	7.MP.8.	Look for and express regularity in repeated reasoning. Notice if reasoning is repeated, and look for both generalizations and shortcuts. Evaluate the reasonableness of intermediate results by maintaining oversight of the process while attending to the details.
STANDARD / AREA OF LEARNING	**UT.7.NS.**	**THE NUMBER SYSTEM (7.NS)**
OBJECTIVE / STRAND		**Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers (Standards 7.NS.1–3).**
INDICATOR / CLUSTER	**7.NS.1.**	**Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.**
EXPECTATION / STANDARD	7.NS.1.d.	Apply properties of operations as strategies to add and subtract rational numbers.
STANDARD / AREA OF LEARNING	**UT.7.NS.**	**THE NUMBER SYSTEM (7.NS)**
OBJECTIVE / STRAND		**Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers (Standards 7.NS.1–3).**
INDICATOR / CLUSTER	**7.NS.2.**	**Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.**
EXPECTATION / STANDARD	7.NS.2.a.	Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (–1)(–1) = 1 and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.
EXPECTATION / STANDARD	7.NS.2.c.	Apply properties of operations as strategies to multiply and divide rational numbers.
STANDARD / AREA OF LEARNING	**UT.7.EE.**	**EXPRESSIONS AND EQUATIONS (7.EE)**

OBJECTIVE / STRAND		**Use properties of operations to generate equivalent expressions (Standards 7.EE.1–2). Solve real-life and mathematical problems using numerical and algebraic expressions and equations (Standards 7.EE.3–4).**
INDICATOR / CLUSTER	**7.EE.4.**	**Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.**
EXPECTATION / STANDARD	7.EE.4.a.	Solve word problems leading to equations of the form px + q = r and p(x + q) = r, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?

Utah Core Standards

Mathematics

Grade **8** - Adopted: **2016**

STANDARD / AREA OF LEARNING	**UT.8.MP.**	**MATHEMATICAL PRACTICES (8.MP)**
OBJECTIVE / STRAND		**The Standards for Mathematical Practice in Eighth Grade describe mathematical habits of mind that teachers should seek to develop in their students. Students become mathematically proficient in engaging with mathematical content and concepts as they learn, experience, and apply these skills and attitudes (Standards 8.MP.1–8).**
INDICATOR / CLUSTER	8.MP.1.	Make sense of problems and persevere in solving them. Explain the meaning of a problem and look for entry points to its solution. Analyze givens, constraints, relationships, and goals. Make conjectures about the form and meaning of the solution, plan a solution pathway, and continually monitor progress asking, “Does this make sense?” Consider analogous problems, make connections between multiple representations, identify the correspondence between different approaches, look for trends, and transform algebraic expressions to highlight meaningful mathematics. Check answers to problems using a different method.
INDICATOR / CLUSTER	8.MP.2.	Reason abstractly and quantitatively. Make sense of the quantities and their relationships in problem situations. Translate between context and algebraic representations by contextualizing and decontextualizing quantitative relationships. This includes the ability to decontextualize a given situation, representing it algebraically and manipulating symbols fluently as well as the ability to contextualize algebraic representations to make sense of the problem.
INDICATOR / CLUSTER	8.MP.3.	Construct viable arguments and critique the reasoning of others. Understand and use stated assumptions, definitions, and previously established results in constructing arguments. Make conjectures and build a logical progression of statements to explore the truth of their conjectures. Justify conclusions and communicate them to others. Respond to the arguments of others by listening, asking clarifying questions, and critiquing the reasoning of others.
INDICATOR / CLUSTER	8.MP.4.	Model with mathematics. Apply mathematics to solve problems arising in everyday life, society, and the workplace. Make assumptions and approximations, identifying important quantities to construct a mathematical model. Routinely interpret mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.
INDICATOR / CLUSTER	8.MP.6.	Attend to precision. Communicate precisely to others. Use explicit definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose. Specify units of measure and label axes to clarify the correspondence with quantities in a problem. Calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context.
INDICATOR / CLUSTER	8.MP.7.	Look for and make use of structure. Look closely at mathematical relationships to identify the underlying structure by recognizing a simple structure within a more complicated structure. See complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, see 5 – 3(x –y)^2 as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers x and y.
INDICATOR / CLUSTER	8.MP.8.	Look for and express regularity in repeated reasoning. Notice if reasoning is repeated, and look for both generalizations and shortcuts. Evaluate the reasonableness of intermediate results by maintaining oversight of the process while attending to the details.

STANDARD / AREA OF LEARNING	**UT.8.EE.**	**EXPRESSIONS AND EQUATIONS (8.EE)**
OBJECTIVE / STRAND		**Work with radical and integer exponents (Standards 8.EE.1–4). Understand the connections between proportional relationships, lines, and linear relationships (Standards 8.EE.5–6). Analyze and solve linear equations and inequalities and pairs of simultaneous linear equations (Standards 8.EE.7–8).**
INDICATOR / CLUSTER	**8.EE.7.**	**Solve linear equations and inequalities in one variable.**
EXPECTATION / STANDARD	8.EE.7.a.	Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers).
EXPECTATION / STANDARD	8.EE.7.b.	Solve single-variable linear equations and inequalities with rational number coefficients, including equations and inequalities whose solutions require expanding expressions using the distributive property and collecting like terms.

Utah Core Standards

Science

Grade **7** - Adopted: **2013**

STANDARD / AREA OF LEARNING		**Reading Standards for Literacy in Science and Technical Subjects**
OBJECTIVE / STRAND		**Key Ideas and Details**
INDICATOR / CLUSTER	RST.6-8.2.	Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.
STANDARD / AREA OF LEARNING		**Reading Standards for Literacy in Science and Technical Subjects**
OBJECTIVE / STRAND		**Integration of Knowledge and Ideas**
INDICATOR / CLUSTER	RST.6-8.9.	Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.
STANDARD / AREA OF LEARNING		**Reading Standards for Literacy in Science and Technical Subjects**
OBJECTIVE / STRAND		**Range of Reading and Level of Text Complexity**
INDICATOR / CLUSTER	RST.6-8.10.	By the end of grade 8, read and comprehend science/technical texts in the grades 6-8 text complexity band independently and proficiently.

Utah Core Standards

Science

Grade **8** - Adopted: **2015**

STANDARD / AREA OF LEARNING		**SEEd - Grade 8 (2017)**
OBJECTIVE / STRAND	**Strand 8.4:**	**INTERACTIONS WITH NATURAL SYSTEMS AND RESOURCES**

INDICATOR / CLUSTER		**Interactions of matter and energy through geologic processes have led to the uneven distribution of natural resources. Many of these resources are nonrenewable, and per-capita use can cause positive or negative consequences. Global temperatures change due to various factors, and can cause a change in regional climates. As energy flows through the physical world, natural disasters can occur that affect human life. Humans can study patterns in natural systems to anticipate and forecast some future disasters and work to mitigate the outcomes.**
EXPECTATION / STANDARD	Standard 8.4.3	Design a solution to monitor or mitigate the potential effects of the use of natural resources. Evaluate competing design solutions using a systematic process to determine how well each solution meets the criteria and constraints of the problem. Examples of uses of the natural environment could include agriculture, conservation efforts, recreation, solar energy, and water management.

Grade **8** - Adopted: **2013**

STANDARD / AREA OF LEARNING		**Reading Standards for Literacy in Science and Technical Subjects**
OBJECTIVE / STRAND		**Key Ideas and Details**
INDICATOR / CLUSTER	RST.6-8.2.	Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.

STANDARD / AREA OF LEARNING		**Reading Standards for Literacy in Science and Technical Subjects**
OBJECTIVE / STRAND		**Integration of Knowledge and Ideas**
INDICATOR / CLUSTER	RST.6-8.9.	Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.

STANDARD / AREA OF LEARNING		**Reading Standards for Literacy in Science and Technical Subjects**
OBJECTIVE / STRAND		**Range of Reading and Level of Text Complexity**
INDICATOR / CLUSTER	RST.6-8.10.	By the end of grade 8, read and comprehend science/technical texts in the grades 6-8 text complexity band independently and proficiently.

Utah Core Standards

Technology Education

Grade **7** - Adopted: **2019**

STANDARD / AREA OF LEARNING		**Utah 6-12 Computer Science Standards**
OBJECTIVE / STRAND		**Core Concepts**
INDICATOR / CLUSTER		**Data and Analysis (DA):**
EXPECTATION / STANDARD		Computing systems exist to process data. The amount of digital data generated in the world is rapidly expanding, and the need to process data effectively is increasingly important. Data is collected and stored so it can be analyzed to better understand the world and make more accurate predictions.

STANDARD / AREA OF LEARNING		**Utah 6-12 Computer Science Standards**

OBJECTIVE / STRAND		**Core Concepts**
INDICATOR / CLUSTER		**Algorithms and Programming (AP):**
EXPECTATION / STANDARD		An algorithm is a sequence of steps designed to accomplish a specific task. Algorithms are translated into programs, or code, to provide instructions for computing devices. Algorithms and programming control all computing systems, empowering people to communicate with the world in new ways and solve compelling problems. The development process to create meaningful and efficient programs involves choosing which information to use and how to process and store it, breaking apart large problems into smaller ones, recombining existing solutions, and analyzing different solutions.
STANDARD / AREA OF LEARNING		**Utah 6-12 Computer Science Standards**
OBJECTIVE / STRAND		**Core Practices**
INDICATOR / CLUSTER	**Practice 1:**	**Fostering an Inclusive Computing Culture**
EXPECTATION / STANDARD		**By the end of Grade 12, students should be able to:**
INDICATOR	1	Include the unique perspectives of others and reflect on one's own perspectives when designing and developing computational products.
INDICATOR	2	Address the needs of diverse end users during the design process to produce artifacts with broad accessibility and usability.
STANDARD / AREA OF LEARNING		**Utah 6-12 Computer Science Standards**
OBJECTIVE / STRAND		**Core Practices**
INDICATOR / CLUSTER	**Practice 2:**	**Collaborating Around Computing**
EXPECTATION / STANDARD		**By the end of Grade 12, students should be able to:**
INDICATOR	2	Create team norms, expectations, and equitable workloads to increase efficiency and effectiveness.
STANDARD / AREA OF LEARNING		**Utah 6-12 Computer Science Standards**
OBJECTIVE / STRAND		**Core Practices**
INDICATOR / CLUSTER	**Practice 3:**	**Recognizing and Defining Computational Problems**
EXPECTATION / STANDARD		**By the end of Grade 12, students should be able to:**
INDICATOR	2	Decompose complex real-world problems into manageable subproblems that could integrate existing solutions or procedures.
INDICATOR	3	Evaluate whether it is appropriate and feasible to solve a problem computationally.

STANDARD / AREA OF LEARNING		**Utah 6-12 Computer Science Standards**
OBJECTIVE / STRAND		**Core Practices**
INDICATOR / CLUSTER	**Practice 4:**	**Developing and Using Abstractions**
EXPECTATION / STANDARD		**By the end of Grade 12, students should be able to:**
INDICATOR	3	Create modules and develop points of interaction that can apply to multiple situations and reduce complexity.

STANDARD / AREA OF LEARNING		**Utah 6-12 Computer Science Standards**
OBJECTIVE / STRAND		**Core Practices**
INDICATOR / CLUSTER	**Practice 5:**	**Creating Computational Artifacts**
EXPECTATION / STANDARD		**By the end of Grade 12, students should be able to:**
INDICATOR	1	Plan the development of a computational artifact using an iterative process that includes reflection on and modification of the plan, taking into account key features, time and resource constraints, and user expectations.
INDICATOR	2	Create a computational artifact for practical intent, personal expression, or to address a societal issue.

STANDARD / AREA OF LEARNING		**Utah 6-12 Computer Science Standards**
OBJECTIVE / STRAND		**Core Practices**
INDICATOR / CLUSTER	**Practice 6:**	**Testing and Refining Computational Artifacts**
EXPECTATION / STANDARD		**By the end of Grade 12, students should be able to:**
INDICATOR	1	Systematically test computational artifacts by considering all scenarios and using test cases.

STANDARD / AREA OF LEARNING		**Utah 6-12 Computer Science Standards**
OBJECTIVE / STRAND		**Algorithms and Programming (AP):**
INDICATOR / CLUSTER	**Standard 7.AP.3.**	**Systematically test and refine programs using a range of test cases. (Practice 6: Testing and Refining Computational Artifacts.)**
EXPECTATION / STANDARD		Students will use a variety of problem-solving processes such as the engineering design process, decision matrix, pros and cons, or DMAIC (define, measure, analyze, improve and control) to test and refine a project or program. Students will test and refine a computer program, an engineering artifact, or solution. For example, students may test and refine a math program solving for surface area of different shapes (triangles, quadrilaterals, polygons, cubes).

STANDARD / AREA OF LEARNING		**Utah 6-12 Computer Science Standards**
OBJECTIVE / STRAND		**Algorithms and Programming (AP):**
INDICATOR / CLUSTER	**Standard 7.AP.4.**	**Select and assign tasks to maintain a project timeline when collaboratively developing computational artifacts. (Practice 2: Collaborating Around Computing. Practice 5: Creating Computational Artifacts.)**
EXPECTATION / STANDARD		Students will select, assign, and manage tasks within a project timeline of milestones and due dates while collaboratively working on projects. For example, students will use tools such as storyboards, to-do lists, team roles, and other project management tools to organize their projects and share the work across team members and help them be more efficient in managing time and resources.

Utah Core Standards
Technology Education
Grade **8** - Adopted: **2019**

STANDARD / AREA OF LEARNING		**Utah 6-12 Computer Science Standards**
OBJECTIVE / STRAND		**Core Concepts**
INDICATOR / CLUSTER		**Data and Analysis (DA):**
EXPECTATION / STANDARD		Computing systems exist to process data. The amount of digital data generated in the world is rapidly expanding, and the need to process data effectively is increasingly important. Data is collected and stored so it can be analyzed to better understand the world and make more accurate predictions.

STANDARD / AREA OF LEARNING		**Utah 6-12 Computer Science Standards**
OBJECTIVE / STRAND		**Core Concepts**
INDICATOR / CLUSTER		**Algorithms and Programming (AP):**
EXPECTATION / STANDARD		An algorithm is a sequence of steps designed to accomplish a specific task. Algorithms are translated into programs, or code, to provide instructions for computing devices. Algorithms and programming control all computing systems, empowering people to communicate with the world in new ways and solve compelling problems. The development process to create meaningful and efficient programs involves choosing which information to use and how to process and store it, breaking apart large problems into smaller ones, recombining existing solutions, and analyzing different solutions.

STANDARD / AREA OF LEARNING		**Utah 6-12 Computer Science Standards**
OBJECTIVE / STRAND		**Core Practices**
INDICATOR / CLUSTER	**Practice 1:**	**Fostering an Inclusive Computing Culture**
EXPECTATION / STANDARD		**By the end of Grade 12, students should be able to:**
INDICATOR	1	Include the unique perspectives of others and reflect on one's own perspectives when designing and developing computational products.

INDICATOR	2	Address the needs of diverse end users during the design process to produce artifacts with broad accessibility and usability.

STANDARD / AREA OF LEARNING		**Utah 6-12 Computer Science Standards**
OBJECTIVE / STRAND		**Core Practices**
INDICATOR / CLUSTER	**Practice 2:**	**Collaborating Around Computing**
EXPECTATION / STANDARD		**By the end of Grade 12, students should be able to:**
INDICATOR	2	Create team norms, expectations, and equitable workloads to increase efficiency and effectiveness.

STANDARD / AREA OF LEARNING		**Utah 6-12 Computer Science Standards**
OBJECTIVE / STRAND		**Core Practices**
INDICATOR / CLUSTER	**Practice 3:**	**Recognizing and Defining Computational Problems**
EXPECTATION / STANDARD		**By the end of Grade 12, students should be able to:**
INDICATOR	2	Decompose complex real-world problems into manageable subproblems that could integrate existing solutions or procedures.
INDICATOR	3	Evaluate whether it is appropriate and feasible to solve a problem computationally.

STANDARD / AREA OF LEARNING		**Utah 6-12 Computer Science Standards**
OBJECTIVE / STRAND		**Core Practices**
INDICATOR / CLUSTER	**Practice 4:**	**Developing and Using Abstractions**
EXPECTATION / STANDARD		**By the end of Grade 12, students should be able to:**
INDICATOR	3	Create modules and develop points of interaction that can apply to multiple situations and reduce complexity.

STANDARD / AREA OF LEARNING		**Utah 6-12 Computer Science Standards**
OBJECTIVE / STRAND		**Core Practices**
INDICATOR / CLUSTER	**Practice 5:**	**Creating Computational Artifacts**
EXPECTATION / STANDARD		**By the end of Grade 12, students should be able to:**
INDICATOR	1	Plan the development of a computational artifact using an iterative process that includes reflection on and modification of the plan, taking into account key features, time and resource constraints, and user expectations.

INDICATOR	2	Create a computational artifact for practical intent, personal expression, or to address a societal issue.

STANDARD / AREA OF LEARNING		**Utah 6-12 Computer Science Standards**
OBJECTIVE / STRAND		**Core Practices**
INDICATOR / CLUSTER	**Practice 6:**	**Testing and Refining Computational Artifacts**
EXPECTATION / STANDARD		**By the end of Grade 12, students should be able to:**
INDICATOR	1	Systematically test computational artifacts by considering all scenarios and using test cases.

Vermont Content Standards

Mathematics

Grade **7** - Adopted: **2010 (CCSS)**

STANDARD / STRAND	VT.MP.	Mathematical Practices
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD	MP.1.	Make sense of problems and persevere in solving them.
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD	MP.2.	Reason abstractly and quantitatively.
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD	MP.3.	Construct viable arguments and critique the reasoning of others.
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD	MP.4.	Model with mathematics.
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD	MP.6.	Attend to precision.
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD	MP.7.	Look for and make use of structure.
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD	MP.8.	Look for and express regularity in repeated reasoning.

STANDARD / STRAND	**VT.7.NS.**	**The Number System**
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD		**Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.**
GRADE LEVEL EXPECTATION / KNOWLEDGE AND SKILL	**7.NS.1.**	**Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.**
GRADE LEVEL EXPECTATION	7.NS.1(d)	Apply properties of operations as strategies to add and subtract rational numbers.

STANDARD / STRAND	**VT.7.NS.**	**The Number System**
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD		**Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.**
GRADE LEVEL EXPECTATION / KNOWLEDGE AND SKILL	**7.NS.2.**	**Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.**
GRADE LEVEL EXPECTATION	7.NS.2(a)	Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (-1)(-1) = 1 and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.
GRADE LEVEL EXPECTATION	7.NS.2(c)	Apply properties of operations as strategies to multiply and divide rational numbers.

STANDARD / STRAND	**VT.7.EE.**	**Expressions and Equations**
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD		**Solve real-life and mathematical problems using numerical and algebraic expressions and equations.**
GRADE LEVEL EXPECTATION / KNOWLEDGE AND SKILL	**7.EE.4.**	**Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.**
GRADE LEVEL EXPECTATION	7.EE.4(a)	Solve word problems leading to equations of the form px + q = r and p(x + q) = r, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?

Vermont Content Standards

Mathematics

Grade **8** - Adopted: **2010 (CCSS)**

STANDARD / STRAND	**VT.MP.**	**Mathematical Practices**
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD	MP.1.	Make sense of problems and persevere in solving them.

ESSENTIAL KNOWLEDGE AND SKILL / STANDARD	MP.2.	Reason abstractly and quantitatively.
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD	MP.3.	Construct viable arguments and critique the reasoning of others.
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD	MP.4.	Model with mathematics.
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD	MP.6.	Attend to precision.
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD	MP.7.	Look for and make use of structure.
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD	MP.8.	Look for and express regularity in repeated reasoning.

STANDARD / STRAND	**VT.8.EE.**	**Expressions and Equations**
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD		**Analyze and solve linear equations and pairs of simultaneous linear equations.**
GRADE LEVEL EXPECTATION / KNOWLEDGE AND SKILL	**8.EE.7.**	**Solve linear equations in one variable.**
GRADE LEVEL EXPECTATION	8.EE.7(a)	Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers).
GRADE LEVEL EXPECTATION	8.EE.7(b)	Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.

Vermont Content Standards

Science

Grade **7** - Adopted: **2014**

STANDARD / STRAND	**VT.MS-LS.**	**LIFE SCIENCE**
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD	**MS-LS2.**	**Ecosystems: Interactions, Energy, and Dynamics**

GRADE LEVEL EXPECTATION / KNOWLEDGE AND SKILL		**Students who demonstrate understanding can:**
GRADE LEVEL EXPECTATION	MS-LS2-5.	Evaluate competing design solutions for maintaining biodiversity and ecosystem services.
STANDARD / STRAND	**VT.MS-ESS.**	**EARTH AND SPACE SCIENCE**
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD	**MS-ESS3.**	**Earth and Human Activity**
GRADE LEVEL EXPECTATION / KNOWLEDGE AND SKILL		**Students who demonstrate understanding can:**
GRADE LEVEL EXPECTATION	MS-ESS3-3.	Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.
GRADE LEVEL EXPECTATION	MS-ESS3-4.	Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.

Grade **7** - Adopted: **2010**

STANDARD / STRAND	**VT.RST.6-8.**	**Reading Standards for Literacy in Science and Technical Subjects**
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD		**Key Ideas and Details**
GRADE LEVEL EXPECTATION / KNOWLEDGE AND SKILL	RST.6-8.2.	Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.
STANDARD / STRAND	**VT.RST.6-8.**	**Reading Standards for Literacy in Science and Technical Subjects**
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD		**Integration of Knowledge and Ideas**
GRADE LEVEL EXPECTATION / KNOWLEDGE AND SKILL	RST.6-8.9.	Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.
STANDARD / STRAND	**VT.RST.6-8.**	**Reading Standards for Literacy in Science and Technical Subjects**
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD		**Range of Reading and Level of Text Complexity**

GRADE LEVEL EXPECTATION / KNOWLEDGE AND SKILL	RST.6-8.10.	By the end of grade 8, read and comprehend science/technical texts in the grades 6-8 text complexity band independently and proficiently.

Vermont Content Standards

Science

Grade **8** - Adopted: **2014**

STANDARD / STRAND	VT.MS-LS.	LIFE SCIENCE
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD	MS-LS2.	Ecosystems: Interactions, Energy, and Dynamics
GRADE LEVEL EXPECTATION / KNOWLEDGE AND SKILL		Students who demonstrate understanding can:
GRADE LEVEL EXPECTATION	MS-LS2-5.	Evaluate competing design solutions for maintaining biodiversity and ecosystem services.

STANDARD / STRAND	VT.MS-ESS.	EARTH AND SPACE SCIENCE
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD	MS-ESS3.	Earth and Human Activity
GRADE LEVEL EXPECTATION / KNOWLEDGE AND SKILL		Students who demonstrate understanding can:
GRADE LEVEL EXPECTATION	MS-ESS3-3.	Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.
GRADE LEVEL EXPECTATION	MS-ESS3-4.	Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.

Grade **8** - Adopted: **2010**

STANDARD / STRAND	VT.RST.6-8.	Reading Standards for Literacy in Science and Technical Subjects
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD		Key Ideas and Details
GRADE LEVEL EXPECTATION / KNOWLEDGE AND SKILL	RST.6-8.2.	Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.

STANDARD / STRAND	VT.RST.6-8.	Reading Standards for Literacy in Science and Technical Subjects
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD		Integration of Knowledge and Ideas

GRADE LEVEL EXPECTATION / KNOWLEDGE AND SKILL	RST.6-8.9.	Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.
STANDARD / STRAND	**VT.RST.6-8.**	**Reading Standards for Literacy in Science and Technical Subjects**
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD		**Range of Reading and Level of Text Complexity**
GRADE LEVEL EXPECTATION / KNOWLEDGE AND SKILL	RST.6-8.10.	By the end of grade 8, read and comprehend science/technical texts in the grades 6-8 text complexity band independently and proficiently.

Vermont Content Standards

Technology Education

Grade **7** - Adopted: **2017**

STANDARD / STRAND	**ISTE-S.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.**
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD	ISTE-S.3.d.	Students build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions.
STANDARD / STRAND	**ISTE-S.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.**
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD	ISTE-S.4.a.	Students know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD	ISTE-S.4.b.	Students select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.
STANDARD / STRAND	**ISTE-S.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.**
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD	ISTE-S.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.
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD	ISTE-S.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.

ESSENTIAL KNOWLEDGE AND SKILL / STANDARD	ISTE-S.5.d.	Students understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.

Vermont Content Standards

Technology Education

Grade **8** - Adopted: **2017**

STANDARD / STRAND	**ISTE-S.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.**
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD	ISTE-S.3.d.	Students build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions.
STANDARD / STRAND	**ISTE-S.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.**
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD	ISTE-S.4.a.	Students know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD	ISTE-S.4.b.	Students select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.
STANDARD / STRAND	**ISTE-S.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.**
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD	ISTE-S.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.
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD	ISTE-S.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.
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD	ISTE-S.5.d.	Students understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.

Virginia Standards of Learning

Mathematics

Grade **7** - Adopted: **2016**

STRAND / TOPIC	**VA.PFA.7.**	**Patterns, Functions, and Algebra**
STANDARD / STRAND	7.12.	The student will solve two-step linear equations in one variable, including practical problems that require the solution of a two-step linear equation in one variable.

Virginia Standards of Learning

Science

Grade **7** - Adopted: **2018**

STRAND / TOPIC		**Life Science**
STANDARD / STRAND	**LS.1.**	**The student will demonstrate an understanding of scientific and engineering practices by:**
INDICATOR / STANDARD	**LS.1.d.**	**constructing and critiquing conclusions and explanations**
INDICATOR	LS.1.d.2.	construct scientific explanations based on valid and reliable evidence obtained from sources (including the students' own investigations)

STRAND / TOPIC		**Life Science**
STANDARD / STRAND	**LS.1.**	**The student will demonstrate an understanding of scientific and engineering practices by:**
INDICATOR / STANDARD	**LS.1.f.**	**obtaining, evaluating, and communicating information**
INDICATOR	LS.1.f.1.	read scientific texts, including those adapted for classroom use, to obtain scientific and/or technical information

Virginia Standards of Learning

Science

Grade **8** - Adopted: **2018**

STRAND / TOPIC		**Life Science**
STANDARD / STRAND	**LS.1.**	**The student will demonstrate an understanding of scientific and engineering practices by:**
INDICATOR / STANDARD	**LS.1.d.**	**constructing and critiquing conclusions and explanations**
INDICATOR	LS.1.d.2.	construct scientific explanations based on valid and reliable evidence obtained from sources (including the students' own investigations)

STRAND / TOPIC		**Life Science**
STANDARD / STRAND	**LS.1.**	**The student will demonstrate an understanding of scientific and engineering practices by:**
INDICATOR / STANDARD	**LS.1.f.**	**obtaining, evaluating, and communicating information**
INDICATOR	LS.1.f.1.	read scientific texts, including those adapted for classroom use, to obtain scientific and/or technical information

Virginia Standards of Learning

Technology Education

Grade **7** - Adopted: **2020**

STRAND / TOPIC		**Digital Learning Integration Standards of Learning for Virginia Public Schools**
STANDARD / STRAND	**KC.**	**Knowledge Constructor (KC)**
INDICATOR / STANDARD		**Students critically curate a variety of digital resources using appropriate technologies, including assistive technologies, to construct knowledge, produce creative digital works, and make meaningful learning experiences for themselves and others.**

INDICATOR	**KC.D.**	**Actively explore real-world issues and problems, develop ideas and theories, and pursue answers and solutions.**
PROGRESS INDICATOR	KC.D.m.	Students use digital resources and tools to explore real-world issues and problems and actively pursue solutions.

STRAND / TOPIC		**Digital Learning Integration Standards of Learning for Virginia Public Schools**
STANDARD / STRAND	**ID.**	**Innovative Designer (ID)**
INDICATOR / STANDARD		**Students use a variety of technologies, including assistive technologies, within a design process to identify and solve problems by creating new, useful or imaginative solutions or iterations.**
INDICATOR	**ID.A.**	**Know and use appropriate technologies in a purposeful design process for generating ideas, testing theories, creating innovative digital works, or solving authentic problems.**
PROGRESS INDICATOR	ID.A.m.	In collaboration with an educator, students use appropriate technologies in a design process to generate ideas, create innovative products, or solve authentic problems.

STRAND / TOPIC		**Digital Learning Integration Standards of Learning for Virginia Public Schools**
STANDARD / STRAND	**ID.**	**Innovative Designer (ID)**
INDICATOR / STANDARD		**Students use a variety of technologies, including assistive technologies, within a design process to identify and solve problems by creating new, useful or imaginative solutions or iterations.**
INDICATOR	**ID.B.**	**Select and use appropriate technologies to plan and manage a design process that considers design constraints and calculated risks.**
PROGRESS INDICATOR	ID.B.m.	In collaboration with an educator, students select and use appropriate technologies to plan and manage a design process that identifies design constraints and trade-offs and weighs risks.

STRAND / TOPIC		**Digital Learning Integration Standards of Learning for Virginia Public Schools**
STANDARD / STRAND	**ID.**	**Innovative Designer (ID)**
INDICATOR / STANDARD		**Students use a variety of technologies, including assistive technologies, within a design process to identify and solve problems by creating new, useful or imaginative solutions or iterations.**
INDICATOR	**ID.C.**	**Use appropriate technologies to develop, test, and refine prototypes as part of a cyclical design process.**
PROGRESS INDICATOR	ID.C.m.	In collaboration with an educator, students use appropriate technologies in a cyclical design process to develop prototypes and demonstrate the use of setbacks as potential opportunities for improvement.

STRAND / TOPIC		**Digital Learning Integration Standards of Learning for Virginia Public Schools**
STANDARD / STRAND	**ID.**	**Innovative Designer (ID)**
INDICATOR / STANDARD		**Students use a variety of technologies, including assistive technologies, within a design process to identify and solve problems by creating new, useful or imaginative solutions or iterations.**
INDICATOR	**ID.D.**	**Exhibit a tolerance for ambiguity, perseverance, and the capacity to work with open-ended problems.**
PROGRESS INDICATOR	ID.D.m.	In collaboration with an educator, students demonstrate an ability to persevere and handle greater ambiguity as they work to solve open-ended problems.

STRAND / TOPIC		Digital Learning Integration Standards of Learning for Virginia Public Schools
STANDARD / STRAND	CT.	Computational Thinker (CT)
INDICATOR / STANDARD		Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods, including those that leverage assistive technologies, to develop and test solutions.
INDICATOR	CT.A.	Formulate problem definitions suited for technology-assisted methods such as data analysis, modeling and algorithmic thinking in exploring and finding solutions.
PROGRESS INDICATOR	CT.A.m.	Students create, identify, explore, and solve problems using technology-assisted methods such as data analysis, modeling, or algorithmic thinking.

STRAND / TOPIC		Digital Learning Integration Standards of Learning for Virginia Public Schools
STANDARD / STRAND	CT.	Computational Thinker (CT)
INDICATOR / STANDARD		Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods, including those that leverage assistive technologies, to develop and test solutions.
INDICATOR	CT.B.	Collect data or identify relevant data sets, use appropriate technologies to analyze them, and represent data in various ways to facilitate problem-solving and decision-making.
PROGRESS INDICATOR	CT.B.m.	Students find or organize data and use appropriate technologies to interpret, analyze, and represent data to construct models, predict outcomes, solve problems, and make evidence-based decisions.

STRAND / TOPIC		Digital Learning Integration Standards of Learning for Virginia Public Schools
STANDARD / STRAND	CT.	Computational Thinker (CT)
INDICATOR / STANDARD		Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods, including those that leverage assistive technologies, to develop and test solutions.
INDICATOR	CT.C.	Break problems into component parts, extract key information, and develop descriptive models, using technologies when appropriate, to understand complex systems or facilitate problem-solving.
PROGRESS INDICATOR	CT.C.m.	Students break problems into component parts, identify key pieces and use that information to problem solve using technologies, when appropriate.

STRAND / TOPIC		Digital Learning Integration Standards of Learning for Virginia Public Schools
STANDARD / STRAND	CC.	Creative Communicator (CC)
INDICATOR / STANDARD		Students communicate clearly and express themselves creatively for a variety of purposes using appropriate technologies (including assistive technologies), styles, formats, and digital media appropriate to their goals.
INDICATOR	CC.B.	Create original works or responsibly repurpose or remix digital resources into new creations.
PROGRESS INDICATOR	CC.B.m.	Students use appropriate technologies to create new digital works or responsibly repurpose or remix other digital works into new digital works.

STRAND / TOPIC		Digital Learning Integration Standards of Learning for Virginia Public Schools
STANDARD / STRAND	GC.	Global Collaborator (GC)

INDICATOR / STANDARD		**Students use appropriate technologies, including assistive technologies, to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.**
INDICATOR	**GC.D.**	**Explore local and global issues and use collaborative technologies to work with others to investigate solutions.**
PROGRESS INDICATOR	GC.D.m.	Students use collaborative technologies to work with others to understand problems, investigate and develop solutions related to local and global issues.

Virginia Standards of Learning

Technology Education

Grade **8** - Adopted: **2020**

STRAND / TOPIC		**Digital Learning Integration Standards of Learning for Virginia Public Schools**
STANDARD / STRAND	**KC.**	**Knowledge Constructor (KC)**
INDICATOR / STANDARD		**Students critically curate a variety of digital resources using appropriate technologies, including assistive technologies, to construct knowledge, produce creative digital works, and make meaningful learning experiences for themselves and others.**
INDICATOR	**KC.D.**	**Actively explore real-world issues and problems, develop ideas and theories, and pursue answers and solutions.**
PROGRESS INDICATOR	KC.D.m.	Students use digital resources and tools to explore real-world issues and problems and actively pursue solutions.

STRAND / TOPIC		**Digital Learning Integration Standards of Learning for Virginia Public Schools**
STANDARD / STRAND	**ID.**	**Innovative Designer (ID)**
INDICATOR / STANDARD		**Students use a variety of technologies, including assistive technologies, within a design process to identify and solve problems by creating new, useful or imaginative solutions or iterations.**
INDICATOR	**ID.A.**	**Know and use appropriate technologies in a purposeful design process for generating ideas, testing theories, creating innovative digital works, or solving authentic problems.**
PROGRESS INDICATOR	ID.A.m.	In collaboration with an educator, students use appropriate technologies in a design process to generate ideas, create innovative products, or solve authentic problems.

STRAND / TOPIC		**Digital Learning Integration Standards of Learning for Virginia Public Schools**
STANDARD / STRAND	**ID.**	**Innovative Designer (ID)**
INDICATOR / STANDARD		**Students use a variety of technologies, including assistive technologies, within a design process to identify and solve problems by creating new, useful or imaginative solutions or iterations.**
INDICATOR	**ID.B.**	**Select and use appropriate technologies to plan and manage a design process that considers design constraints and calculated risks.**
PROGRESS INDICATOR	ID.B.m.	In collaboration with an educator, students select and use appropriate technologies to plan and manage a design process that identifies design constraints and trade-offs and weighs risks.

STRAND / TOPIC		**Digital Learning Integration Standards of Learning for Virginia Public Schools**
STANDARD / STRAND	**ID.**	**Innovative Designer (ID)**
INDICATOR / STANDARD		**Students use a variety of technologies, including assistive technologies, within a design process to identify and solve problems by creating new, useful or imaginative solutions or iterations.**

INDICATOR	**ID.C.**	**Use appropriate technologies to develop, test, and refine prototypes as part of a cyclical design process.**
PROGRESS INDICATOR	ID.C.m.	In collaboration with an educator, students use appropriate technologies in a cyclical design process to develop prototypes and demonstrate the use of setbacks as potential opportunities for improvement.

STRAND / TOPIC		**Digital Learning Integration Standards of Learning for Virginia Public Schools**
STANDARD / STRAND	**ID.**	**Innovative Designer (ID)**
INDICATOR / STANDARD		**Students use a variety of technologies, including assistive technologies, within a design process to identify and solve problems by creating new, useful or imaginative solutions or iterations.**
INDICATOR	**ID.D.**	**Exhibit a tolerance for ambiguity, perseverance, and the capacity to work with open-ended problems.**
PROGRESS INDICATOR	ID.D.m.	In collaboration with an educator, students demonstrate an ability to persevere and handle greater ambiguity as they work to solve open-ended problems.

STRAND / TOPIC		**Digital Learning Integration Standards of Learning for Virginia Public Schools**
STANDARD / STRAND	**CT.**	**Computational Thinker (CT)**
INDICATOR / STANDARD		**Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods, including those that leverage assistive technologies, to develop and test solutions.**
INDICATOR	**CT.A.**	**Formulate problem definitions suited for technology-assisted methods such as data analysis, modeling and algorithmic thinking in exploring and finding solutions.**
PROGRESS INDICATOR	CT.A.m.	Students create, identify, explore, and solve problems using technology-assisted methods such as data analysis, modeling, or algorithmic thinking.

STRAND / TOPIC		**Digital Learning Integration Standards of Learning for Virginia Public Schools**
STANDARD / STRAND	**CT.**	**Computational Thinker (CT)**
INDICATOR / STANDARD		**Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods, including those that leverage assistive technologies, to develop and test solutions.**
INDICATOR	**CT.B.**	**Collect data or identify relevant data sets, use appropriate technologies to analyze them, and represent data in various ways to facilitate problem-solving and decision-making.**
PROGRESS INDICATOR	CT.B.m.	Students find or organize data and use appropriate technologies to interpret, analyze, and represent data to construct models, predict outcomes, solve problems, and make evidence-based decisions.

STRAND / TOPIC		**Digital Learning Integration Standards of Learning for Virginia Public Schools**
STANDARD / STRAND	**CT.**	**Computational Thinker (CT)**
INDICATOR / STANDARD		**Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods, including those that leverage assistive technologies, to develop and test solutions.**
INDICATOR	**CT.C.**	**Break problems into component parts, extract key information, and develop descriptive models, using technologies when appropriate, to understand complex systems or facilitate problem-solving.**

PROGRESS INDICATOR	CT.C.m.	Students break problems into component parts, identify key pieces and use that information to problem solve using technologies, when appropriate.

STRAND / TOPIC		**Digital Learning Integration Standards of Learning for Virginia Public Schools**
STANDARD / STRAND	**CC.**	**Creative Communicator (CC)**
INDICATOR / STANDARD		**Students communicate clearly and express themselves creatively for a variety of purposes using appropriate technologies (including assistive technologies), styles, formats, and digital media appropriate to their goals.**
INDICATOR	**CC.B.**	**Create original works or responsibly repurpose or remix digital resources into new creations.**
PROGRESS INDICATOR	CC.B.m.	Students use appropriate technologies to create new digital works or responsibly repurpose or remix other digital works into new digital works.

STRAND / TOPIC		**Digital Learning Integration Standards of Learning for Virginia Public Schools**
STANDARD / STRAND	**GC.**	**Global Collaborator (GC)**
INDICATOR / STANDARD		**Students use appropriate technologies, including assistive technologies, to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.**
INDICATOR	**GC.D.**	**Explore local and global issues and use collaborative technologies to work with others to investigate solutions.**
PROGRESS INDICATOR	GC.D.m.	Students use collaborative technologies to work with others to understand problems, investigate and develop solutions related to local and global issues.

Washington DC Academic Standards

Mathematics

Grade **7** - Adopted: **2010**

CONTENT STANDARD / STRAND / DISCIPLINE	**DC.CC.7. MP.**	**Mathematical Practices**
STANDARD / ESSENTIAL SKILL	7.MP.1.	Make sense of problems and persevere in solving them.
STANDARD / ESSENTIAL SKILL	7.MP.2.	Reason abstractly and quantitatively.
STANDARD / ESSENTIAL SKILL	7.MP.3.	Construct viable arguments and critique the reasoning of others.
STANDARD / ESSENTIAL SKILL	7.MP.4.	Model with mathematics.
STANDARD / ESSENTIAL SKILL	7.MP.6.	Attend to precision.

STANDARD / ESSENTIAL SKILL	7.MP.7.	Look for and make use of structure.
STANDARD / ESSENTIAL SKILL	7.MP.8.	Look for and express regularity in repeated reasoning.
CONTENT STANDARD / STRAND / DISCIPLINE	**DC.CC.7.NS.**	**The Number System**
STANDARD / ESSENTIAL SKILL		**Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.**
STUDENT EXPECTATION / ESSENTIAL SKILL	**7.NS.1.**	**Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.**
EXPECTATION	7.NS.1.d.	Apply properties of operations as strategies to add and subtract rational numbers.
CONTENT STANDARD / STRAND / DISCIPLINE	**DC.CC.7.NS.**	**The Number System**
STANDARD / ESSENTIAL SKILL		**Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.**
STUDENT EXPECTATION / ESSENTIAL SKILL	**7.NS.2.**	**Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.**
EXPECTATION	7.NS.2.a.	Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (-1)(-1) = 1 and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.
EXPECTATION	7.NS.2.c.	Apply properties of operations as strategies to multiply and divide rational numbers.
CONTENT STANDARD / STRAND / DISCIPLINE	**DC.CC.7.EE.**	**Expressions and Equations**
STANDARD / ESSENTIAL SKILL		**Solve real-life and mathematical problems using numerical and algebraic expressions and equations.**
STUDENT EXPECTATION / ESSENTIAL SKILL	**7.EE.4.**	**Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.**
EXPECTATION	7.EE.4.a.	Solve word problems leading to equations of the form px + q = r and p(x + q) = r, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?

CONTENT STANDARD / STRAND / DISCIPLINE	DC.CC.8.MP.	Mathematical Practices
STANDARD / ESSENTIAL SKILL	8.MP.1.	Make sense of problems and persevere in solving them.
STANDARD / ESSENTIAL SKILL	8.MP.2.	Reason abstractly and quantitatively.
STANDARD / ESSENTIAL SKILL	8.MP.3.	Construct viable arguments and critique the reasoning of others.
STANDARD / ESSENTIAL SKILL	8.MP.4.	Model with mathematics.
STANDARD / ESSENTIAL SKILL	8.MP.6.	Attend to precision.
STANDARD / ESSENTIAL SKILL	8.MP.7.	Look for and make use of structure.
STANDARD / ESSENTIAL SKILL	8.MP.8.	Look for and express regularity in repeated reasoning.

CONTENT STANDARD / STRAND / DISCIPLINE	DC.CC.8.EE.	Expressions and Equations
STANDARD / ESSENTIAL SKILL		**Analyze and solve linear equations and pairs of simultaneous linear equations.**
STUDENT EXPECTATION / ESSENTIAL SKILL	**8.EE.7.**	**Solve linear equations in one variable.**
EXPECTATION	8.EE.7.a.	Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers).
EXPECTATION	8.EE.7.b.	Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.

CONTENT STANDARD / STRAND / DISCIPLINE	**DC.MS-LS.**	**LIFE SCIENCE**
STANDARD / ESSENTIAL SKILL	**MS-LS2.**	**Ecosystems: Interactions, Energy, and Dynamics**
STUDENT EXPECTATION / ESSENTIAL SKILL		**Students who demonstrate understanding can:**
EXPECTATION	MS-LS2-5.	Evaluate competing design solutions for maintaining biodiversity and ecosystem services.

CONTENT STANDARD / STRAND / DISCIPLINE	**DC.MS-ESS.**	**EARTH AND SPACE SCIENCE**
STANDARD / ESSENTIAL SKILL	**MS-ESS3.**	**Earth and Human Activity**
STUDENT EXPECTATION / ESSENTIAL SKILL		**Students who demonstrate understanding can:**
EXPECTATION	MS-ESS3-3.	Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.
EXPECTATION	MS-ESS3-4.	Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.

Grade **7** - Adopted: **2010**

CONTENT STANDARD / STRAND / DISCIPLINE	**DC.6-8.RST.**	**Reading Standards for Literacy in Science and Technical Subjects**
STANDARD / ESSENTIAL SKILL		**Key Ideas and Details**
STUDENT EXPECTATION / ESSENTIAL SKILL	6-8.RST.2.	Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.

CONTENT STANDARD / STRAND / DISCIPLINE	**DC.6-8.RST.**	**Reading Standards for Literacy in Science and Technical Subjects**
STANDARD / ESSENTIAL SKILL		**Integration of Knowledge and Ideas**
STUDENT EXPECTATION / ESSENTIAL SKILL	6-8.RST.9.	Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.

CONTENT STANDARD / STRAND / DISCIPLINE	**DC.6-8.RST.**	**Reading Standards for Literacy in Science and Technical Subjects**
STANDARD / ESSENTIAL SKILL		**Range of Reading and Level of Text Complexity**
STUDENT EXPECTATION / ESSENTIAL SKILL	6-8.RST.10.	By the end of grade 8, read and comprehend science/technical texts in the grades 6-8 text complexity band independently and proficiently.

Washington DC Academic Standards

Science

Grade **8** - Adopted: **2013**

CONTENT STANDARD / STRAND / DISCIPLINE	**DC.MS-LS.**	**LIFE SCIENCE**
STANDARD / ESSENTIAL SKILL	**MS-LS2.**	**Ecosystems: Interactions, Energy, and Dynamics**
STUDENT EXPECTATION / ESSENTIAL SKILL		**Students who demonstrate understanding can:**
EXPECTATION	MS-LS2-5.	Evaluate competing design solutions for maintaining biodiversity and ecosystem services.

CONTENT STANDARD / STRAND / DISCIPLINE	**DC.MS-ESS.**	**EARTH AND SPACE SCIENCE**
STANDARD / ESSENTIAL SKILL	**MS-ESS3.**	**Earth and Human Activity**
STUDENT EXPECTATION / ESSENTIAL SKILL		**Students who demonstrate understanding can:**
EXPECTATION	MS-ESS3-3.	Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.
EXPECTATION	MS-ESS3-4.	Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.

Grade **8** - Adopted: **2010**

CONTENT STANDARD / STRAND / DISCIPLINE	**DC.6-8.RST.**	**Reading Standards for Literacy in Science and Technical Subjects**
STANDARD / ESSENTIAL SKILL		**Key Ideas and Details**

STUDENT EXPECTATION / ESSENTIAL SKILL	6-8.RST.2.	Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.

CONTENT STANDARD / STRAND / DISCIPLINE	**DC.6-8.RST.**	**Reading Standards for Literacy in Science and Technical Subjects**
STANDARD / ESSENTIAL SKILL		**Integration of Knowledge and Ideas**
STUDENT EXPECTATION / ESSENTIAL SKILL	6-8.RST.9.	Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.

CONTENT STANDARD / STRAND / DISCIPLINE	**DC.6-8.RST.**	**Reading Standards for Literacy in Science and Technical Subjects**
STANDARD / ESSENTIAL SKILL		**Range of Reading and Level of Text Complexity**
STUDENT EXPECTATION / ESSENTIAL SKILL	6-8.RST.10.	By the end of grade 8, read and comprehend science/technical texts in the grades 6-8 text complexity band independently and proficiently.

Washington State K-12 Learning Standards and Guidelines

Mathematics

Grade **7** - 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.6.	Attend to precision.

BIG IDEA / CORE CONTENT	MP.7.	Look for and make use of structure.
BIG IDEA / CORE CONTENT	MP.8.	Look for and express regularity in repeated reasoning.

EALR	WA.7.NS.	The Number System
BIG IDEA / CORE CONTENT		**Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.**
CORE CONTENT / CONTENT STANDARD	**7.NS.1.**	**Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.**
CONTENT STANDARD / PERFORMANCE EXPECTATION	7.NS.1(d)	Apply properties of operations as strategies to add and subtract rational numbers.

EALR	WA.7.NS.	The Number System
BIG IDEA / CORE CONTENT		**Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.**
CORE CONTENT / CONTENT STANDARD	**7.NS.2.**	**Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.**
CONTENT STANDARD / PERFORMANCE EXPECTATION	7.NS.2(a)	Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (-1)(-1) = 1 and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.
CONTENT STANDARD / PERFORMANCE EXPECTATION	7.NS.2(c)	Apply properties of operations as strategies to multiply and divide rational numbers.

EALR	WA.7.EE.	Expressions and Equations
BIG IDEA / CORE CONTENT		**Solve real-life and mathematical problems using numerical and algebraic expressions and equations.**
CORE CONTENT / CONTENT STANDARD	**7.EE.4.**	**Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.**
CONTENT STANDARD / PERFORMANCE EXPECTATION	7.EE.4(a)	Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?

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.6.	Attend to precision.
BIG IDEA / CORE CONTENT	MP.7.	Look for and make use of structure.
BIG IDEA / CORE CONTENT	MP.8.	Look for and express regularity in repeated reasoning.

EALR	WA.8.EE.	Expressions and Equations
BIG IDEA / CORE CONTENT		**Analyze and solve linear equations and pairs of simultaneous linear equations.**
CORE CONTENT / CONTENT STANDARD	**8.EE.7.**	**Solve linear equations in one variable.**
CONTENT STANDARD / PERFORMANCE EXPECTATION	8.EE.7(a)	Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers).
CONTENT STANDARD / PERFORMANCE EXPECTATION	8.EE.7(b)	Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.

Washington State K-12 Learning Standards and Guidelines

Science

Grade **7** - Adopted: **2014**

EALR	WA.MS-LS.	LIFE SCIENCE

BIG IDEA / CORE CONTENT	**MS-LS2.**	**Ecosystems: Interactions, Energy, and Dynamics**
CORE CONTENT / CONTENT STANDARD		**Students who demonstrate understanding can:**
CONTENT STANDARD / PERFORMANCE EXPECTATION	MS-LS2-5.	Evaluate competing design solutions for maintaining biodiversity and ecosystem services.

EALR	**WA.MS-ESS.**	**EARTH AND SPACE SCIENCE**
BIG IDEA / CORE CONTENT	**MS-ESS3.**	**Earth and Human Activity**
CORE CONTENT / CONTENT STANDARD		**Students who demonstrate understanding can:**
CONTENT STANDARD / PERFORMANCE EXPECTATION	MS-ESS3-3.	Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.
CONTENT STANDARD / PERFORMANCE EXPECTATION	MS-ESS3-4.	Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.

Grade **7** - Adopted: **2010**

EALR	**WA.RST.6-8.**	**Reading Standards for Literacy in Science and Technical Subjects**
BIG IDEA / CORE CONTENT		**Key Ideas and Details**
CORE CONTENT / CONTENT STANDARD	RST.6-8.2.	Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.

EALR	**WA.RST.6-8.**	**Reading Standards for Literacy in Science and Technical Subjects**
BIG IDEA / CORE CONTENT		**Integration of Knowledge and Ideas**
CORE CONTENT / CONTENT STANDARD	RST.6-8.9.	Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.

EALR	**WA.RST.6-8.**	**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.6-8.10.	By the end of grade 8, read and comprehend science/technical texts in the grades 6-8 text complexity band independently and proficiently.

Washington State K-12 Learning Standards and Guidelines

Science

Grade **8** - Adopted: **2014**

EALR	**WA.MS-LS.**	**LIFE SCIENCE**
BIG IDEA / CORE CONTENT	**MS-LS2.**	**Ecosystems: Interactions, Energy, and Dynamics**
CORE CONTENT / CONTENT STANDARD		**Students who demonstrate understanding can:**
CONTENT STANDARD / PERFORMANCE EXPECTATION	MS-LS2-5.	Evaluate competing design solutions for maintaining biodiversity and ecosystem services.

EALR	**WA.MS-ESS.**	**EARTH AND SPACE SCIENCE**
BIG IDEA / CORE CONTENT	**MS-ESS3.**	**Earth and Human Activity**
CORE CONTENT / CONTENT STANDARD		**Students who demonstrate understanding can:**
CONTENT STANDARD / PERFORMANCE EXPECTATION	MS-ESS3-3.	Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.
CONTENT STANDARD / PERFORMANCE EXPECTATION	MS-ESS3-4.	Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.

Grade **8** - Adopted: **2010**

EALR	**WA.RST.6-8.**	**Reading Standards for Literacy in Science and Technical Subjects**
BIG IDEA / CORE CONTENT		**Key Ideas and Details**
CORE CONTENT / CONTENT STANDARD	RST.6-8.2.	Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.

EALR	WA.RST.6-8.	Reading Standards for Literacy in Science and Technical Subjects
BIG IDEA / CORE CONTENT		**Integration of Knowledge and Ideas**
CORE CONTENT / CONTENT STANDARD	RST.6-8.9.	Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.

EALR	WA.RST.6-8.	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.6-8.10.	By the end of grade 8, read and comprehend science/technical texts in the grades 6-8 text complexity band independently and proficiently.

Washington State K-12 Learning Standards and Guidelines

Technology Education

Grade **7** - Adopted: **2018**

EALR	WA.ET.6-8.	Educational Technology Learning Standards
BIG IDEA / CORE CONTENT	**6-8.3.**	**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	6-8.3.d.	Students explore real-world issues and problems and actively pursue an understanding of them and solutions for them.

EALR	WA.ET.6-8.	Educational Technology Learning Standards
BIG IDEA / CORE CONTENT	**6-8.4.**	**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	6-8.4.a.	Students engage in a design process and employ it to generate ideas, create innovative products or solve authentic problems.

EALR	WA.ET.6-8.	Educational Technology Learning Standards
BIG IDEA / CORE CONTENT	**6-8.5.**	**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	6-8.5.a.	Students practice defining problems to solve by computing for data analysis, modeling or algorithmic thinking.

CORE CONTENT / CONTENT STANDARD	6-8.5.d.	Students demonstrate an understanding of how automation works and use algorithmic thinking to design and automate solutions.

EALR		**Computer Science**
BIG IDEA / CORE CONTENT		**Level 2: 6-8**
CORE CONTENT / CONTENT STANDARD	**2-CS.**	**Computing Systems**
CONTENT STANDARD / PERFORMANCE EXPECTATION	2-CS-01.	Recommend improvements to the design of computing devices, based on an analysis of how users interact with the devices. (P. 3.3)
CONTENT STANDARD / PERFORMANCE EXPECTATION	2-CS-03.	Systematically identify and fix problems with computing devices and their components. (P. 6.2)

EALR		**Computer Science**
BIG IDEA / CORE CONTENT		**Level 2: 6-8**
CORE CONTENT / CONTENT STANDARD	**2-AP.**	**Algorithms and Programming**
CONTENT STANDARD / PERFORMANCE EXPECTATION	2-AP-10.	Use flowcharts and/or pseudocode to address complex problems as algorithms. (P. 4.4, 4.1)
CONTENT STANDARD / PERFORMANCE EXPECTATION	2-AP-18.	Distribute tasks and maintain a project timeline when collaboratively developing computational artifacts. (P. 2.2)

EALR		**Computer Science**
BIG IDEA / CORE CONTENT		**Level 2: 6-8**
CORE CONTENT / CONTENT STANDARD	**2-IC.**	**Impacts of Computing**
CONTENT STANDARD / PERFORMANCE EXPECTATION	2-IC-22.	Collaborate with many contributors through strategies such as crowdsourcing or surveys when creating a computational artifact. (P. 2.4, P. 5.2)

EALR	WA.ET.6-8.	Educational Technology Learning Standards
BIG IDEA / CORE CONTENT	**6-8.3.**	**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	6-8.3.d.	Students explore real-world issues and problems and actively pursue an understanding of them and solutions for them.

EALR	WA.ET.6-8.	Educational Technology Learning Standards
BIG IDEA / CORE CONTENT	**6-8.4.**	**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	6-8.4.a.	Students engage in a design process and employ it to generate ideas, create innovative products or solve authentic problems.

EALR	WA.ET.6-8.	Educational Technology Learning Standards
BIG IDEA / CORE CONTENT	**6-8.5.**	**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	6-8.5.a.	Students practice defining problems to solve by computing for data analysis, modeling or algorithmic thinking.
CORE CONTENT / CONTENT STANDARD	6-8.5.d.	Students demonstrate an understanding of how automation works and use algorithmic thinking to design and automate solutions.

EALR		Computer Science
BIG IDEA / CORE CONTENT		**Level 2: 6-8**
CORE CONTENT / CONTENT STANDARD	**2-CS.**	**Computing Systems**
CONTENT STANDARD / PERFORMANCE EXPECTATION	2-CS-01.	Recommend improvements to the design of computing devices, based on an analysis of how users interact with the devices. (P. 3.3)
CONTENT STANDARD / PERFORMANCE EXPECTATION	2-CS-03.	Systematically identify and fix problems with computing devices and their components. (P. 6.2)

EALR		Computer Science
BIG IDEA / CORE CONTENT		**Level 2: 6-8**
CORE CONTENT / CONTENT STANDARD	**2-AP.**	**Algorithms and Programming**
CONTENT STANDARD / PERFORMANCE EXPECTATION	2-AP-10.	Use flowcharts and/or pseudocode to address complex problems as algorithms. (P. 4.4, 4.1)
CONTENT STANDARD / PERFORMANCE EXPECTATION	2-AP-18.	Distribute tasks and maintain a project timeline when collaboratively developing computational artifacts. (P. 2.2)

EALR		Computer Science
BIG IDEA / CORE CONTENT		**Level 2: 6-8**
CORE CONTENT / CONTENT STANDARD	**2-IC.**	**Impacts of Computing**
CONTENT STANDARD / PERFORMANCE EXPECTATION	2-IC-22.	Collaborate with many contributors through strategies such as crowdsourcing or surveys when creating a computational artifact. (P. 2.4, P. 5.2)

West Virginia College and Career Readiness Standards

Mathematics

Grade **7** - Adopted: **2016**

CONTENT STANDARD / COURSE	WV.M.MHM.	Mathematical Habits of Mind
CONTENT STANDARD / OBJECTIVE	MHM1.	Make sense of problems and persevere in solving them.
CONTENT STANDARD / OBJECTIVE	MHM2.	Reason abstractly and quantitatively.
CONTENT STANDARD / OBJECTIVE	MHM3.	Construct viable arguments and critique the reasoning of others.
CONTENT STANDARD / OBJECTIVE	MHM4.	Model with mathematics.

CONTENT STANDARD / OBJECTIVE	MHM6.	Attend to precision.
CONTENT STANDARD / OBJECTIVE	MHM7.	Look for and make use of structure.
CONTENT STANDARD / OBJECTIVE	MHM8.	Look for and express regularity in repeated reasoning.

CONTENT STANDARD / COURSE	**WV.M.7.NS.**	**The Number System**
CONTENT STANDARD / OBJECTIVE		**Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.**
OBJECTIVE / EXPECTATION	**M.7.4.**	**Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.**
GRADE LEVEL EXPECTATION	M.7.4.d.	Apply properties of operations as strategies to add and subtract rational numbers.

CONTENT STANDARD / COURSE	**WV.M.7.NS.**	**The Number System**
CONTENT STANDARD / OBJECTIVE		**Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.**
OBJECTIVE / EXPECTATION	**M.7.5.**	**Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.**
GRADE LEVEL EXPECTATION	M.7.5.a.	Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (–1)(–1) = 1 and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.
GRADE LEVEL EXPECTATION	M.7.5.c.	Apply properties of operations as strategies to multiply and divide rational numbers.

CONTENT STANDARD / COURSE	**WV.M.7.EE.**	**Expressions and Equations**
CONTENT STANDARD / OBJECTIVE		**Solve real-life and mathematical problems using numerical and algebraic expressions and equations.**
OBJECTIVE / EXPECTATION	**M.7.10.**	**Use variables to represent quantities in a real-world or mathematical problem and construct simple equations and inequalities to solve problems by reasoning about the quantities.**
GRADE LEVEL EXPECTATION	M.7.10.a.	Solve word problems leading to equations of the form px + q = r and p(x + q) = r, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. (e.g., The perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width? An arithmetic solution similar to “54 – 6 – 6 divided by 2” may be compared with the reasoning involved in solving the equation 2w – 12 = 54. An arithmetic solution similar to “54/2 – 6” may be compared with the reasoning involved in solving the equation 2(w – 6) = 54.)

CONTENT STANDARD / COURSE	**WV.M.MHM.**	**Mathematical Habits of Mind**
CONTENT STANDARD / OBJECTIVE	MHM1.	Make sense of problems and persevere in solving them.
CONTENT STANDARD / OBJECTIVE	MHM2.	Reason abstractly and quantitatively.
CONTENT STANDARD / OBJECTIVE	MHM3.	Construct viable arguments and critique the reasoning of others.
CONTENT STANDARD / OBJECTIVE	MHM4.	Model with mathematics.
CONTENT STANDARD / OBJECTIVE	MHM6.	Attend to precision.
CONTENT STANDARD / OBJECTIVE	MHM7.	Look for and make use of structure.
CONTENT STANDARD / OBJECTIVE	MHM8.	Look for and express regularity in repeated reasoning.

CONTENT STANDARD / COURSE	**WV.M.8.EE.**	**Expressions and Equations**
CONTENT STANDARD / OBJECTIVE		**Analyze and solve linear equations and pairs of simultaneous linear equations.**
OBJECTIVE / EXPECTATION	**M.8.9.**	**Solve linear equations in one variable.**
GRADE LEVEL EXPECTATION	M.8.9.a.	Give examples of linear equations in one variable with one solution, infinitely many solutions or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers).
GRADE LEVEL EXPECTATION	M.8.9.b.	Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.

CONTENT STANDARD / COURSE	**WV.M.1HS8.**	**8th Grade High School Mathematics I**
CONTENT STANDARD / OBJECTIVE		**Linear and Exponential Relationships**
OBJECTIVE / EXPECTATION		**Construct and compare linear, quadratic, and exponential models and solve problems.**

GRADE LEVEL EXPECTATION	**M.1HS8.28.**	**Distinguish between situations that can be modeled with linear functions and with exponential functions.**
INDICATOR	M.1HS8.28.a.	Prove that linear functions grow by equal differences over equal intervals; exponential functions grow by equal factors over equal intervals.

CONTENT STANDARD / COURSE	**WV.M.1HS8.**	**8th Grade High School Mathematics I**
CONTENT STANDARD / OBJECTIVE		**Reasoning with Equations**
OBJECTIVE / EXPECTATION		**Understand solving equations as a process of reasoning and explain the reasoning.**
GRADE LEVEL EXPECTATION	M.1HS8.32.	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.

CONTENT STANDARD / COURSE	**WV.M.1HS8.**	**8th Grade High School Mathematics I**
CONTENT STANDARD / OBJECTIVE		**Reasoning with Equations**
OBJECTIVE / EXPECTATION		**Solve equations and inequalities in one variable.**
GRADE LEVEL EXPECTATION	M.1HS8.33.	Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.

CONTENT STANDARD / COURSE	**WV.M.A18.**	**High School Algebra I for 8th Grade**
CONTENT STANDARD / OBJECTIVE		**Relationships between Quantities and Reasoning with Equations**
OBJECTIVE / EXPECTATION		**Understand solving equations as a process of reasoning and explain the reasoning.**
GRADE LEVEL EXPECTATION	M.A18.9.	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.

CONTENT STANDARD / COURSE	**WV.M.A18.**	**High School Algebra I for 8th Grade**
CONTENT STANDARD / OBJECTIVE		**Relationships between Quantities and Reasoning with Equations**
OBJECTIVE / EXPECTATION		**Solve equations and inequalities in one variable.**
GRADE LEVEL EXPECTATION	M.A18.10.	Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.

CONTENT STANDARD / COURSE	**WV.M.A18.**	**High School Algebra I for 8th Grade**
CONTENT STANDARD / OBJECTIVE		**Linear and Exponential Relationships**
OBJECTIVE / EXPECTATION		**Construct and compare linear, quadratic, and exponential models and solve problems.**
GRADE LEVEL EXPECTATION	**M.A18.35.**	**Distinguish between situations that can be modeled with linear functions and with exponential functions.**
INDICATOR	M.A18.35.a.	Prove that linear functions grow by equal differences over equal intervals; exponential functions grow by equal factors over equal intervals.

West Virginia College and Career Readiness Standards

Science

Grade **7** - Adopted: **2021**

CONTENT STANDARD / COURSE		**Science Indicators Grades 6-8**
CONTENT STANDARD / OBJECTIVE		**College- and Career-Readiness Indicators for Science**
OBJECTIVE / EXPECTATION		**Science Literacy**
GRADE LEVEL EXPECTATION		Reading with understanding articles about science in the popular press and engaging in social conversation about the validity of the conclusions

CONTENT STANDARD / COURSE		**Science – Grade 7**
CONTENT STANDARD / OBJECTIVE		**Earth and Space Science**
OBJECTIVE / EXPECTATION		**Human Impacts**
GRADE LEVEL EXPECTATION	S.7.21.	Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.

West Virginia College and Career Readiness Standards

Science

Grade **8** - Adopted: **2021**

CONTENT STANDARD / COURSE		**Science Indicators Grades 6-8**
CONTENT STANDARD / OBJECTIVE		**College- and Career-Readiness Indicators for Science**
OBJECTIVE / EXPECTATION		**Science Literacy**
GRADE LEVEL EXPECTATION		Reading with understanding articles about science in the popular press and engaging in social conversation about the validity of the conclusions

CONTENT STANDARD / COURSE		**Science – Grade 8**
CONTENT STANDARD / OBJECTIVE		**Earth and Space Science**
OBJECTIVE / EXPECTATION		**Human Impacts**
GRADE LEVEL EXPECTATION	S.8.17.	Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.

West Virginia College and Career Readiness Standards

Technology Education

Grade **7** - Adopted: **2019**

CONTENT STANDARD / COURSE	**2520.14.**	**West Virginia College- and Career-Readiness Standards for Technology and Computer Science**
CONTENT STANDARD / OBJECTIVE		**Computer Science 6-8**
OBJECTIVE / EXPECTATION		**Computer Systems and Computational Thinking**
GRADE LEVEL EXPECTATION	CS.6-8.1.	Analyze and devise problem-solving strategies cooperatively and collaboratively.

CONTENT STANDARD / COURSE	**2520.14.**	**West Virginia College- and Career-Readiness Standards for Technology and Computer Science**
CONTENT STANDARD / OBJECTIVE		**Computer Science 6-8**
OBJECTIVE / EXPECTATION		**Programming and Algorithms**
GRADE LEVEL EXPECTATION	CS.6-8.10.	Analyze the problem and use a tool (e.g., flow chart) to design an algorithm to solve complex problems.

CONTENT STANDARD / COURSE	**2520.14.**	**West Virginia College- and Career-Readiness Standards for Technology and Computer Science**
CONTENT STANDARD / OBJECTIVE		**Discovering Computer Science**
OBJECTIVE / EXPECTATION		**Computer Systems and Computational Thinking**
GRADE LEVEL EXPECTATION	CS.DCS.1.	Use the basic steps in algorithmic problem-solving to design solutions (e.g., problem statement and exploration, examination of sample instances, design, implementing a solution, testing, and evaluation).
GRADE LEVEL EXPECTATION	CS.DCS.3.	Define an algorithm as a sequence of instructions that can be processed by a computer.
GRADE LEVEL EXPECTATION	CS.DCS.5.	Act out searching and sorting algorithms.

GRADE LEVEL EXPECTATION	CS.DCS.9.	Interact with content-specific models and simulations (e.g., ecosystems, epidemics, molecular dynamics) to support learning and research.
GRADE LEVEL EXPECTATION	CS.DCS.10.	Evaluate what kinds of problems can be solved using modeling and simulation.
GRADE LEVEL EXPECTATION	CS.DCS.12.	Use abstraction to decompose a problem into sub problems.
CONTENT STANDARD / COURSE	**2520.14.**	**West Virginia College- and Career-Readiness Standards for Technology and Computer Science**
CONTENT STANDARD / OBJECTIVE		**Discovering Computer Science**
OBJECTIVE / EXPECTATION		**Programming and Algorithms**
GRADE LEVEL EXPECTATION	CS.DCS.20.	Select appropriate tools and technology resources to accomplish a variety of tasks and solve problems.
GRADE LEVEL EXPECTATION	CS.DCS.23.	Demonstrate an understanding of algorithms and their practical application.
GRADE LEVEL EXPECTATION	CS.DCS.27.	Demonstrate characteristics used in open ended problem-solving and programming (e.g., comfort with complexity, persistence, brainstorming, adaptability, patience, propensity to tinker, creativity, accepting challenge).
CONTENT STANDARD / COURSE	**2520.14.**	**West Virginia College- and Career-Readiness Standards for Technology and Computer Science**
CONTENT STANDARD / OBJECTIVE		**Discovering Computer Science**
OBJECTIVE / EXPECTATION		**Computers and Communications Devices**
GRADE LEVEL EXPECTATION	CS.DCS.36.	Describe ways in which computers use models of intelligent behavior (e.g., robot motion, speech and language understanding, and computer vision).

West Virginia College and Career Readiness Standards

Technology Education

Grade **8** - Adopted: **2019**

CONTENT STANDARD / COURSE	**2520.14.**	**West Virginia College- and Career-Readiness Standards for Technology and Computer Science**
CONTENT STANDARD / OBJECTIVE		**Computer Science 6-8**
OBJECTIVE / EXPECTATION		**Computer Systems and Computational Thinking**
GRADE LEVEL EXPECTATION	CS.6-8.1.	Analyze and devise problem-solving strategies cooperatively and collaboratively.

CONTENT STANDARD / COURSE	**2520.14.**	**West Virginia College- and Career-Readiness Standards for Technology and Computer Science**
CONTENT STANDARD / OBJECTIVE		**Computer Science 6-8**
OBJECTIVE / EXPECTATION		**Programming and Algorithms**
GRADE LEVEL EXPECTATION	CS.6-8.10.	Analyze the problem and use a tool (e.g., flow chart) to design an algorithm to solve complex problems.

CONTENT STANDARD / COURSE	**2520.14.**	**West Virginia College- and Career-Readiness Standards for Technology and Computer Science**
CONTENT STANDARD / OBJECTIVE		**Discovering Computer Science**
OBJECTIVE / EXPECTATION		**Computer Systems and Computational Thinking**
GRADE LEVEL EXPECTATION	CS.DCS.1.	Use the basic steps in algorithmic problem-solving to design solutions (e.g., problem statement and exploration, examination of sample instances, design, implementing a solution, testing, and evaluation).
GRADE LEVEL EXPECTATION	CS.DCS.3.	Define an algorithm as a sequence of instructions that can be processed by a computer.
GRADE LEVEL EXPECTATION	CS.DCS.5.	Act out searching and sorting algorithms.
GRADE LEVEL EXPECTATION	CS.DCS.9.	Interact with content-specific models and simulations (e.g., ecosystems, epidemics, molecular dynamics) to support learning and research.
GRADE LEVEL EXPECTATION	CS.DCS.10.	Evaluate what kinds of problems can be solved using modeling and simulation.
GRADE LEVEL EXPECTATION	CS.DCS.12.	Use abstraction to decompose a problem into sub problems.

CONTENT STANDARD / COURSE	**2520.14.**	**West Virginia College- and Career-Readiness Standards for Technology and Computer Science**
CONTENT STANDARD / OBJECTIVE		**Discovering Computer Science**
OBJECTIVE / EXPECTATION		**Programming and Algorithms**
GRADE LEVEL EXPECTATION	CS.DCS.20.	Select appropriate tools and technology resources to accomplish a variety of tasks and solve problems.
GRADE LEVEL EXPECTATION	CS.DCS.23.	Demonstrate an understanding of algorithms and their practical application.

GRADE LEVEL EXPECTATION	CS.DCS.27.	Demonstrate characteristics used in open ended problem-solving and programming (e.g., comfort with complexity, persistence, brainstorming, adaptability, patience, propensity to tinker, creativity, accepting challenge).

CONTENT STANDARD / COURSE	**2520.14.**	**West Virginia College- and Career-Readiness Standards for Technology and Computer Science**
CONTENT STANDARD / OBJECTIVE		**Discovering Computer Science**
OBJECTIVE / EXPECTATION		**Computers and Communications Devices**
GRADE LEVEL EXPECTATION	CS.DCS.36.	Describe ways in which computers use models of intelligent behavior (e.g., robot motion, speech and language understanding, and computer vision).

Wisconsin Academic Standards

Mathematics

Grade **7** - Adopted: **2021**

DOMAIN		**Standards for Mathematical Practice**
CONTENT STANDARD	Math Practice 1:	Make sense of problems and persevere in solving them.
CONTENT STANDARD	Math Practice 2:	Reason abstractly and quantitatively.
CONTENT STANDARD	Math Practice 3:	Construct viable arguments, and appreciate and critique the reasoning of others.
CONTENT STANDARD	Math Practice 4:	Model with mathematics.
CONTENT STANDARD	Math Practice 6:	Attend to precision.
CONTENT STANDARD	Math Practice 7:	Look for and make use of structure.
CONTENT STANDARD	Math Practice 8:	Look for and express regularity in repeated reasoning.

DOMAIN		**Grade 7 Content Standards**
CONTENT STANDARD	**M.7.NS.**	**The Number System (7.NS)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**M.7.NS.A.**	**Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.**

DESCRIPTOR / FOCUS AREA	**M.7.NS.A.1.**	**Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line.**
LEARNING CONTINUUM	M.7.NS.A.1.d.	Apply properties of operations as strategies to add and subtract rational numbers.

DOMAIN		**Grade 7 Content Standards**
CONTENT STANDARD	**M.7.NS.**	**The Number System (7.NS)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**M.7.NS.A.**	**Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.**
DESCRIPTOR / FOCUS AREA	**M.7.NS.A.2.**	**Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.**
LEARNING CONTINUUM	M.7.NS.A.2.a.	Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (-1)(-1) = 1 and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.
LEARNING CONTINUUM	M.7.NS.A.2.c.	Apply properties of operations as strategies to multiply and divide rational numbers.

DOMAIN		**Grade 7 Content Standards**
CONTENT STANDARD	**M.7.EE.**	**The Expressions and Equations (7.EE)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**M.7.EE.B.**	**Solve real-life and mathematical problems using numerical and algebraic expressions and equations. (M)**
DESCRIPTOR / FOCUS AREA	**M.7.EE.B.4.**	**Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.**
LEARNING CONTINUUM	M.7.EE.B.4.a.	Solve word problems leading to equations of the form px + q = r and p(x + q) = r, where p, q, and r are specific rational numbers. Flexibly and efficiently apply the properties of operations and equality to solve equations of these forms. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach.

Wisconsin Academic Standards

Mathematics

Grade **8** - Adopted: **2021**

DOMAIN		**Standards for Mathematical Practice**
CONTENT STANDARD	Math Practice 1:	Make sense of problems and persevere in solving them.
CONTENT STANDARD	Math Practice 2:	Reason abstractly and quantitatively.
CONTENT STANDARD	Math Practice 3:	Construct viable arguments, and appreciate and critique the reasoning of others.

CONTENT STANDARD	Math Practice 4:	Model with mathematics.
CONTENT STANDARD	Math Practice 6:	Attend to precision.
CONTENT STANDARD	Math Practice 7:	Look for and make use of structure.
CONTENT STANDARD	Math Practice 8:	Look for and express regularity in repeated reasoning.

DOMAIN		Grade 8 Content Standards
CONTENT STANDARD	**M.8.EE.**	**The Expressions and Equations (8.EE)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**M.8.EE.C.**	**Analyze and solve linear equations and pairs of simultaneous linear equations. (M)**
DESCRIPTOR / FOCUS AREA	**M.8.EE.C.7.**	**Solve linear equations in one variable.**
LEARNING CONTINUUM	M.8.EE.C.7.a.	Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into equivalent forms.
LEARNING CONTINUUM	M.8.EE.C.7.b.	Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.

Wisconsin Academic Standards

Science

Grade **7** - Adopted: **2017**

DOMAIN	WI.SCI.	Science
CONTENT STANDARD	**SCI.SEP.**	**Science and Engineering Practices (SEP)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**SCI.SEP 6.**	**Students construct explanations and design solutions, in conjunction with using crosscutting concepts and disciplinary core ideas, to make sense of phenomena and solve problems.**
DESCRIPTOR / FOCUS AREA	**SCI.SEP 6.A.**	**Construct an Explanation – Students construct explanations supported by multiple sources of evidence consistent with scientific ideas, principles, and theories. This includes the following:**
LEARNING CONTINUUM	SCI.SEP 6.A.m.4.	Apply scientific ideas, principles, and evidence to construct, revise, or use an explanation for real world phenomena, examples, or events.

DOMAIN	WI.SCI.	Science
CONTENT STANDARD	**SCI.SEP.**	**Science and Engineering Practices (SEP)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**SCI.SEP 8.**	**Students will obtain, evaluate and communicate information, in conjunction with using crosscutting concepts and disciplinary core ideas, to make sense of phenomena and solve problems.**

DESCRIPTOR / FOCUS AREA	**SCI.SEP 8.A.**	**Obtain, Evaluate, and Communicate Information – Students evaluate the merit and validity of ideas and methods. This includes the following:**
LEARNING CONTINUUM	SCI.SEP 8.A.m.1.	Critically read scientific texts adapted for classroom use to determine the central ideas, to obtain scientific and technical information, and to describe patterns in and evidence about the natural and designed world(s).

DOMAIN	**WI.SCI.**	**Science**
CONTENT STANDARD	**SCI.ESS.**	**Disciplinary Core Idea: Earth and Space Sciences (ESS)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**SCI.ESS 3.**	**Students use science and engineering practices, crosscutting concepts, and an understanding of the Earth and human activity to make sense of phenomena and solve problems.**
DESCRIPTOR / FOCUS AREA	**SCI.ESS 3.C.**	**Human Impacts on Earth Systems**
LEARNING CONTINUUM	SCI.ESS3 .C.m.	Human activities have altered the hydrosphere, atmosphere, and lithosphere which in turn has altered the biosphere. Changes to the biosphere can have different impacts for different living things. Activities and technologies can be engineered to reduce people's impacts on Earth.

DOMAIN	**WI.SCI.**	**Science**
CONTENT STANDARD	**SCI.ETS .**	**Disciplinary Core Idea: Engineering, Technology, and the Application of Science (ETS)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**SCI.ETS 2.**	**Students use science and engineering practices, crosscutting concepts, and an understanding of the links among Engineering, Technology, Science, and Society to make sense of phenomena and solve problems.**
DESCRIPTOR / FOCUS AREA	**SCI.ETS 2.B.**	**Influence of Engineering, Technology, and Science on Society and the Natural World**
LEARNING CONTINUUM	SCI.ETS2 .B.m.1.	All human activity draws on natural resources and has both short and long-term consequences, positive as well as negative, for the health of people and the natural environment.
LEARNING CONTINUUM	SCI.ETS2 .B.m.2.	The uses of technologies are driven by people's needs, desires, and values; by the findings of scientific research; and by differences in such factors as climate, natural resources, and economic conditions.
LEARNING CONTINUUM	SCI.ETS2 .B.m.3.	Technology use varies over time and from region to region.

DOMAIN	**WI.SCI.**	**Science**
CONTENT STANDARD	**SCI.ETS .**	**Disciplinary Core Idea: Engineering, Technology, and the Application of Science (ETS)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**SCI.ETS 3.**	**Students use science and engineering practices, crosscutting concepts, and an understanding of the nature of science and engineering to make sense of phenomena and solve problems.**
DESCRIPTOR / FOCUS AREA	**SCI.ETS 3.A.**	**Science and Engineering Are Human Endeavors**
LEARNING CONTINUUM	SCI.ETS3 .A.m.3.	Science and engineering are influenced by what is valued in society.

DOMAIN	**WI.SCI.**	**Science**
CONTENT STANDARD	**SCI.ETS .**	**Disciplinary Core Idea: Engineering, Technology, and the Application of Science (ETS)**

PERFORMANCE STANDARD / LEARNING PRIORITY	**SCI.ETS3.**	**Students use science and engineering practices, crosscutting concepts, and an understanding of the nature of science and engineering to make sense of phenomena and solve problems.**
DESCRIPTOR / FOCUS AREA	**SCI.ETS3.B.**	**Science and Engineering Are Unique Ways of Thinking with Different Purposes**
LEARNING CONTINUUM	SCI.ETS3.B.m.2.	Engineering seeks solutions to human problems, including issues that arise due to human interaction with the environment. It uses some of the same practices as science and often applies scientific principles to solutions.
LEARNING CONTINUUM	SCI.ETS3.B.m.3.	Science and engineering have direct impacts on the quality of life for all people. Therefore, scientists and engineers need to pursue their work in an ethical manner that requires honesty, fairness and dedication to public health, safety and welfare.

Wisconsin Academic Standards

Science

Grade **8** - Adopted: **2017**

DOMAIN	**WI.SCI.**	**Science**
CONTENT STANDARD	**SCI.SEP.**	**Science and Engineering Practices (SEP)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**SCI.SEP6.**	**Students construct explanations and design solutions, in conjunction with using crosscutting concepts and disciplinary core ideas, to make sense of phenomena and solve problems.**
DESCRIPTOR / FOCUS AREA	**SCI.SEP6.A.**	**Construct an Explanation – Students construct explanations supported by multiple sources of evidence consistent with scientific ideas, principles, and theories. This includes the following:**
LEARNING CONTINUUM	SCI.SEP6.A.m.4.	Apply scientific ideas, principles, and evidence to construct, revise, or use an explanation for real world phenomena, examples, or events.

DOMAIN	**WI.SCI.**	**Science**
CONTENT STANDARD	**SCI.SEP.**	**Science and Engineering Practices (SEP)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**SCI.SEP8.**	**Students will obtain, evaluate and communicate information, in conjunction with using crosscutting concepts and disciplinary core ideas, to make sense of phenomena and solve problems.**
DESCRIPTOR / FOCUS AREA	**SCI.SEP8.A.**	**Obtain, Evaluate, and Communicate Information – Students evaluate the merit and validity of ideas and methods. This includes the following:**
LEARNING CONTINUUM	SCI.SEP8.A.m.1.	Critically read scientific texts adapted for classroom use to determine the central ideas, to obtain scientific and technical information, and to describe patterns in and evidence about the natural and designed world(s).

DOMAIN	**WI.SCI.**	**Science**
CONTENT STANDARD	**SCI.ESS.**	**Disciplinary Core Idea: Earth and Space Sciences (ESS)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**SCI.ESS3.**	**Students use science and engineering practices, crosscutting concepts, and an understanding of the Earth and human activity to make sense of phenomena and solve problems.**
DESCRIPTOR / FOCUS AREA	**SCI.ESS3.C.**	**Human Impacts on Earth Systems**
LEARNING CONTINUUM	SCI.ESS3.C.m.	Human activities have altered the hydrosphere, atmosphere, and lithosphere which in turn has altered the biosphere. Changes to the biosphere can have different impacts for different living things. Activities and technologies can be engineered to reduce people's impacts on Earth.

DOMAIN	WI.SCI.	Science
CONTENT STANDARD	**SCI.ETS.**	**Disciplinary Core Idea: Engineering, Technology, and the Application of Science (ETS)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**SCI.ETS2.**	**Students use science and engineering practices, crosscutting concepts, and an understanding of the links among Engineering, Technology, Science, and Society to make sense of phenomena and solve problems.**
DESCRIPTOR / FOCUS AREA	**SCI.ETS2.B.**	**Influence of Engineering, Technology, and Science on Society and the Natural World**
LEARNING CONTINUUM	SCI.ETS2.B.m.1.	All human activity draws on natural resources and has both short and long-term consequences, positive as well as negative, for the health of people and the natural environment.
LEARNING CONTINUUM	SCI.ETS2.B.m.2.	The uses of technologies are driven by people's needs, desires, and values; by the findings of scientific research; and by differences in such factors as climate, natural resources, and economic conditions.
LEARNING CONTINUUM	SCI.ETS2.B.m.3.	Technology use varies over time and from region to region.

DOMAIN	WI.SCI.	Science
CONTENT STANDARD	**SCI.ETS.**	**Disciplinary Core Idea: Engineering, Technology, and the Application of Science (ETS)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**SCI.ETS3.**	**Students use science and engineering practices, crosscutting concepts, and an understanding of the nature of science and engineering to make sense of phenomena and solve problems.**
DESCRIPTOR / FOCUS AREA	**SCI.ETS3.A.**	**Science and Engineering Are Human Endeavors**
LEARNING CONTINUUM	SCI.ETS3.A.m.3.	Science and engineering are influenced by what is valued in society.

DOMAIN	WI.SCI.	Science
CONTENT STANDARD	**SCI.ETS.**	**Disciplinary Core Idea: Engineering, Technology, and the Application of Science (ETS)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**SCI.ETS3.**	**Students use science and engineering practices, crosscutting concepts, and an understanding of the nature of science and engineering to make sense of phenomena and solve problems.**
DESCRIPTOR / FOCUS AREA	**SCI.ETS3.B.**	**Science and Engineering Are Unique Ways of Thinking with Different Purposes**
LEARNING CONTINUUM	SCI.ETS3.B.m.2.	Engineering seeks solutions to human problems, including issues that arise due to human interaction with the environment. It uses some of the same practices as science and often applies scientific principles to solutions.
LEARNING CONTINUUM	SCI.ETS3.B.m.3.	Science and engineering have direct impacts on the quality of life for all people. Therefore, scientists and engineers need to pursue their work in an ethical manner that requires honesty, fairness and dedication to public health, safety and welfare.

Wisconsin Academic Standards

Technology Education

Grade **7** - Adopted: **2017**

DOMAIN	WI.CS.	Computer Science

CONTENT STANDARD	**CS.AP.**	**Content Area: Algorithms and Programming (AP)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**CS.AP1.**	**Students will recognize and define computational problems using algorithms and programming.**
DESCRIPTOR / FOCUS AREA	**CS.AP1.a.**	**Develop algorithms.**
LEARNING CONTINUUM	CS.AP1.a.6.m.	Decompose a computational problem into parts and create solutions for one or more parts.

DOMAIN	**WI.CS.**	**Computer Science**
CONTENT STANDARD	**CS.AP.**	**Content Area: Algorithms and Programming (AP)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**CS.AP2.**	**Students will create computational artifacts using algorithms and programming.**
DESCRIPTOR / FOCUS AREA	**CS.AP2.a.**	**Develop and implement an artifact.**
LEARNING CONTINUUM	CS.AP2.a.6.m.	Develop programs, both independently and collaboratively, which include sequencing with nested loops and multiple branches [Clarification: At this level, students may use block-based and/or text-based languages].
LEARNING CONTINUUM	CS.AP2.a.8.m.	Use an iterative design process (e.g., define the problem, generate ideas, build, test, and improve solutions) to solve computational problems, both independently and collaboratively.

DOMAIN	**WI.CS.**	**Computer Science**
CONTENT STANDARD	**CS.AP.**	**Content Area: Algorithms and Programming (AP)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**CS.AP3.**	**Students will communicate about computing ideas.**
DESCRIPTOR / FOCUS AREA	**CS.AP3.b.**	**Communicate about technical and social issues.**
LEARNING CONTINUUM	CS.AP3.b.5.m.	Discuss how algorithms have impacted society – both the beneficial and harmful effects.

DOMAIN	**WI.CS.**	**Computer Science**
CONTENT STANDARD	**CS.AP.**	**Content Area: Algorithms and Programming (AP)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**CS.AP3.**	**Students will communicate about computing ideas.**
DESCRIPTOR / FOCUS AREA	**CS.AP3.c.**	**Document code.**
LEARNING CONTINUUM	CS.AP3.c.1.m.	Interpret the flow of execution of algorithms and predict their outcomes. [Clarification: Algorithms can be expressed using natural language, flow and control diagrams, comments within code, and pseudocode.]

DOMAIN	**WI.CS.**	**Computer Science**

CONTENT STANDARD	**CS.DA.**	**Content Area: Data and Analysis (DA)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**CS.DA1.**	**Students will create computational artifacts using data and analysis.**
DESCRIPTOR / FOCUS AREA	**CS.DA1.a.**	**Represent and manipulate data.**
LEARNING CONTINUUM	CS.DA1.a.3.m.	Represent data using different encoding schemes (e.g., binary, Unicode, Morse code, shorthand, student-created codes).

DOMAIN	**WI.ITL.**	**Information and Technology Literacy**
CONTENT STANDARD	**ITL.KC.**	**Content Area: Knowledge Constructor (KC)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**ITL.KC1.**	**Students critically curate a variety of digital tools and diverse resources.**
DESCRIPTOR / FOCUS AREA	**ITL.KC1.a.**	**Plan and employ effective research strategies.**
LEARNING CONTINUUM	ITL.KC1.a.9.m.	Demonstrate and practice using an inquiry-based process that involves asking questions, investigating the answers, and developing new understandings for personal or academic learning activities.

DOMAIN	**WI.ITL.**	**Information and Technology Literacy**
CONTENT STANDARD	**ITL.KC.**	**Content Area: Knowledge Constructor (KC)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**ITL.KC2.**	**Students produce creative artifacts and make meaningful learning experiences from curated knowledge for themselves and others.**
DESCRIPTOR / FOCUS AREA	**ITL.KC2.b.**	**Build knowledge by actively exploring real-world issues and problems.**
LEARNING CONTINUUM	ITL.KC2.b.5.m.	Demonstrate initiative and engagement by posing questions and investigating the answers beyond the collection of superficial facts.
LEARNING CONTINUUM	ITL.KC2.b.6.m.	Explore real-world issues and problems and actively pursue an understanding of them. Begin to develop answers and solutions for problem solving.

DOMAIN	**WI.ITL.**	**Information and Technology Literacy**
CONTENT STANDARD	**ITL.ID.**	**Content Area: Innovative Designer (ID)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**ITL.ID1.**	**Students use a variety of digital tools and resources to identify and solve authentic problems using design thinking.**
DESCRIPTOR / FOCUS AREA	**ITL.ID1.b.**	**Exhibit tolerance for ambiguity, perseverance and the capacity to work with authentic, open-ended problems.**
LEARNING CONTINUUM	ITL.ID1.b.3.m.	Demonstrate an ability to persevere through authentic, open-ended problems by applying abstract concepts with greater ambiguity.

DOMAIN	**WI.ITL.**	**Information and Technology Literacy**

CONTENT STANDARD	**ITL.ID.**	**Content Area: Innovative Designer (ID)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**ITL.ID2.**	**Students use a variety of technologies within a design process to create new, useful, and imaginative solutions.**
DESCRIPTOR / FOCUS AREA	**ITL.ID2.a.**	**Know and use a deliberate design process for generating ideas, testing theories, and creating innovative artifacts and solutions.**
LEARNING CONTINUUM	ITL.ID2.a.3.m.	Use a deliberate design process to generate ideas, create innovative products, and test theories as possible solutions.

DOMAIN	**WI.ITL.**	**Information and Technology Literacy**
CONTENT STANDARD	**ITL.CT.**	**Content Area: Computational Thinker (CT)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**ITL.CT1.**	**Students develop and employ strategies for understanding and solving problems.**
DESCRIPTOR / FOCUS AREA	**ITL.CT1.a.**	**Identify, define, and interpret problems where digital tools can assist in finding solutions.**
LEARNING CONTINUUM	ITL.CT1.a.3.m.	Define and solve an authentic problem using data analysis, modeling, and algorithmic thinking.

DOMAIN	**WI.ITL.**	**Information and Technology Literacy**
CONTENT STANDARD	**ITL.CT.**	**Content Area: Computational Thinker (CT)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**ITL.CT1.**	**Students develop and employ strategies for understanding and solving problems.**
DESCRIPTOR / FOCUS AREA	**ITL.CT1.c.**	**Break problems into smaller parts, identify key information, and develop descriptive models.**
LEARNING CONTINUUM	ITL.CT1.c.3.m.	Separate authentic problems into component parts, identify patterns and differences and develop descriptive models to facilitate problem solving.

Wisconsin Academic Standards

Technology Education

Grade **8** - Adopted: **2017**

DOMAIN	**WI.CS.**	**Computer Science**
CONTENT STANDARD	**CS.AP.**	**Content Area: Algorithms and Programming (AP)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**CS.AP1.**	**Students will recognize and define computational problems using algorithms and programming.**
DESCRIPTOR / FOCUS AREA	**CS.AP1.a.**	**Develop algorithms.**
LEARNING CONTINUUM	CS.AP1.a.6.m.	Decompose a computational problem into parts and create solutions for one or more parts.

DOMAIN	**WI.CS.**	**Computer Science**

CONTENT STANDARD	**CS.AP.**	**Content Area: Algorithms and Programming (AP)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**CS.AP2.**	**Students will create computational artifacts using algorithms and programming.**
DESCRIPTOR / FOCUS AREA	**CS.AP2.a.**	**Develop and implement an artifact.**
LEARNING CONTINUUM	CS.AP2.a.6.m.	Develop programs, both independently and collaboratively, which include sequencing with nested loops and multiple branches [Clarification: At this level, students may use block-based and/or text-based languages].
LEARNING CONTINUUM	CS.AP2.a.8.m.	Use an iterative design process (e.g., define the problem, generate ideas, build, test, and improve solutions) to solve computational problems, both independently and collaboratively.
DOMAIN	**WI.CS.**	**Computer Science**
CONTENT STANDARD	**CS.AP.**	**Content Area: Algorithms and Programming (AP)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**CS.AP3.**	**Students will communicate about computing ideas.**
DESCRIPTOR / FOCUS AREA	**CS.AP3.b.**	**Communicate about technical and social issues.**
LEARNING CONTINUUM	CS.AP3.b.5.m.	Discuss how algorithms have impacted society – both the beneficial and harmful effects.
DOMAIN	**WI.CS.**	**Computer Science**
CONTENT STANDARD	**CS.AP.**	**Content Area: Algorithms and Programming (AP)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**CS.AP3.**	**Students will communicate about computing ideas.**
DESCRIPTOR / FOCUS AREA	**CS.AP3.c.**	**Document code.**
LEARNING CONTINUUM	CS.AP3.c.1.m.	Interpret the flow of execution of algorithms and predict their outcomes. [Clarification: Algorithms can be expressed using natural language, flow and control diagrams, comments within code, and pseudocode.]
DOMAIN	**WI.CS.**	**Computer Science**
CONTENT STANDARD	**CS.DA.**	**Content Area: Data and Analysis (DA)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**CS.DA1.**	**Students will create computational artifacts using data and analysis.**
DESCRIPTOR / FOCUS AREA	**CS.DA1.a.**	**Represent and manipulate data.**
LEARNING CONTINUUM	CS.DA1.a.3.m.	Represent data using different encoding schemes (e.g., binary, Unicode, Morse code, shorthand, student-created codes).
DOMAIN	**WI.ITL.**	**Information and Technology Literacy**

CONTENT STANDARD	**ITL.KC.**	**Content Area: Knowledge Constructor (KC)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**ITL.KC1.**	**Students critically curate a variety of digital tools and diverse resources.**
DESCRIPTOR / FOCUS AREA	**ITL.KC1.a.**	**Plan and employ effective research strategies.**
LEARNING CONTINUUM	ITL.KC1.a.9.m.	Demonstrate and practice using an inquiry-based process that involves asking questions, investigating the answers, and developing new understandings for personal or academic learning activities.

DOMAIN	**WI.ITL.**	**Information and Technology Literacy**
CONTENT STANDARD	**ITL.KC.**	**Content Area: Knowledge Constructor (KC)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**ITL.KC2.**	**Students produce creative artifacts and make meaningful learning experiences from curated knowledge for themselves and others.**
DESCRIPTOR / FOCUS AREA	**ITL.KC2.b.**	**Build knowledge by actively exploring real-world issues and problems.**
LEARNING CONTINUUM	ITL.KC2.b.5.m.	Demonstrate initiative and engagement by posing questions and investigating the answers beyond the collection of superficial facts.
LEARNING CONTINUUM	ITL.KC2.b.6.m.	Explore real-world issues and problems and actively pursue an understanding of them. Begin to develop answers and solutions for problem solving.

DOMAIN	**WI.ITL.**	**Information and Technology Literacy**
CONTENT STANDARD	**ITL.ID.**	**Content Area: Innovative Designer (ID)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**ITL.ID1.**	**Students use a variety of digital tools and resources to identify and solve authentic problems using design thinking.**
DESCRIPTOR / FOCUS AREA	**ITL.ID1.b.**	**Exhibit tolerance for ambiguity, perseverance and the capacity to work with authentic, open-ended problems.**
LEARNING CONTINUUM	ITL.ID1.b.3.m.	Demonstrate an ability to persevere through authentic, open-ended problems by applying abstract concepts with greater ambiguity.

DOMAIN	**WI.ITL.**	**Information and Technology Literacy**
CONTENT STANDARD	**ITL.ID.**	**Content Area: Innovative Designer (ID)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**ITL.ID2.**	**Students use a variety of technologies within a design process to create new, useful, and imaginative solutions.**
DESCRIPTOR / FOCUS AREA	**ITL.ID2.a.**	**Know and use a deliberate design process for generating ideas, testing theories, and creating innovative artifacts and solutions.**
LEARNING CONTINUUM	ITL.ID2.a.3.m.	Use a deliberate design process to generate ideas, create innovative products, and test theories as possible solutions.

DOMAIN	**WI.ITL.**	**Information and Technology Literacy**

CONTENT STANDARD	**ITL.CT.**	**Content Area: Computational Thinker (CT)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**ITL.CT1.**	**Students develop and employ strategies for understanding and solving problems.**
DESCRIPTOR / FOCUS AREA	**ITL.CT1.a.**	**Identify, define, and interpret problems where digital tools can assist in finding solutions.**
LEARNING CONTINUUM	ITL.CT1.a.3.m.	Define and solve an authentic problem using data analysis, modeling, and algorithmic thinking.

DOMAIN	**WI.ITL.**	**Information and Technology Literacy**
CONTENT STANDARD	**ITL.CT.**	**Content Area: Computational Thinker (CT)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**ITL.CT1.**	**Students develop and employ strategies for understanding and solving problems.**
DESCRIPTOR / FOCUS AREA	**ITL.CT1.c.**	**Break problems into smaller parts, identify key information, and develop descriptive models.**
LEARNING CONTINUUM	ITL.CT1.c.3.m.	Separate authentic problems into component parts, identify patterns and differences and develop descriptive models to facilitate problem solving.

Wyoming Content and Performance Standards

Mathematics

Grade **7** - Adopted: **2018**

CONTENT STANDARD		**Standards for Mathematical Practices**
BENCHMARK	1	Make sense of problems and persevere in solving them.
BENCHMARK	2	Reason abstractly and quantitatively.
BENCHMARK	3	Construct viable arguments and critique the reasoning of others.
BENCHMARK	4	Model with mathematics.
BENCHMARK	6	Attend to precision.
BENCHMARK	7	Look for and make use of structure.
BENCHMARK	8	Look for and express regularity in repeated reasoning.

CONTENT STANDARD		**The Number System**
BENCHMARK	**7.NS.B.**	**Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.**
GRADE LEVEL EXAMPLE	**7.NS.B.1.**	**Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers.**

EXPECTATION	7.NS.B.1E.	Apply properties of addition as strategies to add and subtract rational numbers.

CONTENT STANDARD		**Expressions and Equations**
BENCHMARK	**7.EE.D.**	**Solve real-life and mathematical problems using numerical and algebraic expressions and equations.**
GRADE LEVEL EXAMPLE	**7.EE.D.4.**	**Apply the concepts of linear equations and inequalities in one variable to real-world and mathematical situations.**
EXPECTATION	7.EE.D.4A.	Write and fluently solve linear equations of the form ax +b = c and a(x + b) = c where a, b, and c are rational numbers.

Wyoming Content and Performance Standards

Mathematics

Grade **8** - Adopted: **2018**

CONTENT STANDARD		**Standards for Mathematical Practices**
BENCHMARK	1	Make sense of problems and persevere in solving them.
BENCHMARK	2	Reason abstractly and quantitatively.
BENCHMARK	3	Construct viable arguments and critique the reasoning of others.
BENCHMARK	4	Model with mathematics.
BENCHMARK	6	Attend to precision.
BENCHMARK	7	Look for and make use of structure.
BENCHMARK	8	Look for and express regularity in repeated reasoning.

CONTENT STANDARD		**Expressions and Equations**
BENCHMARK	**8.EE.D.**	**Analyze and solve linear equations and pairs of simultaneous linear equations.**
GRADE LEVEL EXAMPLE	**8.EE.D.7.**	**Extend concepts of linear equations and inequalities in one variable to more complex multi-step equations and inequalities in real-world and mathematical situations.**
EXPECTATION	8.EE.D.7B.	Recognize the three types of solutions to linear equations: one solution, infinitely many solutions, or no solutions.
EXPECTATION	8.EE.D.7D.	Justify why linear equations have a specific type of solution.

Wyoming Content and Performance Standards

Science

Grade **7** - Adopted: **2016**

CONTENT STANDARD		**LIFE SCIENCE**
BENCHMARK	**MS-LS2.**	**Ecosystems: Interactions, Energy, and Dynamics**

GRADE LEVEL EXAMPLE	MS-LS2-5.	Evaluate competing design solutions for maintaining biodiversity and ecosystem services.
CONTENT STANDARD		**EARTH AND SPACE SCIENCE**
BENCHMARK	**MS-ESS3.**	**Earth and Human Activity**
GRADE LEVEL EXAMPLE	MS-ESS3-3.	Apply scientific principles to design a method for monitoring, evaluating, and managing a human impact on the environment.
GRADE LEVEL EXAMPLE	MS-ESS3-4.	Construct an argument supported by evidence for how changes in human population and per-capita consumption of natural resources impact Earth's systems.
CONTENT STANDARD		**ENGINEERING DESIGN**
BENCHMARK	**MS-ETS2.**	**Engineering, Technology, Science and Society**
GRADE LEVEL EXAMPLE	MS-ETS2-2.	Develop a model defining and prioritizing the impacts of human activity on a particular aspect of the environment, identifying positive and negative consequences of the activity, both short and long-term, and investigate and explain how the ethics and integrity of scientists and engineers and respect for individual property rights might constrain future development.

Grade **7** - Adopted: **2012**

CONTENT STANDARD	**RST.6-8.**	**Reading Standards for Literacy in Science and Technical Subjects**
BENCHMARK		**Key Ideas and Details**
GRADE LEVEL EXAMPLE	RST.6-8.2.	Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.
CONTENT STANDARD	**RST.6-8.**	**Reading Standards for Literacy in Science and Technical Subjects**
BENCHMARK		**Integration of Knowledge and Ideas**
GRADE LEVEL EXAMPLE	RST.6-8.9.	Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.
CONTENT STANDARD	**RST.6-8.**	**Reading Standards for Literacy in Science and Technical Subjects**
BENCHMARK		**Range of Reading and Level of Text Complexity**
GRADE LEVEL EXAMPLE	RST.6-8.10.	By the end of grade 8, read and comprehend science/technical texts in the grades 6-8 text complexity band independently and proficiently.

Wyoming Content and Performance Standards

Science

Grade **8** - Adopted: **2016**

CONTENT STANDARD		**LIFE SCIENCE**
BENCHMARK	**MS-LS2.**	**Ecosystems: Interactions, Energy, and Dynamics**

GRADE LEVEL EXAMPLE	MS-LS2-5.	Evaluate competing design solutions for maintaining biodiversity and ecosystem services.
CONTENT STANDARD		**EARTH AND SPACE SCIENCE**
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GRADE LEVEL EXAMPLE	MS-ESS3-3.	Apply scientific principles to design a method for monitoring, evaluating, and managing a human impact on the environment.
GRADE LEVEL EXAMPLE	MS-ESS3-4.	Construct an argument supported by evidence for how changes in human population and per-capita consumption of natural resources impact Earth's systems.
CONTENT STANDARD		**ENGINEERING DESIGN**
BENCHMARK	**MS-ETS2.**	**Engineering, Technology, Science and Society**
GRADE LEVEL EXAMPLE	MS-ETS2-2.	Develop a model defining and prioritizing the impacts of human activity on a particular aspect of the environment, identifying positive and negative consequences of the activity, both short and long-term, and investigate and explain how the ethics and integrity of scientists and engineers and respect for individual property rights might constrain future development.

Grade **8** - Adopted: **2012**

CONTENT STANDARD	**RST.6-8.**	**Reading Standards for Literacy in Science and Technical Subjects**
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BENCHMARK		**Range of Reading and Level of Text Complexity**
GRADE LEVEL EXAMPLE	RST.6-8.10.	By the end of grade 8, read and comprehend science/technical texts in the grades 6-8 text complexity band independently and proficiently.

Wyoming Content and Performance Standards

Technology Education

Grade **7** - Adopted: **2020**

CONTENT STANDARD		**Wyoming Computer Science Content Standards**
BENCHMARK		**Computer Science Practices**

GRADE LEVEL EXAMPLE	**1**	**Fostering an Inclusive Computing Culture**
EXPECTATION	1.1.	"Include the unique perspectives of others and reflect on one's own perspectives when designing and developing computational products."
EXPECTATION	1.2.	Address the needs of diverse end users during the design process to produce artifacts with broad accessibility and usability.
EXPECTATION	1.3.	"Employ self- and peer-advocacy to address bias in interactions, product design, and development methods."
CONTENT STANDARD		**Wyoming Computer Science Content Standards**
BENCHMARK		**Computer Science Practices**
GRADE LEVEL EXAMPLE	**3**	**Recognizing and Defining Computational Problems**
EXPECTATION	3.2.	Decompose complex real-world problems into manageable subproblems that could integrate existing solutions or procedures.
EXPECTATION	3.3.	Evaluate whether it is appropriate and feasible to solve a problem computationally.
CONTENT STANDARD		**Wyoming Computer Science Content Standards**
BENCHMARK		**Computer Science Practices**
GRADE LEVEL EXAMPLE	**4**	**Developing and Using Abstractions**
EXPECTATION	4.2.	Evaluate existing technological functionalities and incorporate them into new designs.
EXPECTATION	4.3.	Create modules and develop points of interaction that can apply to multiple situations and reduce complexity.
CONTENT STANDARD		**Wyoming Computer Science Content Standards**
BENCHMARK		**Computer Science Practices**
GRADE LEVEL EXAMPLE	**5**	**Creating Computational Artifacts**
EXPECTATION	5.1.	Plan the development of a computational artifact using an iterative process that includes reflection on and modification of the plan, taking into account key features, time and resource constraints, and user expectations.
EXPECTATION	5.2.	Create a computational artifact for practical intent, personal expression, or to address a societal issue.
CONTENT STANDARD		**Wyoming Computer Science Content Standards**
BENCHMARK		**Computer Science Practices**
GRADE LEVEL EXAMPLE	**6**	**Testing and Refining Computational Artifact**
EXPECTATION	6.1.	Systematically test computational artifacts by considering all scenarios and using test cases.

CONTENT STANDARD		Wyoming Computer Science Content Standards
BENCHMARK		MS Computer Science Standards
GRADE LEVEL EXAMPLE	CS.HS.	Hardware & Software
EXPECTATION	8.CS.HS.01.	Design and refine a project that combines hardware and software components to collect and exchange data.

CONTENT STANDARD		Wyoming Computer Science Content Standards
BENCHMARK		MS Computer Science Standards
GRADE LEVEL EXAMPLE	AP.A.	Algorithms
EXPECTATION	8.AP.A.01.	Create flowcharts and pseudocode to design algorithms to solve complex problems.

CONTENT STANDARD		Wyoming Computer Science Content Standards
BENCHMARK		MS Computer Science Standards
GRADE LEVEL EXAMPLE	IC.SI.	Social Interactions
EXPECTATION	8.IC.SI.01.	Using grade appropriate content and complexity, collaborate using tools to connect with peers when creating a computational artifact.

Wyoming Content and Performance Standards

Technology Education

Grade **8** - Adopted: **2020**

CONTENT STANDARD		Wyoming Computer Science Content Standards
BENCHMARK		Computer Science Practices
GRADE LEVEL EXAMPLE	1	Fostering an Inclusive Computing Culture
EXPECTATION	1.1.	"Include the unique perspectives of others and reflect on one's own perspectives when designing and developing computational products."
EXPECTATION	1.2.	Address the needs of diverse end users during the design process to produce artifacts with broad accessibility and usability.
EXPECTATION	1.3.	"Employ self- and peer-advocacy to address bias in interactions, product design, and development methods."

CONTENT STANDARD		Wyoming Computer Science Content Standards
BENCHMARK		Computer Science Practices
GRADE LEVEL EXAMPLE	3	Recognizing and Defining Computational Problems

EXPECTATION	3.2.	Decompose complex real-world problems into manageable subproblems that could integrate existing solutions or procedures.
EXPECTATION	3.3.	Evaluate whether it is appropriate and feasible to solve a problem computationally.
CONTENT STANDARD		**Wyoming Computer Science Content Standards**
BENCHMARK		**Computer Science Practices**
GRADE LEVEL EXAMPLE	**4**	**Developing and Using Abstractions**
EXPECTATION	4.2.	Evaluate existing technological functionalities and incorporate them into new designs.
EXPECTATION	4.3.	Create modules and develop points of interaction that can apply to multiple situations and reduce complexity.
CONTENT STANDARD		**Wyoming Computer Science Content Standards**
BENCHMARK		**Computer Science Practices**
GRADE LEVEL EXAMPLE	**5**	**Creating Computational Artifacts**
EXPECTATION	5.1.	Plan the development of a computational artifact using an iterative process that includes reflection on and modification of the plan, taking into account key features, time and resource constraints, and user expectations.
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BENCHMARK		**Computer Science Practices**
GRADE LEVEL EXAMPLE	**6**	**Testing and Refining Computational Artifact**
EXPECTATION	6.1.	Systematically test computational artifacts by considering all scenarios and using test cases.
CONTENT STANDARD		**Wyoming Computer Science Content Standards**
BENCHMARK		**MS Computer Science Standards**
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BENCHMARK		**MS Computer Science Standards**
GRADE LEVEL EXAMPLE	**IC.SI.**	**Social Interactions**
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