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: 5, 6, Key Stage 2

Forward Education

Smart Farming with Automated Watering

Pennsylvania Core and Academic Standards

Mathematics

Grade **5** - 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.5.	Use appropriate tools strategically.
STANDARD AREA / STATEMENT	CC.MP.7.	Look for and make use of structure.

Pennsylvania Core and Academic Standards

Mathematics

Grade **6** - 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.5.	Use appropriate tools strategically.
STANDARD AREA / STATEMENT	CC.MP.7.	Look for and make use of structure.
SUBJECT / STANDARD AREA	**PA.CC.2.2.6.**	**Algebraic Concepts**
STANDARD AREA / STATEMENT	**CC.2.2.6.B.**	**Expressions and Equations**
STANDARD	CC.2.2.6.B.2.	Understand the process of solving a one-variable equation or inequality and apply it to real-world and mathematical problems.

Pennsylvania Core and Academic Standards

Science

Grade **5** - Adopted: **2010**

SUBJECT / STANDARD AREA	**PA.SI.**	**Science as Inquiry**
STANDARD AREA / STATEMENT	SI.5.	Use appropriate tools and technologies to gather, analyze, and interpret data and understand that it enhances accuracy and allows scientists to analyze and quantify results of investigations.
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.
STANDARD AREA / STATEMENT	SI.9.	Understand that scientific investigations may result in new ideas for study, new methods, or procedures for an investigation or new technologies to improve data collection.
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	3.4.5.A1.	Explain how people use tools and techniques to help them do things.

DESCRIPTOR / STANDARD	3.4.5.A2.	Understand that a subsystem is a system that operates as part of a larger system.
DESCRIPTOR / STANDARD	3.4.5.A3.	Describe how technologies are often combined.

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	3.4.5.B1.	Explain how the use of technology can have unintended consequences.

SUBJECT / STANDARD AREA	**PA.3.**	**Science and Technology and Engineering Education**
STANDARD AREA / STATEMENT	**3.4.**	**Technology and Engineering Education**
STANDARD	**3.4.C.**	**Technology and Engineering Design**
DESCRIPTOR / STANDARD	3.4.5.C1.	Explain how the design process is a purposeful method of planning practical solutions to problems.
DESCRIPTOR / STANDARD	3.4.5.C2.	Describe how design, as a dynamic process of steps, can be performed in different sequences and repeated.
DESCRIPTOR / STANDARD	3.4.5.C3.	Identify how invention and innovation are creative ways to turn ideas into real things.

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	3.4.5.D1.	Identify ways to improve a design solution.
DESCRIPTOR / STANDARD	3.4.5.D3.	Determine if the human use of a product or system creates positive or negative results.

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	3.4.5.E3.	Explain how tools, machines, products, and systems use energy in order to do work.

SUBJECT / STANDARD AREA	**PA.4.**	**Environment and Ecology**
STANDARD AREA / STATEMENT	**4.4.**	**Agriculture and Society**
STANDARD	4.4.5.C.	Investigate the factors influencing plant and animal growth. (e.g., soil, water, nutrients, and light)

Pennsylvania Core and Academic Standards

Science

Grade **6** - Adopted: **2010**

SUBJECT / STANDARD AREA	**PA.SI.**	**Science as Inquiry**
STANDARD AREA / STATEMENT	SI.5.	Use appropriate tools and technologies to gather, analyze, and interpret data and understand that it enhances accuracy and allows scientists to analyze and quantify results of investigations.
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.
STANDARD AREA / STATEMENT	SI.9.	Understand that scientific investigations may result in new ideas for study, new methods, or procedures for an investigation or new technologies to improve data collection.

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	3.4.6.A1.	Identify how creative thinking and economic and cultural influences shape technological development.
DESCRIPTOR / STANDARD	3.4.6.A2.	Describe how systems thinking involves considering how every part relates to others.
DESCRIPTOR / STANDARD	3.4.6.A3.	Explain how knowledge from other fields of study (STEM) integrate to create new technologies.

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	3.4.6.B2.	Describe how technologies can be used to repair damage caused by natural disasters and to break down waste from the use of various products and systems.
DESCRIPTOR / STANDARD	3.4.6.B4.	Demonstrate how new technologies are developed based on people's needs, wants, values, and/or interests.
SUBJECT / STANDARD AREA	**PA.3.**	**Science and Technology and Engineering Education**
STANDARD AREA / STATEMENT	**3.4.**	**Technology and Engineering Education**
STANDARD	**3.4.C.**	**Technology and Engineering Design**
DESCRIPTOR / STANDARD	3.4.6.C1.	Recognize that requirements for a design include such factors as the desired elements and features of a product or system or the limits that are placed on the design.
DESCRIPTOR / STANDARD	3.4.6.C2.	Show how models are used to communicate and test design ideas and processes.
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	3.4.6.D1.	Apply a design process to solve problems beyond the laboratory classroom.
DESCRIPTOR / STANDARD	3.4.6.D2.	Use computers appropriately to access and organize and apply information.
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	3.4.6.E2.	Identify how emerging agricultural technologies have an effect on ecosystem dynamics and human/animal food resources.
SUBJECT / STANDARD AREA	**PA.4.**	**Environment and Ecology**
STANDARD AREA / STATEMENT	**4.4.**	**Agriculture and Society**
STANDARD	4.4.6.A.	Explain how different plants and animals in the United States have specific growing requirements related to climate and soil conditions.

STANDARD	4.4.6.B.	Analyze how soil types and geographic regions have impacted agriculture in Pennsylvania.

Grade **6** - 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.
STANDARD	CC.3.5.6-8.C.	Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.
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		**Craft and Structure**
STANDARD	CC.3.5.6-8.D.	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.
STANDARD	CC.3.5.6-8.E.	Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to an understanding of the 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		**Integration of Knowledge and Ideas**
STANDARD	CC.3.5.6-8.G.	Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).
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.

SUBJECT / STANDARD AREA	**PA.CC.3.6.6-8.**	**Writing: Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.**
STANDARD AREA / STATEMENT		**Text Types and Purposes**
STANDARD	**CC.3.6.6-8.B.**	**Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.**
DESCRIPTOR / STANDARD	CC.3.6.6-8.B.4.	Use precise language and domain-specific vocabulary to inform about or explain the topic.

SUBJECT / STANDARD AREA	**PA.CC.3.6.6-8.**	**Writing: Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.**
STANDARD AREA / STATEMENT		**Production and Distribution of Writing**
STANDARD	CC.3.6.6-8.C.	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
STANDARD	CC.3.6.6-8.E.	Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas clearly and efficiently.

Pennsylvania Core and Academic Standards

Technology Education

Grade **5** - Adopted: **2017**

SUBJECT / STANDARD AREA	**CSTA.1B.**	**Level 1B (Ages 8-11)**
STANDARD AREA / STATEMENT	**1B-AP.**	**Algorithms & Programming**
STANDARD		**Program Development**
DESCRIPTOR / STANDARD	1B-AP-13.	Use an iterative process to plan the development of a program by including others'' perspectives and considering user preferences. (P1.1, P5.1)
DESCRIPTOR / STANDARD	1B-AP-16.	Take on varying roles, with teacher guidance, when collaborating with peers during the design, implementation, and review stages of program development. (P2.2)
DESCRIPTOR / STANDARD	1B-AP-17.	Describe choices made during program development using code comments, presentations, and demonstrations. (P7.2)

SUBJECT / STANDARD AREA	**CSTA.1B.**	**Level 1B (Ages 8-11)**
STANDARD AREA / STATEMENT	**1B-IC.**	**Impacts of Computing**
STANDARD		**Social Interactions**
DESCRIPTOR / STANDARD	1B-IC-20.	Seek diverse perspectives for the purpose of improving computational artifacts. (P1.1)

Pennsylvania Core and Academic Standards

Technology Education

Grade **6** - 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-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 **5** - 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	MP5	Use appropriate tools strategically.
STATEMENT OF ENDURING KNOWLEDGE	MP7	Look for and make use of structure.

Rhode Island World-Class Standards
Mathematics
Grade **6** - 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	MP5	Use appropriate tools strategically.
STATEMENT OF ENDURING KNOWLEDGE	MP7	Look for and make use of structure.

DOMAIN		Grade 6 Content Standards
STATEMENT OF ENDURING KNOWLEDGE	**6.RP.**	**Ratios and Proportional Relationships**
GSE STEM	**6.RP.A.**	**Understand ratio and rate concepts and use ratio and rate reasoning to solve problems.**
SPECIFIC INDICATOR	**6.RP.A.3.**	**Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.**
INDICATOR	6.RP.A.3.a.	Make tables of equivalent ratios relating quantities with whole-number measurements. Find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.

DOMAIN		Grade 6 Content Standards

STATEMENT OF ENDURING KNOWLEDGE	**6.EE.**	**Expressions and Equations**
GSE STEM	**6.EE.B.**	**Reason about and solve one-variable equations and inequalities.**
SPECIFIC INDICATOR	6.EE.B.5.	Understand solving an equation or inequality as a process of answering a question: Which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.

Rhode Island World-Class Standards

Science

Grade **5** - Adopted: **2013**

DOMAIN	**NGSS.5-LS.**	**LIFE SCIENCE**
STATEMENT OF ENDURING KNOWLEDGE	**5-LS1.**	**From Molecules to Organisms: Structures and Processes**
GSE STEM		**Students who demonstrate understanding can:**
SPECIFIC INDICATOR	5-LS1-1.	Support an argument that plants get the materials they need for growth chiefly from air and water.

DOMAIN	**NGSS.5-ESS.**	**EARTH AND SPACE SCIENCE**
STATEMENT OF ENDURING KNOWLEDGE	**5-ESS3.**	**Earth and Human Activity**
GSE STEM		**Students who demonstrate understanding can:**
SPECIFIC INDICATOR	5-ESS3-1.	Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.

DOMAIN	**NGSS.3-5-ETS.**	**ENGINEERING DESIGN**
STATEMENT OF ENDURING KNOWLEDGE	**3-5-ETS1.**	**Engineering Design**
GSE STEM		**Students who demonstrate understanding can:**
SPECIFIC INDICATOR	3-5-ETS1-1.	Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
SPECIFIC INDICATOR	3-5-ETS1-2.	Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
SPECIFIC INDICATOR	3-5-ETS1-3.	Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

Rhode Island World-Class Standards

Science

Grade **6** - 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.
DOMAIN	**NGSS.MS-ETS.**	**ENGINEERING DESIGN**
STATEMENT OF ENDURING KNOWLEDGE	**MS-ETS1.**	**Engineering Design**
GSE STEM		**Students who demonstrate understanding can:**
SPECIFIC INDICATOR	MS-ETS1-1.	Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.
SPECIFIC INDICATOR	MS-ETS1-2.	Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.
SPECIFIC INDICATOR	MS-ETS1-4.	Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.

Grade **6** - 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.
GSE STEM	RST.6-8.3.	Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.
DOMAIN	**RST.6-8.**	**Reading Standards for Literacy in Science and Technical Subjects**
STATEMENT OF ENDURING KNOWLEDGE		**Craft and Structure**

GSE STEM	RST.6-8.4.	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6-8 texts and topics.
GSE STEM	RST.6-8.5.	Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to an understanding of the topic.
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.6-8.7.	Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).
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.
DOMAIN	**WHST.6-8.**	**Writing Standards for Literacy in Science and Technical Subjects**
STATEMENT OF ENDURING KNOWLEDGE		**Text Types and Purposes**
GSE STEM	**WHST.6-8.2.**	**Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.**
SPECIFIC INDICATOR	WHST.6-8.2(d)	Use precise language and domain-specific vocabulary to inform about or explain the topic.
DOMAIN	**WHST.6-8.**	**Writing Standards for Literacy in Science and Technical Subjects**
STATEMENT OF ENDURING KNOWLEDGE		**Production and Distribution of Writing**
GSE STEM	WHST.6-8.4.	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
GSE STEM	WHST.6-8.6.	Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas clearly and efficiently.

Rhode Island World-Class Standards

Technology Education

Grade **5** - 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.

Rhode Island World-Class Standards

Technology Education

Grade **6** - 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 **6** - 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 **5** - 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.5.**	**Use a variety of mathematical tools effectively and strategically.**
PERFORMANCE DESCRIPTOR / STANDARD	PS.5a.	Select and use appropriate tools when solving a mathematical problem.
PERFORMANCE DESCRIPTOR / STANDARD	PS.5b.	Use technological tools and other external mathematical resources to explore and deepen understanding of concepts.

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.7c.	Look for structures to interpret meaning and develop solution strategies.

South Carolina Standards & Learning

Mathematics

Grade **6** - 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.5.**	**Use a variety of mathematical tools effectively and strategically.**
PERFORMANCE DESCRIPTOR / STANDARD	PS.5a.	Select and use appropriate tools when solving a mathematical problem.
PERFORMANCE DESCRIPTOR / STANDARD	PS.5b.	Use technological tools and other external mathematical resources to explore and deepen understanding of concepts.
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.7c.	Look for structures to interpret meaning and develop solution strategies.

STANDARD / COURSE	**SC.6.NS.**	**The Number System**
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION	**6.NS.7.**	**Understand and apply the concepts of comparing, ordering, and finding absolute value to rational numbers.**
PERFORMANCE DESCRIPTOR / STANDARD	6.NS.7c.	Use concepts of equality and inequality to write and to explain real-world and mathematical situations.

STANDARD / COURSE	**SC.6.RP.**	**Ratios and Proportional Relationships**
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION	**6.RP.3.**	**Apply the concepts of ratios and rates to solve real-world and mathematical problems.**
PERFORMANCE DESCRIPTOR / STANDARD	6.RP.3a.	Create a table consisting of equivalent ratios and plot the results on the coordinate plane.
PERFORMANCE DESCRIPTOR / STANDARD	6.RP.3b.	Use multiple representations, including tape diagrams, tables, double number lines, and equations, to find missing values of equivalent ratios.
PERFORMANCE DESCRIPTOR / STANDARD	6.RP.3c.	Use two tables to compare related ratios.

South Carolina Standards & Learning

Science

Grade **5** - Adopted: **2021**

STANDARD / COURSE		**Earth and Space Science (ESS)**
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION		**Earth and Human Activity (ESS3)**
PERFORMANCE DESCRIPTOR / STANDARD	5-ESS3-1.	Evaluate potential solutions to problems that individual communities face in protecting the Earth's resources and environment.

South Carolina Standards & Learning

Technology Education

Grade **5** - 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.**	**Recognize that many daily tasks can be described as step-by-step instructions (i.e., algorithms).**
PERFORMANCE DESCRIPTOR / STANDARD	5.AP.1.1.	Execute a sequence of instructions (i.e., algorithm) that mimic a daily task.

STANDARD / COURSE		**Algorithms and Programming**
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION	**Standard 3.**	**Explore how tasks can be decomposed into simple tasks and simple tasks can be composed to form complex tasks.**
PERFORMANCE DESCRIPTOR / STANDARD	5.AP.3.1.	Compose multiple levels of simple tasks (e.g., eating breakfast can include going to the table, sitting down in a chair, and picking up a spoon; brushing your teeth; walking to the bus stop) to make a more complex task.

STANDARD / COURSE		**Algorithms and Programming**
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION	**Standard 4.**	**Develop a program to express an idea or address a problem.**
PERFORMANCE DESCRIPTOR / STANDARD	5.AP.4.1.	Use a visual language to design and test a program that solves a simple task (e.g., online coding activity).

South Carolina Standards & Learning

Technology Education

Grade **6** - 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	6.AP.1.1.	Recognize that there are multiple ways to sequence instructions that can lead to the same result.
STANDARD / COURSE		**Algorithms and Programming**
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION	**Standard 4.**	**Design and code programs to solve problems.**

PERFORMANCE DESCRIPTOR / STANDARD	6.AP.4.1.	Use a beginner coding language (e.g., drag-and-drop, block-based) to design and code a simple program that solves a problem.

South Dakota Content Standards

Mathematics

Grade **5** - 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	5	Use appropriate tools strategically.
INDICATOR/BENCHMARK	7	Look for and make use of structure.

South Dakota Content Standards

Mathematics

Grade **6** - 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	5	Use appropriate tools strategically.
INDICATOR/BENCHMARK	7	Look for and make use of structure.
GOAL/STRAND	**6.RP.**	**Ratios and Proportional Relationships**

INDICATOR/BENCHMARK	**6.RP.A.**	**Understand ratio concepts and use ratio reasoning to solve problems.**
STANDARD	**6.RP.A.3.**	**Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.**
SUPPORTING SKILLS	6.RP.A.3.a.	Make tables of equivalent ratios relating quantities with whole number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.
GOAL/STRAND	**6.EE.**	**Expressions and Equations**
INDICATOR/BENCHMARK	**6.EE.B.**	**Reason about and solve one-variable equations and inequalities.**
STANDARD	6.EE.B.5.	Understand solving an equation or inequality is a process in which you determine values from a set that make an equation or inequality true. Use substitution to determine whether a given number in a specified set makes an equation or inequality true.

South Dakota Content Standards

Science

Grade **5** - Adopted: **2015**

GOAL/STRAND	**SD.5.LSS.**	**Fifth Grade Life Science Standards**
INDICATOR/BENCHMARK	5-LS1-1.	Support an argument that plants get the materials they need for growth chiefly from air and water. (SEP: 7; DCI: LS1.C; CCC: Energy/Matter)
GOAL/STRAND	**SD.5.SSS.**	**Fifth Grade Space Science Standards**
INDICATOR/BENCHMARK	5-ESS3-1.	Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment. (SEP:8; DCI: ESS3.C; CCC: Systems)

South Dakota Content Standards

Science

Grade **6** - Adopted: **2015**

GOAL/STRAND	**SD.6-8.PSS.**	**Middle School Physical Science Standards**
INDICATOR/BENCHMARK	MS-PS4-3.	Obtain, evaluate and communicate information to support the claim that digitized signals are a more reliable way to encode and transmit information than analog signals. (SEP: 8; DCI: PS4.C; CCC: Structure, Technology)
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)

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.
STANDARD	RST.6-8.3.	Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.
GOAL/STRAND	**SD.RST.6-8.**	**Reading Standards for Literacy in Science and Technical Subjects**
INDICATOR/BENCHMARK		**Craft and Structure**
STANDARD	RST.6-8.4.	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6-8 texts and topics.
STANDARD	RST.6-8.5.	Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to an understanding of the topic.
GOAL/STRAND	**SD.RST.6-8.**	**Reading Standards for Literacy in Science and Technical Subjects**
INDICATOR/BENCHMARK		**Integration of Knowledge and Ideas**
STANDARD	RST.6-8.7.	Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).
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.
GOAL/STRAND	**SD.WHST.6-8.**	**Writing Standards for Literacy in Science and Technical Subjects**
INDICATOR/BENCHMARK		**Text Types and Purposes**
STANDARD	**WHST.6-8.2.**	**Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.**
SUPPORTING SKILLS	WHST.6-8.2(d)	Use precise language and domain-specific vocabulary to inform about or explain the topic.
GOAL/STRAND	**SD.WHST.6-8.**	**Writing Standards for Literacy in Science and Technical Subjects**

INDICATOR/BENCHMARK		Production and Distribution of Writing
STANDARD	WHST.6-8.4.	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
STANDARD	WHST.6-8.6.	Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas clearly and efficiently.

Tennessee Academic Standards

Mathematics

Grade **5** - 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	5	Use appropriate tools strategically.
CONCEPTUAL STRAND / GUIDING QUESTION	7	Look for and make use of structure.

Tennessee Academic Standards

Mathematics

Grade **6** - 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	5	Use appropriate tools strategically.
CONCEPTUAL STRAND / GUIDING QUESTION	7	Look for and make use of structure.

STRAND / STANDARD / COURSE		**Mathematics | Grade 6**
CONCEPTUAL STRAND / GUIDING QUESTION	**6.RP.**	**Ratios and Proportional Relationships (RP)**
GUIDING QUESTION / LEARNING EXPECTATION	**6.RP.A.**	**Understand ratio concepts and use ratio reasoning to solve problems.**
LEARNING EXPECTATION	**6.RP.A.3.**	**Use ratio and rate reasoning to solve real-world and mathematical problems (e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations).**
INDICATOR	6.RP.A.3.a.	Make tables of equivalent ratios relating quantities with whole number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.

STRAND / STANDARD / COURSE		**Mathematics | Grade 6**
CONCEPTUAL STRAND / GUIDING QUESTION	**6.EE.**	**Expressions and Equations(EE)**
GUIDING QUESTION / LEARNING EXPECTATION	**6.EE.B.**	**Reason about and solve one-variable equations and inequalities.**
LEARNING EXPECTATION	6.EE.B.5.	Understand that a solution to an equation or inequality is the value(s) that makes that statement true. Use substitution to determine whether a given number in a specified set makes an equation or inequality true.

STRAND / STANDARD / COURSE	**TN.5.ETS.**	**Engineering, Technology, and Applications of Science (ETS)**
CONCEPTUAL STRAND / GUIDING QUESTION	**5.ETS1.**	**Engineering Design**
GUIDING QUESTION / LEARNING EXPECTATION	5.ETS1.1.	Research, test, re-test, and communicate a design to solve a problem.
GUIDING QUESTION / LEARNING EXPECTATION	5.ETS1.2.	Plan and carry out tests on one or more elements of a prototype in which variables are controlled and failure points are considered to identify which elements need to be improved. Apply the results of tests to redesign the prototype.
GUIDING QUESTION / LEARNING EXPECTATION	5.ETS1.3.	Describe how failure provides valuable information toward finding a solution.

STRAND / STANDARD / COURSE	**TN.5.ETS.**	**Engineering, Technology, and Applications of Science (ETS)**
CONCEPTUAL STRAND / GUIDING QUESTION	**5.ETS2.**	**Links Among Engineering, Technology, Science, and Society**
GUIDING QUESTION / LEARNING EXPECTATION	5.ETS2.1.	Use appropriate measuring tools, simple hand tools, and fasteners to construct a prototype of a new or improved technology.
GUIDING QUESTION / LEARNING EXPECTATION	5.ETS2.3.	Identify how scientific discoveries lead to new and improved technologies.

Tennessee Academic Standards

Science

Grade **6** - Adopted: **2016**

STRAND / STANDARD / COURSE	**TN.6.LS.**	**Life Sciences (LS)**
CONCEPTUAL STRAND / GUIDING QUESTION	**6.LS4.**	**Biological Change: Unity and Diversity**
GUIDING QUESTION / LEARNING EXPECTATION	6.LS4.2.	Design a possible solution for maintaining biodiversity of ecosystems while still providing necessary human resources without disrupting environmental equilibrium.

STRAND / STANDARD / COURSE	**TN.6.ESS.**	**Earth and Space Sciences (ESS)**
CONCEPTUAL STRAND / GUIDING QUESTION	**6.ESS2.**	**Earth's Systems**
GUIDING QUESTION / LEARNING EXPECTATION	6.ESS2.4.	Apply scientific principles to design a method to analyze and interpret the impact of humans and other organisms on the hydrologic cycle.

STRAND / STANDARD / COURSE	**TN.6.ESS.**	**Earth and Space Sciences (ESS)**
CONCEPTUAL STRAND / GUIDING QUESTION	**6.ESS3.**	**Earth and Human Activity**
GUIDING QUESTION / LEARNING EXPECTATION	6.ESS3.3.	Assess the impacts of human activities on the biosphere including conservation, habitat management, species endangerment, and extinction.

STRAND / STANDARD / COURSE	**TN.6.ETS.**	**Engineering, Technology, and Applications of Science (ETS)**
CONCEPTUAL STRAND / GUIDING QUESTION	**6.ETS1.**	**Engineering Design**
GUIDING QUESTION / LEARNING EXPECTATION	6.ETS1.1.	Evaluate design constraints on solutions for maintaining ecosystems and biodiversity.

Tennessee Academic Standards

Technology Education

Grade **5** - Adopted: **2022**

STRAND / STANDARD / COURSE		**Tennessee K-12 Computer Science State Standards**
CONCEPTUAL STRAND / GUIDING QUESTION		**Fifth Grade: Computer Science Standards**
GUIDING QUESTION / LEARNING EXPECTATION	**5.AT.**	**Algorithmic Thinking**
LEARNING EXPECTATION	5.AT.1.	Analyze and improve an algorithm that includes sequencing and simple patterns with or without a computing device.
LEARNING EXPECTATION	5.AT.2.	Create an algorithm to solve a problem while detecting and debugging logical errors within the algorithm.

LEARNING EXPECTATION	5.AT.3.	Develop and recommend solutions to a given problem and explain the process to an audience.

STRAND / STANDARD / COURSE		Tennessee K-12 Computer Science State Standards
CONCEPTUAL STRAND / GUIDING QUESTION		Fifth Grade: Computer Science Standards
GUIDING QUESTION / LEARNING EXPECTATION	5.PC.	Programming Concepts
LEARNING EXPECTATION	5.PC.1.	Create simple animated stories or solve pre-existing problems using a precise sequence of instructions and simple loops, collaboratively or individually.

Tennessee Academic Standards

Technology Education

Grade **6** - 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 **5** - Adopted: **2012**

TEKS	**111.7.**	**Grade 5, Adopted 2012.**
STUDENT EXPECTATION	**111.7.b.1.**	**Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:**
GRADE LEVEL EXPECTATION	111.7.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	111.7.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	111.7.b.1.F.	Analyze mathematical relationships to connect and communicate mathematical ideas.

TEKS	**111.7.**	**Grade 5, Adopted 2012.**
STUDENT EXPECTATION	**111.7.b.9.**	**Data analysis. The student applies mathematical process standards to solve problems by collecting, organizing, displaying, and interpreting data. The student is expected to:**
GRADE LEVEL EXPECTATION	111.7.b.9.C.	Solve one- and two-step problems using data from a frequency table, dot plot, bar graph, stem-and-leaf plot, or scatterplot.

Texas Essential Knowledge and Skills (TEKS)

Mathematics

Grade **6** - Adopted: **2012**

TEKS	**111.26.**	**Grade 6, Adopted 2012.**
STUDENT EXPECTATION	**111.26.b.1.**	**Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:**
GRADE LEVEL EXPECTATION	111.26.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	111.26.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	111.26.b.1.F.	Analyze mathematical relationships to connect and communicate mathematical ideas.

TEKS	**111.26.**	**Grade 6, Adopted 2012.**
STUDENT EXPECTATION	**111.26.b.7.**	**Expressions, equations, and relationships. The student applies mathematical process standards to develop concepts of expressions and equations. The student is expected to:**
GRADE LEVEL EXPECTATION	111.26.b.7.B.	Distinguish between expressions and equations verbally, numerically, and algebraically.

Texas Essential Knowledge and Skills (TEKS)

Science

Grade **5** - Adopted: **2017**

TEKS	**§112.16**	**Science, Grade 5, Adopted 2017 – The provisions of §§112.11-112.16 of this subchapter shall be implemented by school districts beginning with the 2018-2019 school year.**
STUDENT EXPECTATION	**§112.16.b**	**Knowledge and skills.**
GRADE LEVEL EXPECTATION	**§112.16.b.2**	**Scientific investigation and reasoning. The student uses scientific practices during laboratory and outdoor investigations. The student is expected to:**
INDICATOR	§112.16.b.2.B	ask well defined questions, formulate testable hypotheses, and select and use appropriate equipment and technology
INDICATOR	§112.16.b.2.C	collect and record information using detailed observations and accurate measuring
INDICATOR	§112.16.b.2.D	analyze and interpret information to construct reasonable explanations from direct (observable). and indirect (inferred). evidence
INDICATOR	§112.16.b.2.G	construct appropriate simple graphs, tables, maps, and charts using technology, including computers, to organize, examine, and evaluate information

TEKS	**§112.16**	**Science, Grade 5, Adopted 2017 – The provisions of §§112.11-112.16 of this subchapter shall be implemented by school districts beginning with the 2018-2019 school year.**
STUDENT EXPECTATION	**§112.16.b**	**Knowledge and skills.**
GRADE LEVEL EXPECTATION	**§112.16.b.3**	**Scientific investigation and reasoning. The student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to:**
INDICATOR	§112.16.b.3.A	analyze, evaluate, and critique scientific explanations by using evidence, logical reasoning, and experimental and observational testing
INDICATOR	§112.16.b.3.B	draw or develop a model that represents how something that cannot be seen such as the Sun, Earth, and Moon system and formation of sedimentary rock works or looks

TEKS	**§112.16**	**Science, Grade 5, Adopted 2017 – The provisions of §§112.11-112.16 of this subchapter shall be implemented by school districts beginning with the 2018-2019 school year.**
STUDENT EXPECTATION	**§112.16.b**	**Knowledge and skills.**
GRADE LEVEL EXPECTATION	**§112.16.b.4**	**Scientific investigation and reasoning. The student knows how to use a variety of tools and methods to conduct science inquiry. The student is expected to:**
INDICATOR	§112.16.b.4.A	collect, record, and analyze information using tools, including calculators, microscopes, cameras, computers, hand lenses, metric rulers, Celsius thermometers, prisms, mirrors, balances, spring scales, graduated cylinders, beakers, hot plates, meter sticks, magnets, collecting nets, and notebooks; timing devices; and materials to support observations of habitats or organisms such as terrariums and aquariums

Texas Essential Knowledge and Skills (TEKS)

Science

Grade **6** - Adopted: **2017**

TEKS	**§112.18**	**Science, Grade 6, Adopted 2017 – The provisions of §§112.18-112.20 of this subchapter shall be implemented by school districts beginning with the 2018-2019 school year.**
STUDENT EXPECTATION	**§112.18.b**	**Knowledge and skills.**
GRADE LEVEL EXPECTATION	**§112.18.b.2**	**Scientific investigation and reasoning. The student uses scientific practices during laboratory and field investigations. The student is expected to:**

INDICATOR	§112.18.b.2.C	collect and record data using the International System of Units (SI). and qualitative means such as labeled drawings, writing, and graphic organizers
INDICATOR	§112.18.b.2.D	construct tables and graphs, using repeated trials and means, to organize data and identify patterns
INDICATOR	§112.18.b.2.E	analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends

TEKS	**§112.18**	**Science, Grade 6, Adopted 2017 – The provisions of §§112.18-112.20 of this subchapter shall be implemented by school districts beginning with the 2018-2019 school year.**
STUDENT EXPECTATION	**§112.18.b**	**Knowledge and skills.**
GRADE LEVEL EXPECTATION	**§112.18.b.3**	**Scientific investigation and reasoning. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions and knows the contributions of relevant scientists. The student is expected to:**
INDICATOR	§112.18.b.3.A	analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student

TEKS	**§112.18**	**Science, Grade 6, Adopted 2017 – The provisions of §§112.18-112.20 of this subchapter shall be implemented by school districts beginning with the 2018-2019 school year.**
STUDENT EXPECTATION	**§112.18.b**	**Knowledge and skills.**
GRADE LEVEL EXPECTATION	**§112.18.b.4**	**Scientific investigation and reasoning. The student knows how to use a variety of tools and safety equipment to conduct science inquiry. The student is expected to:**
INDICATOR	§112.18.b.4.A	use appropriate tools, including journals/notebooks, beakers, Petri dishes, meter sticks, graduated cylinders, hot plates, test tubes, balances, microscopes, thermometers, calculators, computers, timing devices, and other necessary equipment to collect, record, and analyze information

Texas Essential Knowledge and Skills (TEKS)

Technology Education

Grade **5** - Adopted: **2011**

TEKS	**§126.7.**	**Technology Applications, Grades 3-5**
STUDENT EXPECTATION	**§126.7.(1)**	**Creativity and innovation. The student uses creative thinking and innovative processes to construct knowledge and develop digital products. The student is expected to:**
GRADE LEVEL EXPECTATION	§126.7.(1)(C)	Use virtual environments to explore systems and issues.

TEKS	**§126.7.**	**Technology Applications, Grades 3-5**
STUDENT EXPECTATION	**§126.7.(4)**	**Critical thinking, problem solving, and decision making. The student researches and evaluates projects using digital tools and resources. The student is expected to:**
GRADE LEVEL EXPECTATION	§126.7.(4)(A)	Identify information regarding a problem and explain the steps toward the solution.

Texas Essential Knowledge and Skills (TEKS)

Technology Education

Grade **6** - Adopted: **2011**

TEKS	**§126.14.**	**Technology Applications, Grade 6**

STUDENT EXPECTATION	§126.14.(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	§126.14.(4)(A)	Identify and define relevant problems and significant questions for investigation.

Utah Core Standards

Mathematics

Grade **5** - Adopted: **2016**

STANDARD / AREA OF LEARNING	UT.5.MP.	MATHEMATICAL PRACTICES (5.MP)
OBJECTIVE / STRAND	5.MP.1.	Make sense of problems and persevere in solving them.
OBJECTIVE / STRAND	5.MP.2.	Reason abstractly and quantitatively.
OBJECTIVE / STRAND	5.MP.3.	Construct viable arguments and critique the reasoning of others.
OBJECTIVE / STRAND	5.MP.4.	Model with mathematics.
OBJECTIVE / STRAND	5.MP.5.	Use appropriate tools strategically.
OBJECTIVE / STRAND	5.MP.7.	Look for and make use of structure.

Utah Core Standards

Mathematics

Grade **6** - Adopted: **2016**

STANDARD / AREA OF LEARNING	UT.6.MP.	MATHEMATICAL PRACTICES (6.MP)
OBJECTIVE / STRAND	6.MP.1.	Make sense of problems and persevere in solving them.
OBJECTIVE / STRAND	6.MP.2.	Reason abstractly and quantitatively.
OBJECTIVE / STRAND	6.MP.3.	Construct viable arguments and critique the reasoning of others.
OBJECTIVE / STRAND	6.MP.4.	Model with mathematics.
OBJECTIVE / STRAND	6.MP.5.	Use appropriate tools strategically.

OBJECTIVE / STRAND	6.MP.7.	Look for and make use of structure.

STANDARD / AREA OF LEARNING	**UT.6.RP.**	**RATIOS AND PROPORTIONAL RELATIONSHIPS (6.RP)**
OBJECTIVE / STRAND		**Understand ratio concepts and use ratio reasoning to solve problems (Standards 6.RP.1–3).**
INDICATOR / CLUSTER	**6.RP.3.**	**Use ratio and rate reasoning to solve real-world (with a context) and mathematical (void of context) problems, using strategies such as reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations involving unit rate problems.**
EXPECTATION / STANDARD	6.RP.3.a.	Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.

STANDARD / AREA OF LEARNING	**UT.6.EE.**	**EXPRESSIONS AND EQUATIONS (6.EE)**
OBJECTIVE / STRAND		**Apply and extend previous understandings of arithmetic to algebraic expressions involving exponents and variables (Standards 6.EE.1–4). They reason about and solve one-variable equations and inequalities (Standards 6.EE.5–8). Represent and analyze quantitative relationships between dependent and independent variables in a real-world context (Standard 6.EE.9).**
INDICATOR / CLUSTER	6.EE.5.	Understand solving an equation or inequality as a process of answering the question: Which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.

Utah Core Standards

Science

Grade **5** - Adopted: **2019**

STANDARD / AREA OF LEARNING		**SEEd - Grade 5 (2019)**
OBJECTIVE / STRAND	**Strand 5.3:**	**CYCLING OF MATTER IN ECOSYSTEMS**
INDICATOR / CLUSTER		**Matter cycles within ecosystems and can be traced from organism to organism. Plants use energy from the Sun to change air and water into matter needed for growth. Animals and decomposers consume matter for their life functions, continuing the cycling of matter. Human behavior can affect the cycling of matter. Scientists and engineers design solutions to conserve Earth's environments and resources.**
EXPECTATION / STANDARD	Standard 5.3.1.	Construct an explanation that plants use air, water, and energy from sunlight to produce plant matter needed for growth. Emphasize photosynthesis at a conceptual level and that plant matter comes mostly from air and water, not from the soil. Photosynthesis at the cellular level will be taught in Grades 6 through 8. (LS1.C)
EXPECTATION / STANDARD	Standard 5.3.4.	Evaluate design solutions whose primary function is to conserve Earth's environments and resources. Define the problem, identify criteria and constraints, analyze available data on proposed solutions, and determine an optimal solution. Emphasize how humans can balance everyday needs (agriculture, industry, and energy) while conserving Earth's environments and resources. (ESS3.A, ESS3.C, ETS1.A, ETS1.B, ETS1.C)

Utah Core Standards

Science

Grade **6** - Adopted: **2015**

STANDARD / AREA OF LEARNING		**SEEd - Grade 6 (2017)**
OBJECTIVE / STRAND	**Strand 6.4:**	**STABILITY AND CHANGE IN ECOSYSTEMS**

INDICATOR / CLUSTER		**The study of ecosystems includes the interaction of organisms with each other and with the physical environment. Consistent interactions occur within and between species in various ecosystems as organisms obtain resources, change the environment, and are affected by the environment. This influences the flow of energy through an ecosystem, resulting in system variations. Additionally, ecosystems benefit humans through processes and resources, such as the production of food, water and air purification, and recreation opportunities. Scientists and engineers investigate interactions among organisms and evaluate design solutions to preserve biodiversity and ecosystem resources.**
EXPECTATION / STANDARD	Standard 6.4.5	Evaluate competing design solutions for preserving ecosystem services that protect resources and biodiversity based on how well the solutions maintain stability within the ecosystem. Emphasize obtaining, evaluating, and communicating information of differing design solutions. Examples could include policies affecting ecosystems, responding to invasive species or solutions for the preservation of ecosystem resources specific to Utah, such as air and water quality and prevention of soil erosion.

Grade **6** - 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.
INDICATOR / CLUSTER	RST.6-8.3.	Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.
STANDARD / AREA OF LEARNING		**Reading Standards for Literacy in Science and Technical Subjects**
OBJECTIVE / STRAND		**Craft and Structure**
INDICATOR / CLUSTER	RST.6-8.4.	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6-8 texts and topics.
INDICATOR / CLUSTER	RST.6-8.5.	Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to an understanding of the topic.
STANDARD / AREA OF LEARNING		**Reading Standards for Literacy in Science and Technical Subjects**
OBJECTIVE / STRAND		**Integration of Knowledge and Ideas**
INDICATOR / CLUSTER	RST.6-8.7.	Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).
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.

STANDARD / AREA OF LEARNING		**Writing Standards for Literacy in Science and Technical Subjects**
OBJECTIVE / STRAND		**Text Types and Purposes**
INDICATOR / CLUSTER	**WHST.6-8.2.**	**Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.**
EXPECTATION / STANDARD	WHST.6-8.2(d)	Use precise language and domain-specific vocabulary to inform about or explain the topic.

STANDARD / AREA OF LEARNING		**Writing Standards for Literacy in Science and Technical Subjects**
OBJECTIVE / STRAND		**Production and Distribution of Writing**
INDICATOR / CLUSTER	WHST.6-8.4.	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
INDICATOR / CLUSTER	WHST.6-8.6.	Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas clearly and efficiently.

Utah Core Standards
Technology Education
Grade **5** - Adopted: **2019**

STANDARD / AREA OF LEARNING		**Utah K-5 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 K-5 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 K-5 Computer Science Standards**
OBJECTIVE / STRAND		**Core Practices**
INDICATOR / CLUSTER	**Practice 1:**	**Fostering an Inclusive Computing Culture**
EXPECTATION / STANDARD		**By the end of Grade 5, 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 K-5 Computer Science Standards**
OBJECTIVE / STRAND		**Core Practices**
INDICATOR / CLUSTER	**Practice 2:**	**Collaborating Around Computing**
EXPECTATION / STANDARD		**By the end of Grade 5, students should be able to:**
INDICATOR	2	Create team norms, expectations, and equitable workloads to increase efficiency and effectiveness.

STANDARD / AREA OF LEARNING		**Utah K-5 Computer Science Standards**
OBJECTIVE / STRAND		**Core Practices**
INDICATOR / CLUSTER	**Practice 3:**	**Recognizing and Defining Computational Problems**
EXPECTATION / STANDARD		**By the end of Grade 5, 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 K-5 Computer Science Standards**
OBJECTIVE / STRAND		**Core Practices**
INDICATOR / CLUSTER	**Practice 5:**	**Creating Computational Artifacts**
EXPECTATION / STANDARD		**By the end of Grade 5, 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, considering 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 K-5 Computer Science Standards**
OBJECTIVE / STRAND		**Core Practices**
INDICATOR / CLUSTER	**Practice 6:**	**Testing and Refining Computational Artifacts**
EXPECTATION / STANDARD		**By the end of Grade 5, students should be able to:**
INDICATOR	1	Systematically test computational artifacts by considering all scenarios and using test cases.
STANDARD / AREA OF LEARNING		**Utah K-5 Computer Science Standards**
OBJECTIVE / STRAND		**Algorithms and Programming (AP):**
INDICATOR / CLUSTER	**Standard 5.AP.1.**	**Compare and refine multiple algorithms for the same task and determine which is the most appropriate. (Practice 3: Recognizing and Defining Computational Problems and Practice 6: Testing and Refining Computational Artifacts)**
EXPECTATION / STANDARD		Students will compare different algorithms that achieve the same result, and determine which algorithm is more appropriate. For example, students will compare different ways to get ready in the morning before school or which is the best route to get to the lunchroom.
STANDARD / AREA OF LEARNING		**Utah K-5 Computer Science Standards**
OBJECTIVE / STRAND		**Algorithms and Programming (AP):**
INDICATOR / CLUSTER	**Standard 5.AP.4.**	**Use an iterative process to plan and develop a program by considering the perspectives and preferences of others. (Practice 1: Fostering an Inclusive Computing Culture and Practice 5: Creating Computational Artifacts)**
EXPECTATION / STANDARD		Students will plan and develop a solution for another person's problem. For example, a student has a hard time completing homework. The team designs a solution for how to manage time in order to complete homework, gathers data on the new solution, and revises the solution.

Utah Core Standards

Technology Education

Grade **6** - 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		**Computing Systems (CS):**
INDICATOR / CLUSTER	**Standard 6.CS.1.**	**Utilize troubleshooting strategies to resolve hardware and software issues in a logical order. (Practice 4: Developing and Using Abstractions)**

EXPECTATION / STANDARD		Students will be able to utilize a step-by-step approach to identify and resolve problems with hardware and software. For example, a checklist can be used to ensure that possible solutions are not overlooked such as checking for writing conventions before finalizing a writing assignment. Students may refer to the order of operations when solving a math equation. Students may search for technical information online when solving problems. A flow diagram may be used to determine possible next steps.
STANDARD / AREA OF LEARNING		**Utah 6-12 Computer Science Standards**
OBJECTIVE / STRAND		**Algorithms and Programming (AP):**
INDICATOR / CLUSTER	**Standard 6.AP.1.**	**Design and illustrate algorithms to efficiently solve complex problems by utilizing pseudocode and/or other descriptive methods. (Practice 3: Recognizing and defining computational problems)**
EXPECTATION / STANDARD		Students will decompose or design algorithms (how to instructions) utilizing pseudocode to solve complex problems. Students will be able to decompose a real-world problem and illustrate the decision-making process in a well-organized flowchart, storyboard, ordered directions, notations, or other method. For example, the students might create a flowchart to illustrate which equipment to use for recess based on the weather, play preference, and a student's energy level.
STANDARD / AREA OF LEARNING		**Utah 6-12 Computer Science Standards**
OBJECTIVE / STRAND		**Algorithms and Programming (AP):**
INDICATOR / CLUSTER	**Standard 6.AP.2.**	**Create naming conventions for variables that support the debugging process and incorporate these variables into a simple program. (Practice 7: Communicating about Computing)**
EXPECTATION / STANDARD		To make the debugging process easier, students will create and name variables that store data in a meaningful and logical way. For example, when writing an algorithm, students will incorporate names based on the command function such as use the variable "turn" to describe direction, "loop" for repeating tasks.

Vermont Content Standards

Mathematics

Grade **5** - 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.5.	Use appropriate tools strategically.
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD	MP.7.	Look for and make use of structure.

Vermont Content Standards

Mathematics

Grade **6** - 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.5.	Use appropriate tools strategically.
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD	MP.7.	Look for and make use of structure.

STANDARD / STRAND	VT.6.RP.	Ratios and Proportional Relationships
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD		**Understand ratio concepts and use ratio reasoning to solve problems.**
GRADE LEVEL EXPECTATION / KNOWLEDGE AND SKILL	**6.RP.3.**	**Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.**

GRADE LEVEL EXPECTATION	6.RP.3(a)	Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.

STANDARD / STRAND	**VT.6.EE.**	**Expressions and Equations**
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD		**Reason about and solve one-variable equations and inequalities.**
GRADE LEVEL EXPECTATION / KNOWLEDGE AND SKILL	6.EE.5.	Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.

Vermont Content Standards

Science

Grade **5** - Adopted: **2014**

STANDARD / STRAND	**VT.5-LS.**	**LIFE SCIENCE**
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD	**5-LS1.**	**From Molecules to Organisms: Structures and Processes**
GRADE LEVEL EXPECTATION / KNOWLEDGE AND SKILL		**Students who demonstrate understanding can:**
GRADE LEVEL EXPECTATION	5-LS1-1.	Support an argument that plants get the materials they need for growth chiefly from air and water.

STANDARD / STRAND	**VT.5-ESS.**	**EARTH AND SPACE SCIENCE**
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD	**5-ESS3.**	**Earth and Human Activity**
GRADE LEVEL EXPECTATION / KNOWLEDGE AND SKILL		**Students who demonstrate understanding can:**
GRADE LEVEL EXPECTATION	5-ESS3-1.	Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.

STANDARD / STRAND	**VT.3-5-ETS.**	**ENGINEERING DESIGN**
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD	**3-5-ETS1.**	**Engineering Design**
GRADE LEVEL EXPECTATION / KNOWLEDGE AND SKILL		**Students who demonstrate understanding can:**
GRADE LEVEL EXPECTATION	3-5-ETS1-1.	Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.

GRADE LEVEL EXPECTATION	3-5-ETS1-2.	Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
GRADE LEVEL EXPECTATION	3-5-ETS1-3.	Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

Vermont Content Standards

Science

Grade **6** - 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.

STANDARD / STRAND	**VT.MS-ETS.**	**ENGINEERING DESIGN**
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD	**MS-ETS1.**	**Engineering Design**
GRADE LEVEL EXPECTATION / KNOWLEDGE AND SKILL		**Students who demonstrate understanding can:**
GRADE LEVEL EXPECTATION	MS-ETS1-1.	Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.
GRADE LEVEL EXPECTATION	MS-ETS1-2.	Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.

GRADE LEVEL EXPECTATION	MS-ETS1-4.	Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.

Grade **6** - 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.
GRADE LEVEL EXPECTATION / KNOWLEDGE AND SKILL	RST.6-8.3.	Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.

STANDARD / STRAND	VT.RST.6-8.	Reading Standards for Literacy in Science and Technical Subjects
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD		**Craft and Structure**
GRADE LEVEL EXPECTATION / KNOWLEDGE AND SKILL	RST.6-8.4.	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6-8 texts and topics.
GRADE LEVEL EXPECTATION / KNOWLEDGE AND SKILL	RST.6-8.5.	Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to an understanding of the topic.

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.6-8.7.	Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).
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.

STANDARD / STRAND	**VT.WHST.6-8.**	**Writing Standards for Literacy in Science and Technical Subjects**
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD		**Text Types and Purposes**
GRADE LEVEL EXPECTATION / KNOWLEDGE AND SKILL	**WHST.6-8.2.**	**Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.**
GRADE LEVEL EXPECTATION	WHST.6-8.2(d)	Use precise language and domain-specific vocabulary to inform about or explain the topic.

STANDARD / STRAND	**VT.WHST.6-8.**	**Writing Standards for Literacy in Science and Technical Subjects**
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD		**Production and Distribution of Writing**
GRADE LEVEL EXPECTATION / KNOWLEDGE AND SKILL	WHST.6-8.4.	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
GRADE LEVEL EXPECTATION / KNOWLEDGE AND SKILL	WHST.6-8.6.	Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas clearly and efficiently.

Vermont Content Standards

Technology Education

Grade **5** - 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 **6** - 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 **6** - Adopted: **2016**

STRAND / TOPIC	**VA.PFA.6.**	**Patterns, Functions, and Algebra**
STANDARD / STRAND	**6.12.**	**The student will**
INDICATOR / STANDARD	6.12.a.	Represent a proportional relationship between two quantities, including those arising from practical situations.
INDICATOR / STANDARD	6.12.c.	Determine whether a proportional relationship exists between two quantities.
INDICATOR / STANDARD	6.12.d.	Make connections between and among representations of a proportional relationship between two quantities using verbal descriptions, ratio tables, and graphs.

Virginia Standards of Learning

Science

Grade **5** - Adopted: **2018**

STRAND / TOPIC		**Grade Five – Transforming matter and energy**
STANDARD / STRAND		**Scientific and Engineering Practices**
INDICATOR / STANDARD	**5.1.**	**The student will demonstrate an understanding of scientific and engineering practices by:**
INDICATOR	**5.1.b.**	**planning and carrying out investigations**
PROGRESS INDICATOR	5.1.b.5.	use tools and/or materials to design and/or build a device that solves a specific problem

STRAND / TOPIC		**Grade Five – Transforming matter and energy**
STANDARD / STRAND		**Scientific and Engineering Practices**
INDICATOR / STANDARD	**5.1.**	**The student will demonstrate an understanding of scientific and engineering practices by:**
INDICATOR	**5.1.f.**	**obtaining, evaluating, and communicating information**

PROGRESS INDICATOR	5.1.f.2.	communicate scientific information, design ideas, and/or solutions with others

STRAND / TOPIC		**Grade Five – Transforming matter and energy**
STANDARD / STRAND		**Earth Resources**
INDICATOR / STANDARD	**5.9.**	**The student will investigate and understand that the conservation of energy resources is important. Key ideas include:**
INDICATOR	5.9.b.	individuals and communities have means of conserving both energy and matter;

Virginia Standards of Learning

Science

Grade **6** - Adopted: **2018**

STRAND / TOPIC		**Grade Six – Our world; our responsibility**
STANDARD / STRAND	**6.1.**	**The student will demonstrate an understanding of scientific and engineering practices by:**
INDICATOR / STANDARD	**6.1.a.**	**asking questions and defining problems**
INDICATOR	6.1.a.3.	offer simple solutions to design problems

STRAND / TOPIC		**Grade Six – Our world; our responsibility**
STANDARD / STRAND	**6.1.**	**The student will demonstrate an understanding of scientific and engineering practices by:**
INDICATOR / STANDARD	**6.1.b.**	**planning and carrying out investigations**
INDICATOR	6.1.b.2.	evaluate the accuracy of various methods for collecting data
INDICATOR	6.1.b.4.	use tools and materials to design and/or build a device to solve a specific problem

STRAND / TOPIC		**Grade Six – Our world; our responsibility**
STANDARD / STRAND	**6.1.**	**The student will demonstrate an understanding of scientific and engineering practices by:**
INDICATOR / STANDARD	**6.1.c.**	**interpreting, analyzing, and evaluating data**
INDICATOR	6.1.c.1.	organize data sets to reveal patterns that suggest relationships
INDICATOR	6.1.c.2.	construct, analyze, and interpret graphical displays of data
INDICATOR	6.1.c.3.	compare and contrast data collected by different groups and discuss similarities and differences in findings
INDICATOR	6.1.c.4.	use data to evaluate and refine design solutions

STRAND / TOPIC		**Grade Six – Our world; our responsibility**

STANDARD / STRAND	**6.1.**	**The student will demonstrate an understanding of scientific and engineering practices by:**
INDICATOR / STANDARD	**6.1.d.**	**constructing and critiquing conclusions and explanations**
INDICATOR	6.1.d.3.	generate and compare multiple solutions to problems based on how well they meet the criteria and constraints
STRAND / TOPIC		**Grade Six – Our world; our responsibility**
STANDARD / STRAND	**6.1.**	**The student will demonstrate an understanding of scientific and engineering practices by:**
INDICATOR / STANDARD	**6.1.e.**	**developing and using models**
INDICATOR	6.1.e.2.	use, develop, and revise models to predict and explain phenomena
INDICATOR	6.1.e.3.	evaluate limitations of models
STRAND / TOPIC		**Grade Six – Our world; our responsibility**
STANDARD / STRAND	**6.1.**	**The student will demonstrate an understanding of scientific and engineering practices by:**
INDICATOR / STANDARD	**6.1.f.**	**obtaining, evaluating, and communicating information**
INDICATOR	6.1.f.1.	read scientific texts, including those adapted for classroom use, to obtain scientific and/or technical information
STRAND / TOPIC		**Grade Six – Our world; our responsibility**
STANDARD / STRAND	**6.6.**	**The student will investigate and understand that water has unique physical properties and has a role in the natural and human-made environment. Key ideas include:**
INDICATOR / STANDARD	6.6.f.	water is important for agriculture, power generation, and public health.
STRAND / TOPIC		**Grade Six – Our world; our responsibility**
STANDARD / STRAND	**6.9.**	**The student will investigate and understand that humans impact the environment and individuals can influence public policy decisions related to energy and the environment. Key ideas include:**
INDICATOR / STANDARD	6.9.a.	natural resources are important to protect and maintain;
INDICATOR / STANDARD	6.9.e.	preventive measures can protect land-use and reduce environmental hazards;
INDICATOR / STANDARD	6.9.f.	there are cost/benefit tradeoffs in conservation policies.

STRAND / TOPIC	**VA.CS.**	**Computer Science**
STANDARD / STRAND		**Algorithms and Programming**
INDICATOR / STANDARD	**5.1.**	**The student will construct sets of step-by-step instructions (algorithms) both independently and collaboratively,**
INDICATOR	5.1.a.	Using sequencing.

STRAND / TOPIC	**VA.CS.**	**Computer Science**
STANDARD / STRAND		**Algorithms and Programming**
INDICATOR / STANDARD	**5.2.**	**The student will construct programs to accomplish a task as a means of creative expression using a block or text based programming language, both independently and collaboratively**
INDICATOR	5.2.a.	Using sequencing.

STRAND / TOPIC	**VA.CS.**	**Computer Science**
STANDARD / STRAND		**Algorithms and Programming**
INDICATOR / STANDARD	5.3.	The student will analyze, correct, and improve (debug) an algorithm that includes sequencing, events, loops, conditionals, and variables. [Related SOL areas - Math: Problem Solving, English: Editing]

STRAND / TOPIC	**VA.CS.**	**Computer Science**
STANDARD / STRAND		**Data and Analysis**
INDICATOR / STANDARD	5.11.	The student will answer a question by using a computer to manipulate data in order for the student to draw conclusions and make predictions. [Related SOL: Math 5.16, 5.17, VS.1c and j]

Grade **5** - 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.i.	Students use digital resources and tools to explore real-world issues and problems and collaborate with others to find answers or 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.i.	With guidance from an educator, students use appropriate technologies to explore and practice how a design process works to generate ideas, consider solutions, plan to solve a problem, or create innovative products that are shared with others.

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.i.	With guidance from an educator, students select and use appropriate technologies to plan and manage a design process.

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.i.	With guidance from an educator, students use appropriate technologies in a cyclical design process to develop prototypes and reflect on the role of trial and error.

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.i.	With guidance from an educator, students demonstrate perseverance when working with open-ended problem.

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.i.	With guidance from an educator, students create, identify, explore, and solve problems by selecting technology-assisted methods such as data analysis, modeling, and 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.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.i.	Students break down problems into smaller parts, identify key information, and propose solutions 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.i.	Students use appropriate technologies to create original works and learn strategies for remixing other digital works to create new digital works.

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.C.**	**Communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models, or simulations.**
PROGRESS INDICATOR	CC.C.i.	Students create digital works to communicate ideas visually and graphically.

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.i.	Students use collaborative technologies to work with others to understand problems and investigate solutions to local and global issues.

Technology Education

Grade **6** - 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 **5** - Adopted: **2010**

CONTENT STANDARD / STRAND / DISCIPLINE	**DC.CC.5.MP.**	**Mathematical Practices**
STANDARD / ESSENTIAL SKILL	5.MP.1.	Make sense of problems and persevere in solving them.
STANDARD / ESSENTIAL SKILL	5.MP.2.	Reason abstractly and quantitatively.
STANDARD / ESSENTIAL SKILL	5.MP.3.	Construct viable arguments and critique the reasoning of others.
STANDARD / ESSENTIAL SKILL	5.MP.4.	Model with mathematics.
STANDARD / ESSENTIAL SKILL	5.MP.5.	Use appropriate tools strategically.
STANDARD / ESSENTIAL SKILL	5.MP.7.	Look for and make use of structure.

Washington DC Academic Standards

Mathematics

Grade **6** - Adopted: **2010**

CONTENT STANDARD / STRAND / DISCIPLINE	**DC.CC.6.MP.**	**Mathematical Practices**

STANDARD / ESSENTIAL SKILL	6.MP.1.	Make sense of problems and persevere in solving them.
STANDARD / ESSENTIAL SKILL	6.MP.2.	Reason abstractly and quantitatively.
STANDARD / ESSENTIAL SKILL	6.MP.3.	Construct viable arguments and critique the reasoning of others.
STANDARD / ESSENTIAL SKILL	6.MP.4.	Model with mathematics.
STANDARD / ESSENTIAL SKILL	6.MP.5.	Use appropriate tools strategically.
STANDARD / ESSENTIAL SKILL	6.MP.7.	Look for and make use of structure.

CONTENT STANDARD / STRAND / DISCIPLINE	**DC.CC.6.RP.**	**Ratios and Proportional Relationships**
STANDARD / ESSENTIAL SKILL		**Understand ratio concepts and use ratio reasoning to solve problems.**
STUDENT EXPECTATION / ESSENTIAL SKILL	**6.RP.3.**	**Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.**
EXPECTATION	6.RP.3.a.	Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.

CONTENT STANDARD / STRAND / DISCIPLINE	**DC.CC.6.EE.**	**Expressions and Equations**
STANDARD / ESSENTIAL SKILL		**Reason about and solve one-variable equations and inequalities.**
STUDENT EXPECTATION / ESSENTIAL SKILL	6.EE.5.	Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.

CONTENT STANDARD / STRAND / DISCIPLINE	**DC.5-LS.**	**LIFE SCIENCE**
STANDARD / ESSENTIAL SKILL	**5-LS1.**	**From Molecules to Organisms: Structures and Processes**
STUDENT EXPECTATION / ESSENTIAL SKILL		**Students who demonstrate understanding can:**
EXPECTATION	5-LS1-1.	Support an argument that plants get the materials they need for growth chiefly from air and water.

CONTENT STANDARD / STRAND / DISCIPLINE	**DC.5-ESS.**	**EARTH AND SPACE SCIENCE**
STANDARD / ESSENTIAL SKILL	**5-ESS3.**	**Earth and Human Activity**
STUDENT EXPECTATION / ESSENTIAL SKILL		**Students who demonstrate understanding can:**
EXPECTATION	5-ESS3-1.	Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.

CONTENT STANDARD / STRAND / DISCIPLINE	**DC.3-5-ETS.**	**ENGINEERING DESIGN**
STANDARD / ESSENTIAL SKILL	**3-5-ETS1.**	**Engineering Design**
STUDENT EXPECTATION / ESSENTIAL SKILL		**Students who demonstrate understanding can:**
EXPECTATION	3-5-ETS1-1.	Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
EXPECTATION	3-5-ETS1-2.	Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
EXPECTATION	3-5-ETS1-3.	Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

Washington DC Academic Standards

Science

Grade **6** - 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.
CONTENT STANDARD / STRAND / DISCIPLINE	**DC.MS-ETS.**	**ENGINEERING DESIGN**
STANDARD / ESSENTIAL SKILL	**MS-ETS1.**	**Engineering Design**
STUDENT EXPECTATION / ESSENTIAL SKILL		**Students who demonstrate understanding can:**
EXPECTATION	MS-ETS1-1.	Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.
EXPECTATION	MS-ETS1-2.	Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.
EXPECTATION	MS-ETS1-4.	Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.

Grade **6** - 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.
STUDENT EXPECTATION / ESSENTIAL SKILL	6-8.RST.3.	Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.
CONTENT STANDARD / STRAND / DISCIPLINE	**DC.6-8.RST.**	**Reading Standards for Literacy in Science and Technical Subjects**
STANDARD / ESSENTIAL SKILL		**Craft and Structure**
STUDENT EXPECTATION / ESSENTIAL SKILL	6-8.RST.4.	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6-8 texts and topics.
STUDENT EXPECTATION / ESSENTIAL SKILL	6-8.RST.5.	Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to an understanding of the topic.
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.7.	Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).
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.

CONTENT STANDARD / STRAND / DISCIPLINE	**DC.6-8.WHST.**	**Writing Standards for Literacy in Science and Technical Subjects**
STANDARD / ESSENTIAL SKILL		**Text Types and Purposes**
STUDENT EXPECTATION / ESSENTIAL SKILL	**6-8.WHST.2.**	**Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.**
EXPECTATION	6-8.WHST.2.d.	Use precise language and domain-specific vocabulary to inform about or explain the topic.

CONTENT STANDARD / STRAND / DISCIPLINE	**DC.6-8.WHST.**	**Writing Standards for Literacy in Science and Technical Subjects**
STANDARD / ESSENTIAL SKILL		**Production and Distribution of Writing**
STUDENT EXPECTATION / ESSENTIAL SKILL	6-8.WHST.4.	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
STUDENT EXPECTATION / ESSENTIAL SKILL	6-8.WHST.6.	Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas clearly and efficiently.

Washington State K-12 Learning Standards and Guidelines

Mathematics

Grade **5** - 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.5.	Use appropriate tools strategically.
BIG IDEA / CORE CONTENT	MP.7.	Look for and make use of structure.

Washington State K-12 Learning Standards and Guidelines

Mathematics

Grade **6** - 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.5.	Use appropriate tools strategically.
BIG IDEA / CORE CONTENT	MP.7.	Look for and make use of structure.

EALR	WA.6.RP.	Ratios and Proportional Relationships
BIG IDEA / CORE CONTENT		**Understand ratio concepts and use ratio reasoning to solve problems.**
CORE CONTENT / CONTENT STANDARD	**6.RP.3.**	**Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.**
CONTENT STANDARD / PERFORMANCE EXPECTATION	6.RP.3(a)	Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.

EALR	WA.6.EE.	Expressions and Equations
BIG IDEA / CORE CONTENT		**Reason about and solve one-variable equations and inequalities.**

CORE CONTENT / CONTENT STANDARD	6.EE.5.	Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.

Washington State K-12 Learning Standards and Guidelines

Science

Grade **5** - Adopted: **2014**

EALR	WA.5-LS.	LIFE SCIENCE
BIG IDEA / CORE CONTENT	**5-LS1.**	**From Molecules to Organisms: Structures and Processes**
CORE CONTENT / CONTENT STANDARD		**Students who demonstrate understanding can:**
CONTENT STANDARD / PERFORMANCE EXPECTATION	5-LS1-1.	Support an argument that plants get the materials they need for growth chiefly from air and water.

EALR	WA.5-ESS.	EARTH AND SPACE SCIENCE
BIG IDEA / CORE CONTENT	**5-ESS3.**	**Earth and Human Activity**
CORE CONTENT / CONTENT STANDARD		**Students who demonstrate understanding can:**
CONTENT STANDARD / PERFORMANCE EXPECTATION	5-ESS3-1.	Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.

EALR	WA.3-5-ETS.	ENGINEERING DESIGN
BIG IDEA / CORE CONTENT	**3-5-ETS1.**	**Engineering Design**
CORE CONTENT / CONTENT STANDARD		**Students who demonstrate understanding can:**
CONTENT STANDARD / PERFORMANCE EXPECTATION	3-5-ETS1-1.	Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
CONTENT STANDARD / PERFORMANCE EXPECTATION	3-5-ETS1-2.	Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

CONTENT STANDARD / PERFORMANCE EXPECTATION	3-5-ETS1-3.	Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

Washington State K-12 Learning Standards and Guidelines

Science

Grade **6** - 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.

EALR	WA.MS-ETS.	ENGINEERING DESIGN
BIG IDEA / CORE CONTENT	**MS-ETS1.**	**Engineering Design**
CORE CONTENT / CONTENT STANDARD		**Students who demonstrate understanding can:**
CONTENT STANDARD / PERFORMANCE EXPECTATION	MS-ETS1-1.	Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.

CONTENT STANDARD / PERFORMANCE EXPECTATION	MS-ETS1-2.	Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.
CONTENT STANDARD / PERFORMANCE EXPECTATION	MS-ETS1-4.	Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.

Grade **6** - 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.
CORE CONTENT / CONTENT STANDARD	RST.6-8.3.	Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.

EALR	WA.RST.6-8.	Reading Standards for Literacy in Science and Technical Subjects
BIG IDEA / CORE CONTENT		**Craft and Structure**
CORE CONTENT / CONTENT STANDARD	RST.6-8.4.	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6-8 texts and topics.
CORE CONTENT / CONTENT STANDARD	RST.6-8.5.	Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to an understanding of the topic.

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.6-8.7.	Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).
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.

EALR	WA.WHST.6-8.	Writing Standards for Literacy in Science and Technical Subjects
BIG IDEA / CORE CONTENT		**Text Types and Purposes**
CORE CONTENT / CONTENT STANDARD	**WHST.6-8.2.**	**Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.**
CONTENT STANDARD / PERFORMANCE EXPECTATION	WHST.6-8.2(d)	Use precise language and domain-specific vocabulary to inform about or explain the topic.

EALR	WA.WHST.6-8.	Writing Standards for Literacy in Science and Technical Subjects
BIG IDEA / CORE CONTENT		**Production and Distribution of Writing**
CORE CONTENT / CONTENT STANDARD	WHST.6-8.4.	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
CORE CONTENT / CONTENT STANDARD	WHST.6-8.6.	Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas clearly and efficiently.

Washington State K-12 Learning Standards and Guidelines

Technology Education

Grade **5** - Adopted: **2018**

EALR	WA.ET.3-5.	Educational Technology Learning Standards
BIG IDEA / CORE CONTENT	**3-5.4.**	**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	3-5.4.b.	Students use digital and non-digital tools to plan and manage a design process.

EALR	WA.ET.3-5.	Educational Technology Learning Standards

BIG IDEA / CORE CONTENT	**3-5.5.**	**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	3-5.5.a.	Students explore or solve problems by selecting technology for data analysis, modeling and algorithmic thinking, with guidance from an educator.
CORE CONTENT / CONTENT STANDARD	3-5.5.d.	Students understand and explore basic concepts related to automation, patterns and algorithmic thinking.

EALR		**Computer Science**
BIG IDEA / CORE CONTENT		**Level 1B: 3-5**
CORE CONTENT / CONTENT STANDARD	**1B-CS.**	**Computing Systems**
CONTENT STANDARD / PERFORMANCE EXPECTATION	1B-CS-03.	Determine potential solutions to solve simple hardware and software problems using common troubleshooting strategies. (P. 6.2)

EALR		**Computer Science**
BIG IDEA / CORE CONTENT		**Level 1B: 3-5**
CORE CONTENT / CONTENT STANDARD	**1B-AP.**	**Algorithms and Programming**
CONTENT STANDARD / PERFORMANCE EXPECTATION	1B-AP-08.	Compare and refine multiple algorithms for the same task and determine which is the most appropriate. (P. 6.3, P. 3.3)
CONTENT STANDARD / PERFORMANCE EXPECTATION	1B-AP-11.	Decompose (break down) problems into smaller, manageable subproblems to facilitate the program development process. (P. 3.2)
CONTENT STANDARD / PERFORMANCE EXPECTATION	1B-AP-12.	Modify, remix, or incorporate portions of an existing program into one's own work, to develop something new or add more advanced features. (P. 5.3)
CONTENT STANDARD / PERFORMANCE EXPECTATION	1B-AP-13.	Use an iterative process to plan the development of a program by including others' perspectives and considering user preferences. (P. 1.1, P. 5.1)

CONTENT STANDARD / PERFORMANCE EXPECTATION	1B-AP-15.	Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended. (P. 6.1, P. 6.2)

EALR		**Computer Science**
BIG IDEA / CORE CONTENT		**Level 1B: 3-5**
CORE CONTENT / CONTENT STANDARD	**1B-IC.**	**Impacts of Computing**

CONTENT STANDARD / PERFORMANCE EXPECTATION	1B-IC-19.	Brainstorm ways to improve the accessibility and usability of technology products for the diverse needs and wants of users. (P. 1.2)

Washington State K-12 Learning Standards and Guidelines

Technology Education

Grade **6** - 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)

Grade **5** - 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	MHM5.	Use appropriate tools strategically.
CONTENT STANDARD / OBJECTIVE	MHM7.	Look for and make use of structure.

West Virginia College and Career Readiness Standards

Mathematics

Grade **6** - 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	MHM5.	Use appropriate tools strategically.

CONTENT STANDARD / OBJECTIVE	MHM7.	Look for and make use of structure.

CONTENT STANDARD / COURSE	**WV.M.6.RPP.**	**Ratios and Proportional Relationships**
CONTENT STANDARD / OBJECTIVE		**Understand ratio concepts and use ratio reasoning to solve problems.**
OBJECTIVE / EXPECTATION	**M.6.3.**	**Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.**
GRADE LEVEL EXPECTATION	M.6.3.a.	Make tables of equivalent ratios relating quantities with whole number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.

CONTENT STANDARD / COURSE	**WV.M.6.EE.**	**Expressions and Equations**
CONTENT STANDARD / OBJECTIVE		**Reason about and solve one-variable equations and inequalities.**
OBJECTIVE / EXPECTATION	M.6.16.	Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.

West Virginia College and Career Readiness Standards

Science

Grade **5** - Adopted: **2021**

CONTENT STANDARD / COURSE		**Science Indicators Grades 3-5**
CONTENT STANDARD / OBJECTIVE		**College- and Career-Readiness Indicators for Science**
OBJECTIVE / EXPECTATION		**Nature of Science**
GRADE LEVEL EXPECTATION		Scientific knowledge is obtained through a combination of observations of the natural world and inferences based on those observations.

CONTENT STANDARD / COURSE		**Science Indicators Grades 3-5**
CONTENT STANDARD / OBJECTIVE		**College- and Career-Readiness Indicators for Science**
OBJECTIVE / EXPECTATION		**Practices of Scientists and Engineers**
GRADE LEVEL EXPECTATION		Developing and using models
GRADE LEVEL EXPECTATION		Planning and carrying out investigations

GRADE LEVEL EXPECTATION		Analyzing and interpreting data
GRADE LEVEL EXPECTATION		Constructing explanations and designing solutions
GRADE LEVEL EXPECTATION		Obtaining, evaluating, and communicating information
CONTENT STANDARD / COURSE		**Science Indicators Grades 3-5**
CONTENT STANDARD / OBJECTIVE		**College- and Career-Readiness Indicators for Science**
OBJECTIVE / EXPECTATION		**Science Connecting Concepts**
GRADE LEVEL EXPECTATION		Investigating and explaining cause and effect
CONTENT STANDARD / COURSE		**Science Indicators Grades 3-5**
CONTENT STANDARD / OBJECTIVE		**College- and Career-Readiness Indicators for Science**
OBJECTIVE / EXPECTATION		**Science Literacy**
GRADE LEVEL EXPECTATION		Utilizing and connecting ideas among informational (factual) scientific texts
GRADE LEVEL EXPECTATION		Integrating and applying information presented in various media formats when writing and speaking
GRADE LEVEL EXPECTATION		Comparing and contrasting sets of data
GRADE LEVEL EXPECTATION		Building and appropriately using science domain vocabulary and phrases
GRADE LEVEL EXPECTATION		Interpreting and applying visually expressed information (e.g., flowchart, diagram, model, graph, or table)
CONTENT STANDARD / COURSE		**Science – Grade 5**
CONTENT STANDARD / OBJECTIVE		**Life Science**
OBJECTIVE / EXPECTATION		**Matter and Energy in Organisms and Ecosystems**

GRADE LEVEL EXPECTATION	S.5.5.	Support an argument that plants get the materials they need for growth chiefly from air and water.

CONTENT STANDARD / COURSE		**Science – Grade 5**
CONTENT STANDARD / OBJECTIVE		**Earth and Space Science**
OBJECTIVE / EXPECTATION		**Earth's Systems**
GRADE LEVEL EXPECTATION	S.5.9.	Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.

CONTENT STANDARD / COURSE		**Science – Grade 5**
CONTENT STANDARD / OBJECTIVE		**Engineering, Technology, and Applications of Science**
OBJECTIVE / EXPECTATION		**Engineering Design**
GRADE LEVEL EXPECTATION	S.5.15.	Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
GRADE LEVEL EXPECTATION	S.5.16.	Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
GRADE LEVEL EXPECTATION	S.5.17.	Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

West Virginia College and Career Readiness Standards

Science

Grade **6** - Adopted: **2021**

CONTENT STANDARD / COURSE		**Science Indicators Grades 6-8**
CONTENT STANDARD / OBJECTIVE		**College- and Career-Readiness Indicators for Science**
OBJECTIVE / EXPECTATION		**Nature of Science**
GRADE LEVEL EXPECTATION		Scientific knowledge is obtained through a combination of observations of the natural world and inferences based on those observations.

CONTENT STANDARD / COURSE		**Science Indicators Grades 6-8**
CONTENT STANDARD / OBJECTIVE		**College- and Career-Readiness Indicators for Science**
OBJECTIVE / EXPECTATION		**Practices of Scientists and Engineers**

GRADE LEVEL EXPECTATION		Developing and using models
GRADE LEVEL EXPECTATION		Planning and carrying out investigations
GRADE LEVEL EXPECTATION		Analyzing and interpreting data
GRADE LEVEL EXPECTATION		Constructing explanations and designing solutions
GRADE LEVEL EXPECTATION		Obtaining, evaluating, and communicating information
CONTENT STANDARD / COURSE		**Science Indicators Grades 6-8**
CONTENT STANDARD / OBJECTIVE		**College- and Career-Readiness Indicators for Science**
OBJECTIVE / EXPECTATION		**Science Connecting Concepts**
GRADE LEVEL EXPECTATION		Investigating and explaining cause and effect
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		Correctly utilizing and explaining visually expressed information (e.g., flowchart, diagram, model, graph, table, or digital mapping technology) in a science narrative.
GRADE LEVEL EXPECTATION		Appropriately using technical terminology or scientific concepts and processes to create visually expressed information
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 6**
CONTENT STANDARD / OBJECTIVE		**LIFE Science**
OBJECTIVE / EXPECTATION		**Interdependent Relationships in Ecosystems**

GRADE LEVEL EXPECTATION	S.6.2.	Evaluate competing design solutions for maintaining biodiversity and ecosystem services.

CONTENT STANDARD / COURSE		**Science – Grade 6**
CONTENT STANDARD / OBJECTIVE		**PHYSICAL Science**
OBJECTIVE / EXPECTATION		**Waves and Electromagnetic Radiation**
GRADE LEVEL EXPECTATION	S.6.12.	Integrate qualitative scientific and technical information to support the claim that digitized signals are a more reliable way to encode and transmit information than analog signals.

CONTENT STANDARD / COURSE		**Science – Grade 6**
CONTENT STANDARD / OBJECTIVE		**Engineering, Technology, and Applications of Science**
OBJECTIVE / EXPECTATION		**Engineering Design**
GRADE LEVEL EXPECTATION	S.6.20.	Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution.

West Virginia College and Career Readiness Standards

Technology Education

Grade **5** - Adopted: **2019**

CONTENT STANDARD / COURSE	**2520.14.**	**West Virginia College- and Career-Readiness Standards for Technology and Computer Science**
CONTENT STANDARD / OBJECTIVE		**Technology 3-5**
OBJECTIVE / EXPECTATION		**Innovative Designer**
GRADE LEVEL EXPECTATION	T.3-5.13.	With support and guidance, select appropriate technology tools to solve problems and communicate information.

CONTENT STANDARD / COURSE	**2520.14.**	**West Virginia College- and Career-Readiness Standards for Technology and Computer Science**
CONTENT STANDARD / OBJECTIVE		**Computer Science 3-5**
OBJECTIVE / EXPECTATION		**Computer Systems and Computational Thinking**
GRADE LEVEL EXPECTATION	CS.3-5.1.	Verbalize the steps to solve a problem.

GRADE LEVEL EXPECTATION	CS.3-5.2.	Work together in a team to solve a problem.

West Virginia College and Career Readiness Standards

Technology Education

Grade **6** - 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 **5** - 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 5:	Use appropriate tools strategically.
CONTENT STANDARD	Math Practice 7:	Look for and make use of structure.

Wisconsin Academic Standards

Mathematics

Grade **6** - 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 5:	Use appropriate tools strategically.
CONTENT STANDARD	Math Practice 7:	Look for and make use of structure.

DOMAIN		Grade 6 Content Standards
CONTENT STANDARD	**M.6.RP.**	**Ratios and Proportional Relationships (6.RP)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**M.6.RP.A.**	**Understand ratio concepts and use ratio reasoning to solve problems. (M)**
DESCRIPTOR / FOCUS AREA	**M.6.RP.A.3.**	**Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number lines, or equations.**
LEARNING CONTINUUM	M.6.RP.A.3.a.	Make tables of equivalent ratios relating quantities with whole number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.

DOMAIN		Grade 6 Content Standards
CONTENT STANDARD	**M.6.EE.**	**The Expressions and Equations (6.EE)**

PERFORMANCE STANDARD / LEARNING PRIORITY	**M.6.EE.B.**	**Reason about and solve one-variable equations and inequalities.**
DESCRIPTOR / FOCUS AREA	M.6.EE.B.5.	Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.

Wisconsin Academic Standards

Science

Grade **5** - Adopted: **2017**

DOMAIN	**WI.SCI.**	**Science**
CONTENT STANDARD	**SCI.CC.**	**Crosscutting Concepts (CC)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**SCI.CC2.**	**Students use science and engineering practices, disciplinary core ideas, and cause and effect relationships to make sense of phenomena and solve problems.**
DESCRIPTOR / FOCUS AREA		**Cause and Effect**
LEARNING CONTINUUM	SCI.CC2.3-5.	Students routinely identify and test causal relationships and use these relationships to explain change. They understand events that occur together with regularity may or may not signify a cause and effect relationship.

DOMAIN	**WI.SCI.**	**Science**
CONTENT STANDARD	**SCI.SEP.**	**Science and Engineering Practices (SEP)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**SCI.SEP2.**	**Students develop and use models, in conjunction with using crosscutting concepts and disciplinary core ideas, to make sense of phenomena and solve problems.**
DESCRIPTOR / FOCUS AREA	**SCI.SEP2.A.**	**Developing Models – Students build and revise simple models and use models to represent events and design solutions. This includes the following:**
LEARNING CONTINUUM	SCI.SEP2.A.3-5.1.	Identify limitations of models.
LEARNING CONTINUUM	SCI.SEP2.A.3-5.5.	Develop a diagram or simple physical prototype to convey a proposed object, tool, or process.

DOMAIN	**WI.SCI.**	**Science**
CONTENT STANDARD	**SCI.SEP.**	**Science and Engineering Practices (SEP)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**SCI.SEP3.**	**Students plan and carry out investigations, in conjunction with using crosscutting concepts and disciplinary core ideas, to make sense of phenomena and solve problems.**
DESCRIPTOR / FOCUS AREA	**SCI.SEP3.A.**	**Planning and Conducting Investigations – Students plan and carry out investigations that control variables and provide evidence to support explanations or design solutions. This includes the following:**
LEARNING CONTINUUM	SCI.SEP3.A.3-5.2.	Evaluate appropriate methods and tools for collecting data.

DOMAIN	**WI.SCI.**	**Science**

CONTENT STANDARD	**SCI.SEP.**	**Science and Engineering Practices (SEP)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**SCI.SEP 4.**	**Students analyze and interpret data, in conjunction with using crosscutting concepts and disciplinary core ideas, to make sense of phenomena and solve problems.**
DESCRIPTOR / FOCUS AREA	**SCI.SEP 4.A.**	**Analyze and Interpret Data – Students begin to use quantitative approaches to collect data and conduct multiple trials of qualitative observations. (When possible, digital tools should be used.) This includes the following:**
LEARNING CONTINUUM	SCI.SEP 4.A.3-5.1.	Represent data in tables or various graphical displays (bar graphs, pictographs, and pie charts) to reveal patterns that indicate relationships.
LEARNING CONTINUUM	SCI.SEP 4.A.3-5.2.	Analyze and interpret data to make sense of phenomena, using logical reasoning, mathematics, or computation.
LEARNING CONTINUUM	SCI.SEP 4.A.3-5.3.	Compare and contrast data collected by different groups in order to discuss similarities and differences in their findings.
LEARNING CONTINUUM	SCI.SEP 4.A.3-5.4.	Analyze data to refine a problem statement or the design of a proposed object, tool, or process.
LEARNING CONTINUUM	SCI.SEP 4.A.3-5.5.	Use data to evaluate and refine design solutions.

DOMAIN	**WI.SCI.**	**Science**
CONTENT STANDARD	**SCI.SEP.**	**Science and Engineering Practices (SEP)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**SCI.SEP 5.**	**Students use mathematics and computational thinking, in conjunction with using crosscutting concepts and disciplinary core ideas, to make sense of phenomena and solve problems.**
DESCRIPTOR / FOCUS AREA	**SCI.SEP 5.A.**	**Qualitative and Quantitative Data – Students extend quantitative measurements to a variety of physical properties, using computation and mathematics to analyze data and compare alternative design solutions. This includes the following:**
LEARNING CONTINUUM	SCI.SEP 5.A.3-5.1.	Organize simple data sets to reveal patterns that suggest relationships.
LEARNING CONTINUUM	SCI.SEP 5.A.3-5.2.	Describe, measure, estimate, and/or graph quantities such as area, volume, weight, and time to address scientific and engineering questions and problems.
LEARNING CONTINUUM	SCI.SEP 5.A.3-5.3.	Create and use graphs or charts generated from simple algorithms to compare alternative solutions to an engineering problem.

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 use evidence to construct explanations that specify variables which describe and predict phenomena. This includes the following:**

LEARNING CONTINUUM	SCI.SEP 6.A.3-5.1.	Construct an explanation of observed relationships (e.g., the distribution of plants in the back yard).
LEARNING CONTINUUM	SCI.SEP 6.A.3-5.2.	Use evidence (e.g., measurements, observations, patterns) to construct or support an explanation.
LEARNING CONTINUUM	SCI.SEP 6.A.3-5.3.	Identify the evidence that supports particular points in an explanation.

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.B.**	**Design Solutions – Students use evidence to create multiple solutions to design problems. This includes the following:**
LEARNING CONTINUUM	SCI.SEP 6.B.3-5.1.	Apply scientific ideas to solve design problems.
LEARNING CONTINUUM	SCI.SEP 6.B.3-5.2.	Generate multiple solutions to a problem and compare how well they meet the criteria and constraints.

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 accuracy of ideas and methods. This includes the following:**
LEARNING CONTINUUM	SCI.SEP 8.A.3-5.1.	Read and comprehend grade-appropriate complex texts and other reliable media to summarize and obtain scientific and technical ideas, and describe how they are supported by evidence.
LEARNING CONTINUUM	SCI.SEP 8.A.3-5.5.	Communicate scientific and technical information orally or in written formats, including various forms of media, which may include tables, diagrams, and charts.

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.5.	Societal activities have had major effects on the land, ocean, atmosphere, and even outer space. Societal activities can also help protect Earth's resources and environments.

DOMAIN	WI.SCI.	Science
CONTENT STANDARD	SCI.ETS.	Disciplinary Core Idea: Engineering, Technology, and the Application of Science (ETS)
PERFORMANCE STANDARD / LEARNING PRIORITY	SCI.ETS1.	Students use science and engineering practices, crosscutting concepts, and an understanding of engineering design to make sense of phenomena and solve problems.
DESCRIPTOR / FOCUS AREA	SCI.ETS1.A.	Defining and Delimiting Engineering Problems
LEARNING CONTINUUM	SCI.ETS1.A.3-5.	Possible solutions to a problem are limited by available materials and resources (constraints). The success of a designed solution is determined by considering the desired features of a solution (criteria). Different proposals for solutions can be compared on the basis of how well each one meets the specified criteria for success or how well each takes the constraints into account.

DOMAIN	WI.SCI.	Science
CONTENT STANDARD	SCI.ETS.	Disciplinary Core Idea: Engineering, Technology, and the Application of Science (ETS)
PERFORMANCE STANDARD / LEARNING PRIORITY	SCI.ETS1.	Students use science and engineering practices, crosscutting concepts, and an understanding of engineering design to make sense of phenomena and solve problems.
DESCRIPTOR / FOCUS AREA	SCI.ETS1.B.	Developing Possible Solutions
LEARNING CONTINUUM	SCI.ETS1.B.3-5.1.	Research on a problem should be carried out before beginning to design a solution. Testing a solution involves investigating how well it performs under a range of likely conditions.
LEARNING CONTINUUM	SCI.ETS1.B.3-5.3.	Tests are often designed to identify failure points or difficulties, which suggest the elements of the design that need to be improved.

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.A.	Interdependence of Science, Engineering, and Technology
LEARNING CONTINUUM	SCI.ETS2.A.3-5.1.	Science and technology support each other.
LEARNING CONTINUUM	SCI.ETS2.A.3-5.2.	Tools and instruments are used to answer scientific questions, while scientific discoveries lead to the development of new technologies.

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.ETS 2.B.**	**Influence of Engineering, Technology, and Science on Society and the Natural World**
LEARNING CONTINUUM	SCI.ETS2 .B.3-5.1.	People's needs and wants change over time, as do their demands for new and improved technologies.
LEARNING CONTINUUM	SCI.ETS2 .B.3-5.2.	Engineers improve existing technologies or develop new ones to increase their benefits, decrease known risks, and meet societal demands.
LEARNING CONTINUUM	SCI.ETS2 .B.3-5.3.	When new technologies become available, they can bring about changes in the way people live and interact with one another.

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.3-5.3.	Science and engineering affect everyday life.

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.B.**	**Science and Engineering Are Unique Ways of Thinking with Different Purposes**
LEARNING CONTINUUM	SCI.ETS3 .B.3-5.4.	Engineering solutions often have drawbacks as well as benefits.

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.C.**	**Science and Engineering Use Multiple Approaches to Create New Knowledge and Solve Problems**
LEARNING CONTINUUM	SCI.ETS3 .C.3-5.1.	The products of science and engineering are not developed through one set "scientific method" or "engineering design process." Instead, they use a variety of approaches described in the Science and Engineering Practices.
LEARNING CONTINUUM	SCI.ETS3 .C.3-5.3.	There is no perfect design in engineering. Designs that are best in some ways (e.g. safety or ease of use) may be inferior in other ways (e.g. cost or aesthetics).

Science

Grade **6** - Adopted: **2017**

DOMAIN	WI.SCI.	Science
CONTENT STANDARD	**SCI.CC.**	**Crosscutting Concepts (CC)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**SCI.CC1.**	**Students use science and engineering practices, disciplinary core ideas, and patterns to make sense of phenomena and solve problems.**
DESCRIPTOR / FOCUS AREA		**Patterns**
LEARNING CONTINUUM	SCI.CC1.m.	Students recognize macroscopic patterns are related to the nature of microscopic and atomic-level structure. They identify patterns in rates of change and other numerical relationships that provide information about natural and human-designed systems. They use patterns to identify cause and effect relationships and use graphs and charts to identify patterns in data.

DOMAIN	WI.SCI.	Science
CONTENT STANDARD	**SCI.CC.**	**Crosscutting Concepts (CC)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**SCI.CC2.**	**Students use science and engineering practices, disciplinary core ideas, and cause and effect relationships to make sense of phenomena and solve problems.**
DESCRIPTOR / FOCUS AREA		**Cause and Effect**
LEARNING CONTINUUM	SCI.CC2.m.	Students classify relationships as causal or correlational, and recognize correlation does not necessarily imply causation. They use cause and effect relationships to predict phenomena in natural or designed systems. They also understand that phenomena may have more than one cause, and some cause and effect relationships in systems can only be explained using probability.

DOMAIN	WI.SCI.	Science
CONTENT STANDARD	**SCI.SEP.**	**Science and Engineering Practices (SEP)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**SCI.SEP2.**	**Students develop and use models, in conjunction with using crosscutting concepts and disciplinary core ideas, to make sense of phenomena and solve problems.**
DESCRIPTOR / FOCUS AREA	**SCI.SEP2.A.**	**Developing Models – Students develop, use, and revise models to describe, test, and predict more abstract phenomena and design systems. This includes the following:**
LEARNING CONTINUUM	SCI.SEP2.A.m.1.	Evaluate limitations of a model for a proposed object or tool.
LEARNING CONTINUUM	SCI.SEP2.A.m.2.	Develop or modify a model – based on evidence – to match what happens if a variable or component of a system is changed.
LEARNING CONTINUUM	SCI.SEP2.A.m.3.	Use and develop a model of simple systems with uncertain and less predictable factors.
LEARNING CONTINUUM	SCI.SEP2.A.m.4.	Develop and/or revise a model to show the relationships among variables, including those that are not observable but predict observable phenomena.

LEARNING CONTINUUM	SCI.SEP2.A.m.5.	Develop and use a model to predict and describe phenomena.
LEARNING CONTINUUM	SCI.SEP2.A.m.6.	Develop a model to describe unobservable mechanisms.
LEARNING CONTINUUM	SCI.SEP2.A.m.7.	Develop and use a model to generate data to test ideas about phenomena in natural or designed systems, including those representing inputs and outputs, and those at unobservable scales.

DOMAIN	WI.SCI.	Science
CONTENT STANDARD	**SCI.SEP.**	**Science and Engineering Practices (SEP)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**SCI.SEP 3.**	**Students plan and carry out investigations, in conjunction with using crosscutting concepts and disciplinary core ideas, to make sense of phenomena and solve problems.**
DESCRIPTOR / FOCUS AREA	**SCI.SEP 3.A.**	**Planning and Conducting Investigations – Students plan and carry out investigations that use multiple variables and provide evidence to support explanations or solutions. This includes the following:**
LEARNING CONTINUUM	SCI.SEP3.A.m.2.	Conduct an investigation. Evaluate and revise the experimental design to produce data that serve as the basis for evidence to meet the goals of the investigation.
LEARNING CONTINUUM	SCI.SEP3.A.m.4.	Collect data under a range of conditions that serve as the basis for evidence to answer scientific questions or test design solutions.
LEARNING CONTINUUM	SCI.SEP3.A.m.5.	Collect data about the performance of a proposed object, tool, process, or system under a range of conditions.

DOMAIN	WI.SCI.	Science
CONTENT STANDARD	**SCI.SEP.**	**Science and Engineering Practices (SEP)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**SCI.SEP 4.**	**Students analyze and interpret data, in conjunction with using crosscutting concepts and disciplinary core ideas, to make sense of phenomena and solve problems.**
DESCRIPTOR / FOCUS AREA	**SCI.SEP 4.A.**	**Analyze and Interpret Data – Students extend quantitative analysis to investigations, distinguishing between correlation and causation, and basic statistical techniques of data and error analysis. This includes the following:**
LEARNING CONTINUUM	SCI.SEP 4.A.m.1.	Construct, analyze, or interpret graphical displays of data and large data sets to identify linear and nonlinear relationships.
LEARNING CONTINUUM	SCI.SEP 4.A.m.2.	Use graphical displays (e.g., maps, charts, graphs, and tables) of large data sets to identify temporal and spatial relationships.
LEARNING CONTINUUM	SCI.SEP 4.A.m.3.	Distinguish between causal and correlational relationships in data.
LEARNING CONTINUUM	SCI.SEP 4.A.m.4.	Analyze and interpret data to provide evidence for explanations of phenomena.
LEARNING CONTINUUM	SCI.SEP 4.A.m.7.	Analyze and interpret data to determine similarities and differences in findings.

LEARNING CONTINUUM	SCI.SEP 4.A.m.8.	Analyze data to define an optimal operational range for a proposed object, tool, process, or system that best meets criteria for success.

DOMAIN	WI.SCI.	Science
CONTENT STANDARD	**SCI.SEP.**	**Science and Engineering Practices (SEP)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**SCI.SEP 5.**	**Students use mathematics and computational thinking, in conjunction with using crosscutting concepts and disciplinary core ideas, to make sense of phenomena and solve problems.**
DESCRIPTOR / FOCUS AREA	**SCI.SEP 5.A.**	**Qualitative and Quantitative Data – Students identify patterns in large data sets and use mathematical concepts to support explanations and arguments. This includes the following:**
LEARNING CONTINUUM	SCI.SEP 5.A.m.2.	Use digital tools (e.g., computers) to analyze very large data sets for patterns and trends.
LEARNING CONTINUUM	SCI.SEP 5.A.m.3.	Use mathematical representations to describe and support scientific conclusions and design solutions.
LEARNING CONTINUUM	SCI.SEP 5.A.m.4.	Create algorithms (a series of ordered steps) to solve a problem.
LEARNING CONTINUUM	SCI.SEP 5.A.m.6.	Use digital tools and mathematical concepts and arguments to test and compare proposed solutions to an engineering design problem.

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.1.	Construct an explanation that includes qualitative or quantitative relationships between variables that predict and describe phenomena.
LEARNING CONTINUUM	SCI.SEP 6.A.m.2.	Construct an explanation using models or representations.
LEARNING CONTINUUM	SCI.SEP 6.A.m.3.	Construct a scientific explanation based on valid and reliable evidence obtained from sources, including the students' own experiments. Solutions should build on the following assumption: theories and laws that describe the natural world operate today as they did in the past and will continue to do so in the future.
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.
LEARNING CONTINUUM	SCI.SEP 6.A.m.5.	Apply scientific reasoning to show why the data or evidence is adequate for the explanation.

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.B.**	**Design Solutions – Students design solutions supported by multiple sources of evidence consistent with scientific ideas, principles, and theories. This includes the following:**
LEARNING CONTINUUM	SCI.SEP 6.B.m.1.	Apply scientific ideas or principles to design, construct, and test a design of an object, tool, process, or system.
LEARNING CONTINUUM	SCI.SEP 6.B.m.2.	Undertake a design project, engaging in the design cycle, to construct and implement a solution that meets specific design criteria and constraints.
LEARNING CONTINUUM	SCI.SEP 6.B.m.3.	Optimize performance of a design by prioritizing criteria, making trade-offs, testing, revising, and retesting.

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).
LEARNING CONTINUUM	SCI.SEP 8.A.m.5.	Communicate scientific and technical information (e.g. about a proposed object, tool, process, or system) in writing and through oral presentations.

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 1.**	**Students use science and engineering practices, crosscutting concepts, and an understanding of engineering design to make sense of phenomena and solve problems.**

DESCRIPTOR / FOCUS AREA	**SCI.ETS 1.A.**	**Defining and Delimiting Engineering Problems**
LEARNING CONTINUUM	SCI.ETS1 .A.m.	The more precisely a design task's criteria and constraints can be defined, the more likely it is that the designed solution will be successful. Specification of constraints includes consideration of scientific principles and other relevant knowledge that are likely to limit possible solutions.

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 1.**	**Students use science and engineering practices, crosscutting concepts, and an understanding of engineering design to make sense of phenomena and solve problems.**
DESCRIPTOR / FOCUS AREA	**SCI.ETS 1.B.**	**Developing Possible Solutions**
LEARNING CONTINUUM	SCI.ETS1 .B.m.1.	A solution needs to be tested and then modified on the basis of the test results in order to improve it.
LEARNING CONTINUUM	SCI.ETS1 .B.m.2.	There are systematic processes for evaluating solutions with respect to how well they meet the criteria and constraints of a problem.
LEARNING CONTINUUM	SCI.ETS1 .B.m.3.	Sometimes parts of different solutions can be combined to create a solution that is better than any of its predecessors.
LEARNING CONTINUUM	SCI.ETS1 .B.m.4.	Models of all kinds are important for testing solutions.

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 1.**	**Students use science and engineering practices, crosscutting concepts, and an understanding of engineering design to make sense of phenomena and solve problems.**
DESCRIPTOR / FOCUS AREA	**SCI.ETS 1.C.**	**Optimizing the Design Solution**
LEARNING CONTINUUM	SCI.ETS1 .C.m.2.	The iterative process of testing the most promising solutions and modifying what is proposed on the basis of the test results leads to greater refinement and ultimately to an optimal solution.

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.A.**	**Interdependence of Science, Engineering, and Technology**
LEARNING CONTINUUM	SCI.ETS2 .A.m.1.	Engineering advances have led to important discoveries in virtually every field of science, and scientific discoveries have led to the development of entire industries and engineered systems.

LEARNING CONTINUUM	SCI.ETS2.A.m.2.	Science and technology drive each other forward.

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.2.	Scientists and engineers are persistent, use creativity, reasoning, and skepticism, and remain open to new ideas.
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.

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.C.	Science and Engineering Use Multiple Approaches to Create New Knowledge and Solve Problems
LEARNING CONTINUUM	SCI.ETS3.C.m.3.	Engineers develop solutions using multiple approaches and evaluate their solutions against criteria such as cost, safety, time and performance. This evaluation often involves trade-offs between constraints to find the optimal solution.

Wisconsin Academic Standards

Technology Education

Grade **5** - 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.4.i.	Construct and execute algorithms (sets of step-by-step instructions), which include sequencing, loops, and conditionals to accomplish a task, both independently and collaboratively, with or without a computing device.

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.3.i.	Construct programs in order to solve a problem or for creative expression, which include sequencing, events, loops, conditionals, parallelism and variables, using a block-based visual programming language or text based language, both independently and collaboratively (e.g., pair programming).

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.2.i.	Understand that algorithms have impacted society in both beneficial and harmful ways.
LEARNING CONTINUUM	CS.AP3.b.3.i.	Compare different problem solving techniques.

DOMAIN	**WI.CS.**	**Computer Science**
CONTENT STANDARD	**CS.AP.**	**Content Area: Algorithms and Programming (AP)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**CS.AP5.**	**Students will collaborate with diverse teams.**
DESCRIPTOR / FOCUS AREA	**CS.AP5.a.**	**Work together to solve computational problems using a variety of resources.**
LEARNING CONTINUUM	CS.AP5.a.4.i.	Understand there are many resources that can be used/tapped to solve a problem.

DOMAIN	**WI.CS.**	**Computer Science**
CONTENT STANDARD	**CS.AP.**	**Content Area: Algorithms and Programming (AP)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**CS.AP6.**	**Students will test and refine computational solutions.**
DESCRIPTOR / FOCUS AREA	**CS.AP6.b.**	**Develop and apply success criteria.**
LEARNING CONTINUUM	CS.AP6.b.1.i.	Determine the correctness of a computational problem solution by listening to a classmate describe the solution.

DOMAIN	**WI.CS.**	**Computer Science**
CONTENT STANDARD	**CS.CS.**	**Content Area: Computing Systems (CS)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**CS.CS2.**	**Students will test and refine computing systems.**
DESCRIPTOR / FOCUS AREA	**CS.CS2.a.**	**Problem solve and debug.**
LEARNING CONTINUUM	CS.CS2.a.2.i.	Identify, using accurate terminology, simple hardware and software problems that may occur during use, and apply strategies for solving problems (e.g., reboot device, check for power, check network availability, close and reopen app).

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.4.i.	Connect learning to age-appropriate real-world issues and problems and begin to develop questions 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.a.	Find authentic problems in local and global contexts.

LEARNING CONTINUUM	ITL.ID1.a.2.i.	Identify and describe problems or challenges that affect the community. Analyze all conditions that make it a problem.

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.2.i.	Demonstrate perseverance when working with authentic, open-ended problems.

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.2.i.	Explore and practice how a deliberate design process works to generate ideas, considers solutions, plans to solve a problem, and creates innovative products to share with others.

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.c.	Develop, test, and refine prototypes as part of a cyclical design process.

LEARNING CONTINUUM	ITL.ID2.c.2.i.	Engage in an iterative process to develop and test prototypes and reflect on the role that trial and error plays in the design process.

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.2.i.	Identify problems and select appropriate digital tools to analyze and explore 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.b.	Collect data, then identify and use digital tools to analyze and represent the data to find solutions.
LEARNING CONTINUUM	ITL.CT1.b.2.i.	Utilize age-appropriate digital tools to collect data, design, code, test and verify possible solutions to collect and represent data to discuss results and share conclusions.

Wisconsin Academic Standards

Technology Education

Grade **6** - 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 **5** - 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	5	Use appropriate tools strategically.
BENCHMARK	7	Look for and make use of structure.

Wyoming Content and Performance Standards

Mathematics

Grade **6** - 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	5	Use appropriate tools strategically.
BENCHMARK	7	Look for and make use of structure.
CONTENT STANDARD		Ratios and Proportional Relationships

BENCHMARK	**6.RP.A.**	**Understand ratio concepts and use ratio reasoning to solve problems.**
GRADE LEVEL EXAMPLE	**6.RP.A.3.**	**Use ratio and rate reasoning to solve real-world and mathematical problems.**
EXPECTATION	6.RP.A.3A.	Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.
CONTENT STANDARD		**Expressions and Equations**
BENCHMARK	**6.EE.F.**	**Reason about and solve one-variable equations and inequalities.**
GRADE LEVEL EXAMPLE	6.EE.F.5.	Understand a solution to an equation or an inequality makes the equation or inequality true. Use substitution to determine whether a given number in a specified set makes an equation or inequality true.

Wyoming Content and Performance Standards

Science

Grade **5** - Adopted: **2016**

CONTENT STANDARD		**LIFE SCIENCE**
BENCHMARK	**5-LS1.**	**From Molecules to Organisms: Structure and Processes**
GRADE LEVEL EXAMPLE	5-LS1-1.	Support an argument that plants get the materials they need for growth primarily from air and water.
CONTENT STANDARD		**EARTH AND SPACE SCIENCE**
BENCHMARK	**5-ESS3.**	**Earth and Human Activity**
GRADE LEVEL EXAMPLE	5-ESS3-1.	Obtain and combine information about ways individual communities use science ideas to conserve Earth's resources and environment.
CONTENT STANDARD		**ENGINEERING DESIGN**
BENCHMARK	**3-5-ETS1.**	**Engineering, Technology, & Applications of Science**
GRADE LEVEL EXAMPLE	3-5-ETS1-1.	Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
GRADE LEVEL EXAMPLE	3-5-ETS1-2.	Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
GRADE LEVEL EXAMPLE	3-5-ETS1-3.	Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

Wyoming Content and Performance Standards

Science

Grade **6** - Adopted: **2016**

CONTENT STANDARD		**PHYSICAL SCIENCE**
BENCHMARK	**MS-PS4.**	**Waves and their Applications in Technologies for Information Transfer**

GRADE LEVEL EXAMPLE	MS-PS4-3.	Integrate qualitative scientific and technical information to support the claim that digitized signals are a more reliable way to encode and transmit information than analog signals.
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-ETS1.**	**Engineering, Technology, and Applications of Science**
GRADE LEVEL EXAMPLE	MS-ETS1-1.	Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.
GRADE LEVEL EXAMPLE	MS-ETS1-2.	Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.
GRADE LEVEL EXAMPLE	MS-ETS1-4.	Develop a model for a proposed object, tool or process and then use an iterative process to test the model, collect data, and generate modification ideas trending toward an optimal design.
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 **6** - 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.

GRADE LEVEL EXAMPLE	RST.6-8.3.	Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.
CONTENT STANDARD	**RST.6-8.**	**Reading Standards for Literacy in Science and Technical Subjects**
BENCHMARK		**Craft and Structure**
GRADE LEVEL EXAMPLE	RST.6-8.4.	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6-8 texts and topics.
GRADE LEVEL EXAMPLE	RST.6-8.5.	Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to an understanding of the topic.
CONTENT STANDARD	**RST.6-8.**	**Reading Standards for Literacy in Science and Technical Subjects**
BENCHMARK		**Integration of Knowledge and Ideas**
GRADE LEVEL EXAMPLE	RST.6-8.7.	Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).
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.
CONTENT STANDARD	**WHST.6-8.**	**Writing Standards for Literacy in Science and Technical Subjects**
BENCHMARK		**Text Types and Purposes**
GRADE LEVEL EXAMPLE	**WHST.6-8.2.**	**Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.**
EXPECTATION	WHST.6-8.2(d)	Use precise language and domain-specific vocabulary to inform about or explain the topic.
CONTENT STANDARD	**WHST.6-8.**	**Writing Standards for Literacy in Science and Technical Subjects**
BENCHMARK		**Production and Distribution of Writing**
GRADE LEVEL EXAMPLE	WHST.6-8.4.	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
GRADE LEVEL EXAMPLE	WHST.6-8.6.	Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas clearly and efficiently.

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		**3-5 Computer Science Standards**
GRADE LEVEL EXAMPLE	**AP.A.**	**Algorithms**
EXPECTATION	5.AP.A.01.	Using grade appropriate content and complexity, compare and refine multiple algorithms for the same task and determine which is the most appropriate.

CONTENT STANDARD		**Wyoming Computer Science Content Standards**
BENCHMARK		**3-5 Computer Science Standards**
GRADE LEVEL EXAMPLE	**AP.M.**	**Modularity**
EXPECTATION	5.AP.M.01.	Using grade appropriate content and complexity, decompose (break down) problems into smaller, manageable subproblems to facilitate the program development process.

CONTENT STANDARD		**Wyoming Computer Science Content Standards**
BENCHMARK		**3-5 Computer Science Standards**
GRADE LEVEL EXAMPLE	**AP.PD.**	**Program Development**
EXPECTATION	5.AP.PD.03.	Using grade appropriate content and complexity, test and debug (i.e., identify and fix errors) a program or algorithm to ensure it runs as intended.

Wyoming Content and Performance Standards

Technology Education

Grade **6** - 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.