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: 3, 4, Key Stage 1, Key Stage 2

Forward Education

Powering the Future with Wind Energy

Pennsylvania Core and Academic Standards

Mathematics

Grade **3** - 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.

SUBJECT / STANDARD AREA	PA.CC.2.1.3.	Numbers and Operations
STANDARD AREA / STATEMENT	**CC.2.1.3.B.**	**Numbers & Operations in Base Ten**
STANDARD	CC.2.1.3.B.1.	Apply place-value understanding and properties of operations to perform multi-digit arithmetic.

SUBJECT / STANDARD AREA	PA.CC.2.4.3.	Measurement, Data, and Probability
STANDARD AREA / STATEMENT	**CC.2.4.3.A.**	**Measurement and Data**
STANDARD	CC.2.4.3.A.4.	Represent and interpret data using tally charts, tables, pictographs, line plots, and bar graphs.

Mathematics

Grade **4** - 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.

SUBJECT / STANDARD AREA	PA.CC.2.1.4.	Numbers and Operations
STANDARD AREA / STATEMENT	**CC.2.1.4.B.**	**Numbers & Operations in Base Ten**
STANDARD	CC.2.1.4.B.2.	Use place-value understanding and properties of operations to perform multi-digit arithmetic.

SUBJECT / STANDARD AREA	PA.CC.2.1.4.	Numbers and Operations
STANDARD AREA / STATEMENT	**CC.2.1.4.C.**	**Numbers & Operations — Fractions**
STANDARD	CC.2.1.4.C.3.	Connect decimal notation to fractions, and compare decimal fractions (base 10 denominator, e.g., 19/100).

SUBJECT / STANDARD AREA	PA.CC.2.4.4.	Measurement, Data, and Probability
STANDARD AREA / STATEMENT	**CC.2.4.4.A.**	**Measurement and Data**
STANDARD	CC.2.4.4.A.4.	Represent and interpret data involving fractions using information provided in a line plot.

SUBJECT / STANDARD AREA	**PA.SI.**	**Science as Inquiry**
STANDARD AREA / STATEMENT	SI.5.	Use simple equipment (tools and other technologies) to gather data and understand that this allows scientists to collect more information than relying only on their senses to gather information.
STANDARD AREA / STATEMENT	SI.7.	Communicate procedures and explanations giving priority to evidence and understanding that scientists make their results public, describe their investigations so they can be reproduced, and review and ask questions about the work of other scientists.

SUBJECT / STANDARD AREA	**PA.3.2.**	**Physical Sciences: Chemistry and Physics**
STANDARD AREA / STATEMENT	**3.2.B.**	**Physics**
STANDARD		**Force & Motion of Particles and Rigid Bodies**
DESCRIPTOR / STANDARD	3.2.3.B1.	Explain how movement can be described in many ways.

SUBJECT / STANDARD AREA	**PA.3.2.**	**Physical Sciences: Chemistry and Physics**
STANDARD AREA / STATEMENT	**3.2.B.**	**Physics**
STANDARD		**Energy Storage and Transformations: Conservation Laws**
DESCRIPTOR / STANDARD	3.2.3.B2.	Explore energy's ability to cause motion or create change. Explore how energy can be found in moving objects, light, sound, and heat.

SUBJECT / STANDARD AREA	**PA.3.4.**	**Technology and Engineering Education**
STANDARD AREA / STATEMENT	**3.4.B.**	**Technology and Society**
STANDARD		**Technology and History**
DESCRIPTOR / STANDARD	3.4.3.B4.	Illustrate how people have made tools to provide food, clothing, and shelter.

SUBJECT / STANDARD AREA	**PA.3.4.**	**Technology and Engineering Education**
STANDARD AREA / STATEMENT	**3.4.C.**	**Technology and Engineering Design**
STANDARD		**Design Attributes**
DESCRIPTOR / STANDARD	3.4.3.C1.	Recognize design is a creative process and everyone can design solutions to problems.

SUBJECT / STANDARD AREA	**PA.3.4.**	**Technology and Engineering Education**
STANDARD AREA / STATEMENT	**3.4.C.**	**Technology and Engineering Design**
STANDARD		**Engineering Design**
DESCRIPTOR / STANDARD	3.4.3.C2.	Explain why the design process requires creativity and consideration of all ideas.

SUBJECT / STANDARD AREA	**PA.3.4.**	**Technology and Engineering Education**
STANDARD AREA / STATEMENT	**3.4.E.**	**The Designed World**
STANDARD		**Medical Technologies**
DESCRIPTOR / STANDARD	3.4.3.E1.	Identify the technologies that support and improve quality of life.

SUBJECT / STANDARD AREA	**PA.3.4.**	**Technology and Engineering Education**
STANDARD AREA / STATEMENT	**3.4.E.**	**The Designed World**
STANDARD		**Energy and Power Technologies**
DESCRIPTOR / STANDARD	3.4.3.E3.	Recognize that tools, machines, products, and systems use energy in order to do work.

SUBJECT / STANDARD AREA		**Environment and Ecology**
STANDARD AREA / STATEMENT		**Science as Inquiry: Grades PreK - 3**
STANDARD	SI.4.PK-3	Use simple equipment (tools and other technologies) to gather data and understand that this allows scientists to collect more information than relying only on their senses to gather information.
STANDARD	SI.6.PK-3	Communicate procedures and explanations giving priority to evidence and understanding that scientists make their results public, describe their investigations so they can be reproduced and review and ask questions about the work of other scientists.

SUBJECT / STANDARD AREA		**Environment and Ecology**
STANDARD AREA / STATEMENT	**4.5.**	**Humans and the Environment**
STANDARD	4.5.3.A	Identify resources humans take from the environment for their survival.

Science

Grade **4** - Adopted: **2010**

SUBJECT / STANDARD AREA	**PA.SI.**	**Science as Inquiry**
STANDARD AREA / STATEMENT	SI.5.	Use simple equipment (tools and other technologies) to gather data and understand that this allows scientists to collect more information than relying only on their senses to gather information.
STANDARD AREA / STATEMENT	SI.7.	Communicate procedures and explanations giving priority to evidence and understanding that scientists make their results public, describe their investigations so they can be reproduced, and review and ask questions about the work of other scientists.

SUBJECT / STANDARD AREA	**PA.3.**	**Science and Technology and Engineering Education**
STANDARD AREA / STATEMENT	**3.2.**	**Physical Sciences: Chemistry and Physics**
STANDARD	**3.2.B.**	**Physics**
DESCRIPTOR / STANDARD	3.2.4.B1.	Explain how an object's change in motion can be observed and measured.
DESCRIPTOR / STANDARD	3.2.4.B2.	Identify types of energy and their ability to be stored and changed from one form to another.
DESCRIPTOR / STANDARD	3.2.4.B6.	(ENERGY) Give examples of how energy can be transformed from one form to another.

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	3.4.4.A1.	Understand that tools, materials, and skills are used to make things and carry out tasks.
DESCRIPTOR / STANDARD	3.4.4.A2.	Understand that systems have parts and components that work together.
DESCRIPTOR / STANDARD	3.4.4.A3.	Describe how various relationships exist between technology and other fields.

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	3.4.4.B1.	Describe how technology affects humans in various ways.

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	**3.4.4.C2.**	**Describe the engineering design process:**
DESCRIPTOR	3.4.4.C2.2.	Generate ideas.
DESCRIPTOR	3.4.4.C2.3.	Select a solution and test it.
DESCRIPTOR	3.4.4.C2.4.	Make the item.
DESCRIPTOR	3.4.4.C2.5.	Evaluate the item.
DESCRIPTOR	3.4.4.C2.6	Communicate the solution with others.
DESCRIPTOR	3.4.4.C2.7.	Present the results.

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	3.4.4.D1.	Investigate how things are made and how they can be improved.
DESCRIPTOR / STANDARD	3.4.4.D2b.	Identify and use simple hand tools (e.g., hammer, scale) correctly and safely.
DESCRIPTOR / STANDARD	3.4.4.D3.	Investigate and assess the influence of a specific technology or system on the individual, family, community, and environment.

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	3.4.4.E3.	Identify types of energy and the importance of energy conservation.

SUBJECT / STANDARD AREA	**PA.4.**	**Environment and Ecology**
STANDARD AREA / STATEMENT	**4.5.**	**Humans and the Environment**
STANDARD	4.5.4.A.	Identify how people use natural resources in sustainable and non-sustainable ways.

Pennsylvania Core and Academic Standards

Technology Education

Grade **3** - 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 **4** - 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)

Rhode Island World-Class Standards

Mathematics

Grade **3** - 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.
DOMAIN		**Grade 3 Content Standards**
STATEMENT OF ENDURING KNOWLEDGE	**3.NBT.**	**Number and Operations in Base Ten**
GSE STEM	**3.NBT.A.**	**Use place value understanding and properties of operations to perform multi-digit arithmetic.**
SPECIFIC INDICATOR	3.NBT.A.2.	Fluently add and subtract within 1,000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

DOMAIN		Grade 3 Content Standards
STATEMENT OF ENDURING KNOWLEDGE	**3.MD.**	**Measurement and Data**
GSE STEM	**3.MD.B.**	**Represent and interpret data.**
SPECIFIC INDICATOR	3.MD.B.4.	Generate measurement data by measuring lengths of objects using rulers marked with halves and fourths of an inch. Record and show the data by making a line plot (dot plot), where the horizontal scale is marked off in appropriate units—whole numbers, halves, or fourths.

Rhode Island World-Class Standards

Mathematics

Grade **4** - 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.

DOMAIN		Grade 4 Content Standards
STATEMENT OF ENDURING KNOWLEDGE	**4.NBT.**	**Number and Operations in Base Ten**
GSE STEM	**4.NBT.B.**	**Use place value understanding and properties of operations to perform multi-digit arithmetic on whole numbers less than or equal to 1,000,000.**
SPECIFIC INDICATOR	4.NBT.B.4.	Fluently add and subtract multi-digit whole numbers using the standard algorithm.

DOMAIN		Grade 4 Content Standards
STATEMENT OF ENDURING KNOWLEDGE	**4.NF.**	**Number and Operations—Fractions**
GSE STEM	**4.NF.C.**	**Understand decimal notation for fractions, and compare decimal fractions.**
SPECIFIC INDICATOR	4.NF.C.6.	Use decimal notation to represent fractions with denominators 10 or 100.

Rhode Island World-Class Standards

Science

Grade **3** - Adopted: **2013**

DOMAIN	NGSS.3-PS.	PHYSICAL SCIENCE
STATEMENT OF ENDURING KNOWLEDGE	3-PS2.	Motion and Stability: Forces and Interactions
GSE STEM		Students who demonstrate understanding can:
SPECIFIC INDICATOR	3-PS2-2.	Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.

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 **4** - Adopted: **2013**

DOMAIN	NGSS.4-PS.	PHYSICAL SCIENCE
STATEMENT OF ENDURING KNOWLEDGE	4-PS3.	Energy
GSE STEM		Students who demonstrate understanding can:
SPECIFIC INDICATOR	4-PS3-4.	Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.

DOMAIN	NGSS.4-ESS.	EARTH AND SPACE SCIENCE
STATEMENT OF ENDURING KNOWLEDGE	4-ESS3.	Earth and Human Activity
GSE STEM		Students who demonstrate understanding can:
SPECIFIC INDICATOR	4-ESS3-1.	Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the 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

Technology Education

Grade **3** - 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 **4** - 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.

South Carolina Standards & Learning

Mathematics

Grade **3** - 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.3.NSBT.	Number Sense and Base Ten
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION	3.NSBT.2.	Add and subtract whole numbers fluently to 1,000 using knowledge of place value and properties of operations.

South Carolina Standards & Learning

Mathematics

Grade **4** - 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.4.NSBT.**	**Number Sense and Base Ten**
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION	4.NSBT.4.	Fluently add and subtract multi-digit whole numbers using strategies to include a standard algorithm.
STANDARD / COURSE	**SC.4.NSF.**	**Number Sense and Operations – Fractions**
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION	4.NSF.6.	Write a fraction with a denominator of 10 or 100 using decimal notation, and read and write a decimal number as a fraction.

South Carolina Standards & Learning

Science

Grade **3** - Adopted: **2021**

STANDARD / COURSE		**Physical Science (PS)**
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION		**Motion and Stability: Forces and interactions (PS2)**
PERFORMANCE DESCRIPTOR / STANDARD	3-PS2-2.	Make observations and measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.

South Carolina Standards & Learning

Science

Grade **4** - Adopted: **2021**

STANDARD / COURSE		**Physical Science (PS)**
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION		**Energy (PS3)**
PERFORMANCE DESCRIPTOR / STANDARD	4-PS3-4.	Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.

STANDARD / COURSE		**Earth and Space Science (ESS)**
KNOWLEDGE AND SKILLS / ESSENTIAL QUESTION		**Earth and Human Activity (ESS3)**
PERFORMANCE DESCRIPTOR / STANDARD	4-ESS3-1.	Obtain and combine information to describe that energy and fuels are derived from natural resources and how their uses affect the environment.

South Carolina Standards & Learning

Technology Education

Grade **3** - 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	3.AP.1.1.	Describe a daily task as a sequence of steps.

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	3.AP.3.1.	Identify a simple task (e.g., eating breakfast; brushing your teeth; walking to the bus stop).
PERFORMANCE DESCRIPTOR / STANDARD	3.AP.3.2.	Identify a complex task (e.g., getting ready for school).

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	3.AP.4.1.	Use picture directions to design a series of steps to complete a simple task.

South Carolina Standards & Learning

Technology Education

Grade **4** - 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	4.AP.1.1.	Use step-by-step instructions to perform tasks (i.e., sequential execution).
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	4.AP.3.1.	Compose simple tasks (e.g., eating breakfast; brushing your teeth; walking to the bus stop) into a complex task (e.g., getting ready for school).

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	4.AP.4.1.	Use picture directions to design a series of steps to complete a complex task.

South Dakota Content Standards

Mathematics

Grade **3** - 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.
GOAL/STRAND	**3.NBT.**	**Number and Operation in Base Ten**
INDICATOR/BENCHMARK	**3.NBT.A.**	**Use place value understanding and properties of operation to perform multi-digit arithmetic (A range of algorithms may be used).**
STANDARD	3.NBT.A.2.	Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

South Dakota Content Standards

Mathematics

Grade **4** - 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.
GOAL/STRAND	**4.NBT.**	**Number and Operation in Base Ten**
INDICATOR/BENCHMARK	**4.NBT.B.**	**Use place value understanding and properties of operations to perform multi-digit arithmetic.**
STANDARD	4.NBT.B.4.	Fluently add and subtract multi-digit whole numbers using an algorithm including, but not limited to, the standard algorithm.
GOAL/STRAND	**4.MD.**	**Measurement and Data**
INDICATOR/BENCHMARK	**4.MD.B.**	**Represent and interpret data.**
STANDARD	4.MD.B.4.	Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using information presented in line plots.

South Dakota Content Standards

Science

Grade **3** - Adopted: **2015**

GOAL/STRAND	**SD.3.PSS.**	**Third Grade Physical Science Standards**
INDICATOR/BENCHMARK	3-PS2-2.	Make observations and/or measurements of an object's motion to provide evidence for how a pattern can be used to predict future motion. (SEP: 3; DCI: PS2.A; CCC: Patterns)

South Dakota Content Standards

Science

Grade **4** - Adopted: **2015**

GOAL/STRAND	**SD.4.PSS.**	**Fourth Grade Physical Science Standards**
INDICATOR/BENCHMARK	4-PS3-4.	Design, test, and refine a device that converts energy from one form to another. (SEP: 6; DCI: PS3.B, PS3.D, ETS1.A ; CCC: Energy/Matter)
INDICATOR/BENCHMARK	4-PS4-3.	Create and compare multiple solutions that use patterns to transfer information. (SEP: 6; DCI: PS4.C, ETS1.C; CCC: Patterns, Technology)
GOAL/STRAND	**SD.4.SSS.**	**Fourth Grade Space Science Standards**
INDICATOR/BENCHMARK	4-ESS3-1.	Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment. (SEP: 8; DCI: ESS3.A; CCC: Cause/Effect, Technology)

Tennessee Academic Standards

Mathematics

Grade **3** - 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.

STRAND / STANDARD / COURSE		Mathematics | Grade 3
CONCEPTUAL STRAND / GUIDING QUESTION	**3.NBT.**	**Number and Operations in Base Ten (NBT)**
GUIDING QUESTION / LEARNING EXPECTATION	**3.NBT.A.**	**Use place value understanding and properties of operations to perform multi-digit arithmetic.**
LEARNING EXPECTATION	3.NBT.A.2.	Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

Tennessee Academic Standards

Mathematics

Grade **4** - 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.

STRAND / STANDARD / COURSE		**Mathematics | Grade 4**
CONCEPTUAL STRAND / GUIDING QUESTION	**4.NBT.**	**Number and Operations in Base Ten (NBT)**
GUIDING QUESTION / LEARNING EXPECTATION	**4.NBT.B.**	**Use place value understanding and properties of operations to perform multi-digit arithmetic.**
LEARNING EXPECTATION	4.NBT.B.4.	Fluently add and subtract within 1,000,000 using efficient strategies and algorithms.

STRAND / STANDARD / COURSE		**Mathematics | Grade 4**
CONCEPTUAL STRAND / GUIDING QUESTION	**4.MD.**	**Measurement and Data (MD)**
GUIDING QUESTION / LEARNING EXPECTATION	**4.MD.B.**	**Represent and interpret data.**
LEARNING EXPECTATION	4.MD.B.4.	Make a line plot to display a data set of measurements in fractions of the same unit (1/2 or 1/4 or 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots. For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.

Tennessee Academic Standards

Science

Grade **3** - Adopted: **2016**

STRAND / STANDARD / COURSE	**TN.3.PS.**	**Physical Sciences (PS)**

CONCEPTUAL STRAND / GUIDING QUESTION	**3.PS3.**	**Energy**
GUIDING QUESTION / LEARNING EXPECTATION	3.PS3.1.	Recognize that energy is present when objects move; describe the effects of energy transfer from one object to another.
STRAND / STANDARD / COURSE	**TN.3.ETS.**	**Engineering, Technology, and Applications of Science (ETS)**
CONCEPTUAL STRAND / GUIDING QUESTION	**3.ETS1.**	**Engineering Design**
GUIDING QUESTION / LEARNING EXPECTATION	3.ETS1.1.	Design a solution to a real-world problem that includes specified criteria for constraints.
STRAND / STANDARD / COURSE	**TN.3.ETS.**	**Engineering, Technology, and Applications of Science (ETS)**
CONCEPTUAL STRAND / GUIDING QUESTION	**3.ETS2.**	**Links Among Engineering, Technology, Science, and Society**
GUIDING QUESTION / LEARNING EXPECTATION	3.ETS2.1.	Identify and demonstrate how technology can be used for different purposes.

Tennessee Academic Standards

Science

Grade **4** - Adopted: **2016**

STRAND / STANDARD / COURSE	**TN.4.PS.**	**Physical Sciences (PS)**
CONCEPTUAL STRAND / GUIDING QUESTION	**4.PS3.**	**Energy**
GUIDING QUESTION / LEARNING EXPECTATION	4.PS3.2.	Observe and explain the relationship between potential energy and kinetic energy.
GUIDING QUESTION / LEARNING EXPECTATION	4.PS3.3.	Describe how stored energy can be converted into another form for practical use.
STRAND / STANDARD / COURSE	**TN.4.ESS.**	**Earth and Space Sciences (ESS)**

CONCEPTUAL STRAND / GUIDING QUESTION	**4.ESS3.**	**Earth and Human Activity**
GUIDING QUESTION / LEARNING EXPECTATION	4.ESS3.1.	Obtain and combine information to describe that energy and fuels are derived from natural resources and that some energy and fuel sources are renewable (sunlight, wind, water) and some are not (fossil fuels, minerals).

STRAND / STANDARD / COURSE	**TN.4.ETS.**	**Engineering, Technology, and Applications of Science (ETS)**
CONCEPTUAL STRAND / GUIDING QUESTION	**4.ETS1.**	**Engineering Design**
GUIDING QUESTION / LEARNING EXPECTATION	4.ETS1.1.	Categorize the effectiveness of design solutions by comparing them to specified criteria for constraints.

STRAND / STANDARD / COURSE	**TN.4.ETS.**	**Engineering, Technology, and Applications of Science (ETS)**
CONCEPTUAL STRAND / GUIDING QUESTION	**4.ETS2.**	**Links Among Engineering, Technology, Science, and Society**
GUIDING QUESTION / LEARNING EXPECTATION	4.ETS2.1.	Use appropriate tools and measurements to build a model.

Tennessee Academic Standards

Technology Education

Grade **3** - Adopted: **2022**

STRAND / STANDARD / COURSE		**Tennessee K-12 Computer Science State Standards**
CONCEPTUAL STRAND / GUIDING QUESTION		**Third Grade: Computer Science Standards**
GUIDING QUESTION / LEARNING EXPECTATION	**3.AT.**	**Algorithmic Thinking**
LEARNING EXPECTATION	3.AT.1.	Discuss the design process and use digital tools to illustrate potential solutions.
LEARNING EXPECTATION	3.AT.2.	Create an algorithm to solve a problem as a collaborative team.
LEARNING EXPECTATION	3.AT.3.	Identify problems to solve and generate questions for investigations.

STRAND / STANDARD / COURSE		Tennessee K-12 Computer Science State Standards
CONCEPTUAL STRAND / GUIDING QUESTION		Third Grade: Computer Science Standards
GUIDING QUESTION / LEARNING EXPECTATION	3.PC.	Programming Concepts
LEARNING EXPECTATION	3.PC.1.	Analyze a given list of sub-problems while addressing a larger problem.
LEARNING EXPECTATION	3.PC.2.	Define a problem or task, decompose it into smaller sub-problems.

Tennessee Academic Standards

Technology Education

Grade **4** - Adopted: **2022**

STRAND / STANDARD / COURSE		Tennessee K-12 Computer Science State Standards
CONCEPTUAL STRAND / GUIDING QUESTION		Fourth Grade: Computer Science Standards
GUIDING QUESTION / LEARNING EXPECTATION	4.AT.	Algorithmic Thinking
LEARNING EXPECTATION	4.AT.1.	Examine logical reasoning to predict outcomes of an algorithm.

STRAND / STANDARD / COURSE		Tennessee K-12 Computer Science State Standards
CONCEPTUAL STRAND / GUIDING QUESTION		Fourth Grade: Computer Science Standards
GUIDING QUESTION / LEARNING EXPECTATION	4.DA.	Data Analysis
LEARNING EXPECTATION	4.DA.1.	Collect, organize, analyze, and interpret data to identify solutions and/or make informed decisions.

STRAND / STANDARD / COURSE		Tennessee K-12 Computer Science State Standards
CONCEPTUAL STRAND / GUIDING QUESTION		Fourth Grade: Computer Science Standards

GUIDING QUESTION / LEARNING EXPECTATION	4.PC.	Programming Concepts
LEARNING EXPECTATION	4.PC.1.	Test and debug a given program in a block-based visual programming environment using arithmetic operators, conditionals, and repetition in programs, in collaboration with others.

Texas Essential Knowledge and Skills (TEKS)

Mathematics

Grade **3** - Adopted: **2012**

TEKS	111.5.	Grade 3, Adopted 2012.
STUDENT EXPECTATION	111.5.b.1.	Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
GRADE LEVEL EXPECTATION	111.5.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	111.5.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	111.5.b.1.F.	Analyze mathematical relationships to connect and communicate mathematical ideas.

TEKS	111.5.	Grade 3, Adopted 2012.
STUDENT EXPECTATION	111.5.b.8.	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	111.5.b.8.B.	Solve one- and two-step problems using categorical data represented with a frequency table, dot plot, pictograph, or bar graph with scaled intervals.

Texas Essential Knowledge and Skills (TEKS)

Mathematics

Grade **4** - Adopted: **2012**

TEKS	111.6.	Grade 4, Adopted 2012.
STUDENT EXPECTATION	111.6.b.1.	Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
GRADE LEVEL EXPECTATION	111.6.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	111.6.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	111.6.b.1.F.	Analyze mathematical relationships to connect and communicate mathematical ideas.

TEKS	111.6.	Grade 4, Adopted 2012.
STUDENT EXPECTATION	111.6.b.2.	Number and operations. The student applies mathematical process standards to represent, compare, and order whole numbers and decimals and understand relationships related to place value. The student is expected to:

GRADE LEVEL EXPECTATION	111.6.b.2.G.	Relate decimals to fractions that name tenths and hundredths.

TEKS	**111.6.**	**Grade 4, Adopted 2012.**
STUDENT EXPECTATION	**111.6.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	111.6.b.9.B.	Solve one- and two-step problems using data in whole number, decimal, and fraction form in a frequency table, dot plot, or stem-and-leaf plot.

Texas Essential Knowledge and Skills (TEKS)

Science

Grade **3** - Adopted: **2017**

TEKS	**§112.14**	**Science, Grade 3, 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	**§112.14.b**	**Knowledge and skills.**
GRADE LEVEL EXPECTATION	**§112.14.b.3**	**Scientific investigation and reasoning. The student knows that information, critical thinking, scientific problem solving, and the contributions of scientists are used in making decisions. The student is expected to:**
INDICATOR	§112.14.b.3.A	analyze, evaluate, and critique scientific explanations by using evidence, logical reasoning, and experimental and observational testing

TEKS	**§112.14**	**Science, Grade 3, 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	**§112.14.b**	**Knowledge and skills.**
GRADE LEVEL EXPECTATION	**§112.14.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	§112.14.b.4.A	collect, record, and analyze information using tools, including cameras, computers, hand lenses, metric rulers, Celsius thermometers, wind vanes, rain gauges, pan balances, graduated cylinders, beakers, spring scales, hot plates, meter sticks, magnets, collecting nets, notebooks, and Sun, Earth, and Moon system models; timing devices; and materials to support observation of habitats of organisms such as terrariums and aquariums

TEKS	**§112.14**	**Science, Grade 3, 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	**§112.14.b**	**Knowledge and skills.**
GRADE LEVEL EXPECTATION	**§112.14.b.6**	**Force, motion, and energy. The student knows that forces cause change and that energy exists in many forms. The student is expected to:**
INDICATOR	§112.14.b.6.A	explore different forms of energy, including mechanical, light, sound, and thermal in everyday life
INDICATOR	§112.14.b.6.B	demonstrate and observe how position and motion can be changed by pushing and pulling objects such as swings, balls, and wagons

Texas Essential Knowledge and Skills (TEKS)

Science

Grade **4** - Adopted: **2017**

TEKS	**§112.15**	**Science, Grade 4, 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	**§112.15.b**	**Knowledge and skills.**
GRADE LEVEL EXPECTATION	**§112.15.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	§112.15.b.3.A	analyze, evaluate, and critique scientific explanations by using evidence, logical reasoning, and experimental and observational testing

TEKS	**§112.15**	**Science, Grade 4, 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	**§112.15.b**	**Knowledge and skills.**
GRADE LEVEL EXPECTATION	**§112.15.b.4**	**Scientific investigation and reasoning. The student knows how to use a variety of tools, materials, equipment, and models to conduct science inquiry. The student is expected to:**
INDICATOR	§112.15.b.4.A	collect, record, and analyze information using tools, including calculators, microscopes, cameras, computers, hand lenses, metric rulers, Celsius thermometers, mirrors, spring scales, balances, graduated cylinders, beakers, hot plates, meter sticks, magnets, collecting nets, and notebooks; timing devices; and materials to support observation of habitats of organisms such as terrariums and aquariums

TEKS	**§112.15**	**Science, Grade 4, 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	**§112.15.b**	**Knowledge and skills.**
GRADE LEVEL EXPECTATION	**§112.15.b.6**	**Force, motion, and energy. The student knows that energy exists in many forms and can be observed in cycles, patterns, and systems. The student is expected to:**
INDICATOR	§112.15.b.6.A	differentiate among forms of energy, including mechanical, sound, electrical, light, and thermal

TEKS	**§112.15**	**Science, Grade 4, 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	**§112.15.b**	**Knowledge and skills.**
GRADE LEVEL EXPECTATION	**§112.15.b.7**	**Earth and space. The student knows that Earth consists of useful resources and its surface is constantly changing. The student is expected to:**
INDICATOR	§112.15.b.7.C	identify and classify Earth's renewable resources, including air, plants, water, and animals, and nonrenewable resources, including coal, oil, and natural gas, and the importance of conservation

Texas Essential Knowledge and Skills (TEKS)

Technology Education

Grade **3** - 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 **4** - 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.

Utah Core Standards

Mathematics

Grade **3** - Adopted: **2016**

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

STANDARD / AREA OF LEARNING	**UT.3.NBT.**	**NUMBER AND OPERATIONS IN BASE TEN (3.NBT)**
OBJECTIVE / STRAND		**Use place value understanding and properties of operations to perform multi-digit arithmetic. A range of algorithms may be used.**
INDICATOR / CLUSTER	3.NBT.2.	Fluently add and subtract within 1,000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

Utah Core Standards

Mathematics

Grade **4** - Adopted: **2016**

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

STANDARD / AREA OF LEARNING	UT.4.NBT.	NUMBER AND OPERATIONS IN BASE TEN (4.NBT)
OBJECTIVE / STRAND		**Generalize place value understanding for multi-digit whole numbers by analyzing patterns, writing whole numbers in a variety of ways, making comparisons, and rounding. Use place value understanding and properties of operations to perform multi-digit addition, subtraction, multiplication, and division using a one-digit divisor. Expectations in this strand are limited to whole numbers less than or equal to 1,000,000.**
INDICATOR / CLUSTER	4.NBT.4.	Fluently add and subtract multi-digit whole numbers using the standard algorithm.

STANDARD / AREA OF LEARNING	UT.4.MD.	MEASUREMENT AND DATA (4.MD)
OBJECTIVE / STRAND		**Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit (Standards 4.MD.1–2). Apply knowledge of area and perimeter to solve real-world and mathematical problems (Standard 4.MD.3). Represent and interpret data through the use of a line plot (Standard 4.MD.4). Understand various concepts of angles and angle measurement (Standard 4.MD.5–7).**
INDICATOR / CLUSTER	4.MD.4.	Make a line plot to display a data set of measurements in fractions of a unit (halves, quarters, and eighths). Solve problems involving addition and subtraction with like denominators of fractions by using information presented in line plots. For example, use a line plot to find and interpret the difference in length between the longest and shortest pencils in a classroom.

Utah Core Standards

Science

Grade **3** - Adopted: **2019**

STANDARD / AREA OF LEARNING		SEEd - Grade 3 (2019)
OBJECTIVE / STRAND	**Strand 3.3:**	**FORCE AFFECTS MOTION**

INDICATOR / CLUSTER		**Forces act on objects and have both a strength and a direction. An object at rest typically has multiple forces acting on it, but they are balanced, resulting in a zero net force on the object. Forces that are unbalanced can cause changes in an object's speed or direction of motion. The patterns of an object's motion in various situations can be observed, measured, and used to predict future motion. Forces are exerted when objects come in contact with each other; however, some forces can act on objects that are not in contact. The gravitational force of Earth, acting on an object near Earth's surface, pulls that object toward the planet's center. Electric and magnetic forces between a pair of objects can act at a distance. The strength of these non-contact forces depends on the properties of the objects and the distance between the objects.**
EXPECTATION / STANDARD	Standard 3.3.2.	Analyze and interpret data from observations and measurements of an object's motion to identify patterns in its motion that can be used to predict future motion. Examples of motion with a predictable pattern could include a child swinging on a swing or a ball rolling down a ramp. (PS2.A, PS2.C)

Utah Core Standards

Science

Grade **4** - Adopted: **2019**

STANDARD / AREA OF LEARNING		**SEEd - Grade 4 (2019)**
OBJECTIVE / STRAND	**Strand 4.2:**	**ENERGY TRANSFER**
INDICATOR / CLUSTER		**Energy is present whenever there are moving objects, sound, light, or heat. The faster a given object is moving, the more energy it possesses. When objects collide, energy can be transferred from one object to another causing the objects' motions to change. Energy can also be transferred from place to place by electrical currents, heat, sound, or light. Devices can be designed to convert energy from one form to another.**
EXPECTATION / STANDARD	Standard 4.2.4.	Design a device that converts energy from one form to another. Define the problem, identify criteria and constraints, develop possible solutions using models, analyze data from testing solutions, and propose modifications for optimizing a solution. Emphasize identifying the initial and final forms of energy. Examples could include solar ovens that convert light energy to heat energy or a simple alarm system that converts motion energy into sound energy. (PS3.B, PS3.D, ETS1.A, ETS1.B, ETS1.C)

Utah Core Standards

Technology Education

Grade **3** - 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 3.AP.1.**	**Create programs that include events, sequences, loops, and simple conditionals to express ideas or address a problem. (Practice 5: Creating Computational Artifacts)**
EXPECTATION / STANDARD		Students will create programs using an elementary block coding program (e.g. ScratchJr.) that include events, sequences, loops, and simple conditionals to complete a task. The new components for third grade are events (starting your computer and having applications automatically start) and simple conditionals (if you click on the character then the character jumps 3 times).
STANDARD / AREA OF LEARNING		**Utah K-5 Computer Science Standards**
OBJECTIVE / STRAND		**Algorithms and Programming (AP):**
INDICATOR / CLUSTER	**Standard 3.AP.5.**	**Use an iterative design 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 understand the process of planning (key features, time and resource constraints, and user expectations) before developing a program. Once the program is created, they will review the program with another team for feedback before revising (iterating) and creating an improved program.

Utah Core Standards

Technology Education

Grade **4** - 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 4.AP.2.**	**Create programs that include events, loops, and conditionals. (Practice 5: Creating Computational Artifacts)**
EXPECTATION / STANDARD		Students will create a set of instructions (a program) that include events, loops, and conditionals to facilitate and manage tasks. Students will create programs using an elementary block coding program (e.g. ScratchJr.) that include events, sequences, loops, and simple conditionals to complete a task. Event examples include mouse clicks, typing on the keyboard, and collisions between objects. Conditional statements are sets of commands that are tied to specific actions based on whether the condition evaluates to TRUE or FALSE.
STANDARD / AREA OF LEARNING		**Utah K-5 Computer Science Standards**

OBJECTIVE / STRAND		**Computational Thinking (CT):**
INDICATOR / CLUSTER	**Standard 4.CT.1.**	**Determine specific aspects of patterns between or within problems that can be abstracted out to leave only the common or important elements. (Practice 3: Recognizing and Defining Computational Problems and Practice 4: Developing and Using Abstractions)**
EXPECTATION / STANDARD		Students will determine patterns within problems to identify core elements. Students will seek to identify key strategies to address the core elements, and then build a solution to address the comprehensive problem. For example, when the school is purchasing recess equipment, the students can identify possible challenges and problems that may exist for their community. Students can identify how to address those problems individually, then create a comprehensive solution to make sure recess is a success.

Vermont Content Standards

Mathematics

Grade **3** - 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.

STANDARD / STRAND	**VT.3.NBT.**	**Number and Operations in Base Ten**
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD		**Use place value understanding and properties of operations to perform multi-digit arithmetic.**
GRADE LEVEL EXPECTATION / KNOWLEDGE AND SKILL	3.NBT.2.	Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

Vermont Content Standards

Mathematics

Grade **4** - 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.

STANDARD / STRAND	VT.4.NBT.	Number and Operations in Base Ten
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD		**Use place value understanding and properties of operations to perform multi-digit arithmetic.**
GRADE LEVEL EXPECTATION / KNOWLEDGE AND SKILL	4.NBT.4.	Fluently add and subtract multi-digit whole numbers using the standard algorithm.

STANDARD / STRAND	VT.4.MD.	Measurement and Data
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD		**Represent and interpret data.**
GRADE LEVEL EXPECTATION / KNOWLEDGE AND SKILL	4.MD.4.	Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using information presented in line plots. For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.

Vermont Content Standards

Science

Grade **3** - Adopted: **2014**

STANDARD / STRAND	VT.3-PS.	PHYSICAL SCIENCE

ESSENTIAL KNOWLEDGE AND SKILL / STANDARD	**3-PS2.**	**Motion and Stability: Forces and Interactions**
GRADE LEVEL EXPECTATION / KNOWLEDGE AND SKILL		**Students who demonstrate understanding can:**
GRADE LEVEL EXPECTATION	3-PS2-2.	Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.

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 **4** - Adopted: **2014**

STANDARD / STRAND	**VT.4-PS.**	**PHYSICAL SCIENCE**
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD	**4-PS3.**	**Energy**
GRADE LEVEL EXPECTATION / KNOWLEDGE AND SKILL		**Students who demonstrate understanding can:**
GRADE LEVEL EXPECTATION	4-PS3-4.	Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.

STANDARD / STRAND	**VT.4-ESS.**	**EARTH AND SPACE SCIENCE**
ESSENTIAL KNOWLEDGE AND SKILL / STANDARD	**4-ESS3.**	**Earth and Human Activity**
GRADE LEVEL EXPECTATION / KNOWLEDGE AND SKILL		**Students who demonstrate understanding can:**

GRADE LEVEL EXPECTATION	4-ESS3-1.	Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the 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

Technology Education

Grade **3** - 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 **4** - 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 **3** - Adopted: **2016**

STRAND / TOPIC	**VA.CE.3.**	**Computation and Estimation**
STANDARD / STRAND	**3.3.**	**The student will**
INDICATOR / STANDARD	3.3.a.	Estimate and determine the sum or difference of two whole numbers.

STRAND / TOPIC	**VA.PS.3.**	**Probability and Statistics**
STANDARD / STRAND	**3.15.**	**The student will**
INDICATOR / STANDARD	3.15.a.	Collect, organize, and represent data in pictographs or bar graphs.

Virginia Standards of Learning

Mathematics

Grade **4** - Adopted: **2016**

STRAND / TOPIC	**VA.NNS.4.**	**Number and Number Sense**
STANDARD / STRAND	**4.3.**	**The student will**
INDICATOR / STANDARD	4.3.d.	Given a model, write the decimal and fraction equivalents.

STRAND / TOPIC	**VA.PS.4.**	**Probability and Statistics**
STANDARD / STRAND	**4.14.**	**The student will**
INDICATOR / STANDARD	4.14.a.	Collect, organize, and represent data in bar graphs and line graphs.

Virginia Standards of Learning

Science

Grade **3** - Adopted: **2018**

STRAND / TOPIC		**Grade Three – Interactions in our world**
STANDARD / STRAND		**Scientific and Engineering Practices**
INDICATOR / STANDARD	**3.1.**	**The student will demonstrate an understanding of scientific and engineering practices by:**
INDICATOR	**3.1.a.**	**asking questions and defining problems**
PROGRESS INDICATOR	3.1.a.3.	define a simple design problem that can be solved through the development of an object, tool, process, or system

STRAND / TOPIC		**Grade Three – Interactions in our world**
STANDARD / STRAND		**Scientific and Engineering Practices**

INDICATOR / STANDARD	**3.1.**	**The student will demonstrate an understanding of scientific and engineering practices by:**
INDICATOR	**3.1.b.**	**planning and carrying out investigations**
PROGRESS INDICATOR	3.1.b.2.	use appropriate methods and/or tools for collecting data
PROGRESS INDICATOR	3.1.b.6.	use tools and/or materials to design and/or build a device that solves a specific problem

STRAND / TOPIC		**Grade Three – Interactions in our world**
STANDARD / STRAND		**Scientific and Engineering Practices**
INDICATOR / STANDARD	**3.1.**	**The student will demonstrate an understanding of scientific and engineering practices by:**
INDICATOR	**3.1.c.**	**interpreting, analyzing, and evaluating data**
PROGRESS INDICATOR	3.1.c.3.	analyze data from tests of an object or tool to determine if it works as intended

STRAND / TOPIC		**Grade Three – Interactions in our world**
STANDARD / STRAND		**Scientific and Engineering Practices**
INDICATOR / STANDARD	**3.1.**	**The student will demonstrate an understanding of scientific and engineering practices by:**
INDICATOR	**3.1.d.**	**constructing and critiquing conclusions and explanations**
PROGRESS INDICATOR	3.1.d.3.	describe how scientific ideas apply to design solutions

STRAND / TOPIC		**Grade Three – Interactions in our world**
STANDARD / STRAND		**Scientific and Engineering Practices**
INDICATOR / STANDARD	**3.1.**	**The student will demonstrate an understanding of scientific and engineering practices by:**
INDICATOR	**3.1.e.**	**developing and using models**
PROGRESS INDICATOR	3.1.e.1.	use models to demonstrate simple phenomena and natural processes
PROGRESS INDICATOR	3.1.e.2.	develop a model (e.g., diagram or simple physical prototype) to illustrate a proposed object, tool, or process

STRAND / TOPIC		**Grade Three – Interactions in our world**
STANDARD / STRAND		**Scientific and Engineering Practices**
INDICATOR / STANDARD	**3.1.**	**The student will demonstrate an understanding of scientific and engineering practices by:**

INDICATOR	**3.1.f.**	**obtaining, evaluating, and communicating information**
PROGRESS INDICATOR	3.1.f.1.	read and comprehend reading-level appropriate texts and/or other reliable media
PROGRESS INDICATOR	3.1.f.2.	communicate scientific information, design ideas, and/or solutions with others
STRAND / TOPIC		**Grade Three – Interactions in our world**
STANDARD / STRAND		**Force, Motion, and Energy**
INDICATOR / STANDARD	**3.2.**	**The student will investigate and understand that the direction and size of force affects the motion of an object. Key ideas include:**
INDICATOR	3.2.c.	simple machines increase or change the direction of a force;
INDICATOR	3.2.d.	simple and compound machines have many applications.

Virginia Standards of Learning

Science

Grade **4** - Adopted: **2018**

STRAND / TOPIC		**Grade Four – Our place in the solar system**
STANDARD / STRAND		**Scientific and Engineering Practices**
INDICATOR / STANDARD	**4.1.**	**The student will demonstrate an understanding of scientific and engineering practices by:**
INDICATOR	**4.1.a.**	**asking questions and defining problems**
PROGRESS INDICATOR	4.1.a.3.	define a simple design problem that can be solved through the development of an object, tool, process, or system
STRAND / TOPIC		**Grade Four – Our place in the solar system**
STANDARD / STRAND		**Scientific and Engineering Practices**
INDICATOR / STANDARD	**4.1.**	**The student will demonstrate an understanding of scientific and engineering practices by:**
INDICATOR	**4.1.b.**	**planning and carrying out investigations**
PROGRESS INDICATOR	4.1.b.3.	use tools and/or materials to design and/or build a device that solves a specific problem
STRAND / TOPIC		**Grade Four – Our place in the solar system**
STANDARD / STRAND		**Scientific and Engineering Practices**
INDICATOR / STANDARD	**4.1.**	**The student will demonstrate an understanding of scientific and engineering practices by:**
INDICATOR	**4.1.c.**	**interpreting, analyzing, and evaluating data**

PROGRESS INDICATOR	4.1.c.4.	analyze data from tests of an object or tool to determine whether it works as intended

STRAND / TOPIC		**Grade Four – Our place in the solar system**
STANDARD / STRAND		**Scientific and Engineering Practices**
INDICATOR / STANDARD	**4.1.**	**The student will demonstrate an understanding of scientific and engineering practices by:**
INDICATOR	**4.1.e.**	**developing and using models**
PROGRESS INDICATOR	4.1.e.1.	develop and/or use models to explain natural phenomena
PROGRESS INDICATOR	4.1.e.2.	identify limitations of models

STRAND / TOPIC		**Grade Four – Our place in the solar system**
STANDARD / STRAND		**Scientific and Engineering Practices**
INDICATOR / STANDARD	**4.1.**	**The student will demonstrate an understanding of scientific and engineering practices by:**
INDICATOR	**4.1.f.**	**obtaining, evaluating, and communicating information**
PROGRESS INDICATOR	4.1.f.1.	read and comprehend reading-level-appropriate texts and/or other reliable media
PROGRESS INDICATOR	4.1.f.2.	communicate scientific information, design ideas, and/or solutions with others

Virginia Standards of Learning

Technology Education

Grade **3** - Adopted: **2017**

STRAND / TOPIC	**VA.CS.**	**Computer Science**
STANDARD / STRAND		**Algorithms and Programming**
INDICATOR / STANDARD	**3.1.**	**The student will construct sets of step-by-step instructions (algorithms), both independently and collaboratively**
INDICATOR	3.1.a.	Using sequencing.

STRAND / TOPIC	**VA.CS.**	**Computer Science**
STANDARD / STRAND		**Algorithms and Programming**
INDICATOR / STANDARD	**3.2.**	**The student will construct programs to accomplish tasks as a means of creative expression using a block or text based programming language, both independently and collaboratively**
INDICATOR	3.2.a.	Using sequencing.

STRAND / TOPIC	**VA.CS.**	**Computer Science**
STANDARD / STRAND		**Algorithms and Programming**
INDICATOR / STANDARD	3.3.	The student will analyze, correct, and improve (debug) an algorithm that includes sequencing, events, and loops. [Related SOL areas – Math: Problem Solving, English: Editing]

STRAND / TOPIC	**VA.CS.**	**Computer Science**
STANDARD / STRAND		**Data and Analysis**
INDICATOR / STANDARD	3.12.	The student will answer questions by using a computer to observe data in order for the student to draw conclusions and make predictions. [Related SOL: Math 3.15, HSS 3.1d]

Grade **3** - 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.

Virginia Standards of Learning

Technology Education

Grade **4** - Adopted: **2017**

STRAND / TOPIC	**VA.CS.**	**Computer Science**
STANDARD / STRAND		**Algorithms and Programming**
INDICATOR / STANDARD	**4.1.**	**The student will construct sets of step-by-step instructions (algorithms) both independently and collaboratively**
INDICATOR	4.1.a.	Using sequencing.

STRAND / TOPIC	**VA.CS.**	**Computer Science**
STANDARD / STRAND		**Algorithms and Programming**
INDICATOR / STANDARD	**4.2.**	**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	4.2.a.	Using sequencing.

STRAND / TOPIC	VA.CS.	Computer Science
STANDARD / STRAND		**Algorithms and Programming**
INDICATOR / STANDARD	4.3.	The student will analyze, correct, and improve (debug) an algorithm that includes sequencing, events, loops and variables. [Related SOL areas – Math: Problem Solving, English: Editing]

STRAND / TOPIC	VA.CS.	Computer Science
STANDARD / STRAND		**Data and Analysis**
INDICATOR / STANDARD	4.12.	The student will answer questions by using a computer to manipulate data in order for the student to draw conclusions and make predictions. [Related SOL: Math 4.14]

Grade **4** - 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)**
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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
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STRAND / TOPIC		Digital Learning Integration Standards of Learning for Virginia Public Schools
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INDICATOR	**CT.A.**	**Formulate problem definitions suited for technology-assisted methods such as data analysis, modeling and algorithmic thinking in exploring and finding solutions.**
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STRAND / TOPIC		Digital Learning Integration Standards of Learning for Virginia Public Schools
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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)**
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PROGRESS INDICATOR	GC.D.i.	Students use collaborative technologies to work with others to understand problems and investigate solutions to local and global issues.

Washington DC Academic Standards

Mathematics

Grade **3** - Adopted: **2010**

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

STANDARD / ESSENTIAL SKILL	3.MP.4.	Model with mathematics.
STANDARD / ESSENTIAL SKILL	3.MP.5.	Use appropriate tools strategically.
CONTENT STANDARD / STRAND / DISCIPLINE	**DC.CC.3. NBT.**	**Number and Operations in Base Ten**
STANDARD / ESSENTIAL SKILL		**Use place value understanding and properties of operations to perform multi-digit arithmetic.**
STUDENT EXPECTATION / ESSENTIAL SKILL	3.NBT.2.	Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

Washington DC Academic Standards

Mathematics

Grade **4** - Adopted: **2010**

CONTENT STANDARD / STRAND / DISCIPLINE	**DC.CC.4. MP.**	**Mathematical Practices**
STANDARD / ESSENTIAL SKILL	4.MP.1.	Make sense of problems and persevere in solving them.
STANDARD / ESSENTIAL SKILL	4.MP.2.	Reason abstractly and quantitatively.
STANDARD / ESSENTIAL SKILL	4.MP.3.	Construct viable arguments and critique the reasoning of others.
STANDARD / ESSENTIAL SKILL	4.MP.4.	Model with mathematics.
STANDARD / ESSENTIAL SKILL	4.MP.5.	Use appropriate tools strategically.
CONTENT STANDARD / STRAND / DISCIPLINE	**DC.CC.4. NBT.**	**Number and Operations in Base Ten**
STANDARD / ESSENTIAL SKILL		**Use place value understanding and properties of operations to perform multi-digit arithmetic.**

STUDENT EXPECTATION / ESSENTIAL SKILL	4.NBT.4.	Fluently add and subtract multi-digit whole numbers using the standard algorithm.

CONTENT STANDARD / STRAND / DISCIPLINE	**DC.CC.4.MD.**	**Measurement and Data**
STANDARD / ESSENTIAL SKILL		**Represent and interpret data.**
STUDENT EXPECTATION / ESSENTIAL SKILL	4.MD.4.	Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using information presented in line plots. For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.

Washington DC Academic Standards

Science

Grade **3** - Adopted: **2013**

CONTENT STANDARD / STRAND / DISCIPLINE	**DC.3-PS.**	**PHYSICAL SCIENCE**
STANDARD / ESSENTIAL SKILL	**3-PS2.**	**Motion and Stability: Forces and Interactions**
STUDENT EXPECTATION / ESSENTIAL SKILL		**Students who demonstrate understanding can:**
EXPECTATION	3-PS2-2.	Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.

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 **4** - Adopted: **2013**

CONTENT STANDARD / STRAND / DISCIPLINE	**DC.4-PS.**	**PHYSICAL SCIENCE**
STANDARD / ESSENTIAL SKILL	**4-PS3.**	**Energy**
STUDENT EXPECTATION / ESSENTIAL SKILL		**Students who demonstrate understanding can:**
EXPECTATION	4-PS3-4.	Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.

CONTENT STANDARD / STRAND / DISCIPLINE	**DC.4-ESS.**	**EARTH AND SPACE SCIENCE**
STANDARD / ESSENTIAL SKILL	**4-ESS3.**	**Earth and Human Activity**
STUDENT EXPECTATION / ESSENTIAL SKILL		**Students who demonstrate understanding can:**
EXPECTATION	4-ESS3-1.	Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the 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 State K-12 Learning Standards and Guidelines

Mathematics

Grade **3** - 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.
EALR	**WA.3.NBT.**	**Number and Operations in Base Ten**
BIG IDEA / CORE CONTENT		**Use place value understanding and properties of operations to perform multi-digit arithmetic.**
CORE CONTENT / CONTENT STANDARD	3.NBT.2.	Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

Washington State K-12 Learning Standards and Guidelines

Mathematics

Grade **4** - 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.
EALR	**WA.4.NBT.**	**Number and Operations in Base Ten**

BIG IDEA / CORE CONTENT		**Use place value understanding and properties of operations to perform multi-digit arithmetic.**
CORE CONTENT / CONTENT STANDARD	4.NBT.4.	Fluently add and subtract multi-digit whole numbers using the standard algorithm.

EALR	**WA.4.MD.**	**Measurement and Data**
BIG IDEA / CORE CONTENT		**Represent and interpret data.**
CORE CONTENT / CONTENT STANDARD	4.MD.4.	Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using information presented in line plots. For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.

Washington State K-12 Learning Standards and Guidelines

Science

Grade **3** - Adopted: **2014**

EALR	**WA.3-PS.**	**PHYSICAL SCIENCE**
BIG IDEA / CORE CONTENT	**3-PS2.**	**Motion and Stability: Forces and Interactions**
CORE CONTENT / CONTENT STANDARD		**Students who demonstrate understanding can:**
CONTENT STANDARD / PERFORMANCE EXPECTATION	3-PS2-2.	Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.

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 **4** - Adopted: **2014**

EALR	WA.4-PS.	PHYSICAL SCIENCE
BIG IDEA / CORE CONTENT	**4-PS3.**	**Energy**
CORE CONTENT / CONTENT STANDARD		**Students who demonstrate understanding can:**
CONTENT STANDARD / PERFORMANCE EXPECTATION	4-PS3-4.	Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.

EALR	WA.4-ESS.	EARTH AND SPACE SCIENCE
BIG IDEA / CORE CONTENT	**4-ESS3.**	**Earth and Human Activity**
CORE CONTENT / CONTENT STANDARD		**Students who demonstrate understanding can:**
CONTENT STANDARD / PERFORMANCE EXPECTATION	4-ESS3-1.	Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the 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

Technology Education

Grade **3** - 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 **4** - 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)

West Virginia College and Career Readiness Standards

Mathematics

Grade **3** - 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 / COURSE	**WV.M.3.NBT.**	**Number and Operations in Base Ten**
CONTENT STANDARD / OBJECTIVE		**Use place value and properties of operations to perform multi-digit arithmetic.**
OBJECTIVE / EXPECTATION	M.3.11.	Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

Mathematics

Grade **4** - 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 / COURSE	**WV.M.4.NBT.**	**Number and Operations in Base Ten**
CONTENT STANDARD / OBJECTIVE		**Use place value understanding and properties of operations to perform multi-digit arithmetic.**
OBJECTIVE / EXPECTATION	M.4.9.	Fluently add and subtract multi-digit whole numbers using the standard algorithm.
CONTENT STANDARD / COURSE	**WV.M.4.MD.**	**Measurement and Data**
CONTENT STANDARD / OBJECTIVE		**Represent and interpret data.**
OBJECTIVE / EXPECTATION	M.4.22.	Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using information presented in line plots (e.g., from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection).

West Virginia College and Career Readiness Standards

Science

Grade **3** - Adopted: **2021**

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		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		Building and appropriately using science domain vocabulary and phrases
CONTENT STANDARD / COURSE		**Science – Grade 3**
CONTENT STANDARD / OBJECTIVE		**Physical Science**
OBJECTIVE / EXPECTATION		**Forces and Interactions**
GRADE LEVEL EXPECTATION	S.3.2.	Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.

CONTENT STANDARD / COURSE		**Science – Grade 3**
CONTENT STANDARD / OBJECTIVE		**Engineering, Technology, and Applications of Science**
OBJECTIVE / EXPECTATION		**Engineering Design**
GRADE LEVEL EXPECTATION	S.3.16.	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.3.17.	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.3.18.	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 **4** - Adopted: **2021**

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		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		Building and appropriately using science domain vocabulary and phrases
CONTENT STANDARD / COURSE		**Science – Grade 4**
CONTENT STANDARD / OBJECTIVE		**Physical Science**
OBJECTIVE / EXPECTATION		**Energy**
GRADE LEVEL EXPECTATION	S.4.4.	Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.
CONTENT STANDARD / COURSE		**Science – Grade 4**
CONTENT STANDARD / OBJECTIVE		**Engineering, Technology, and Applications of Science**
OBJECTIVE / EXPECTATION		**Engineering Design**
GRADE LEVEL EXPECTATION	S.4.14.	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.4.15.	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.4.16.	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

Technology Education

Grade **3** - 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 **4** - 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.

Wisconsin Academic Standards

Mathematics

Grade **3** - 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.

DOMAIN		Grade 3 Content Standards
CONTENT STANDARD	**M.3.NBT.**	**Number and Operations in Base Ten (3.NBT)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**M.3.NBT.A.**	**Use place value understanding and properties of operations to perform multi-digit arithmetic, using a variety of strategies.**
DESCRIPTOR / FOCUS AREA	M.3.NBT.A.2.	Flexibly and efficiently add and subtract within 1,000 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.

Wisconsin Academic Standards

Mathematics

Grade **4** - 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.

DOMAIN		Grade 4 Content Standards
CONTENT STANDARD	**M.4.NBT.**	**Number and Operations in Base Ten (4.NBT)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**M.4.NBT.B.**	**Use place value understanding and properties of operations to perform multi-digit arithmetic.**
DESCRIPTOR / FOCUS AREA	M.4.NBT.B.4.	Flexibly and efficiently add and subtract multi-digit whole numbers using strategies or algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

DOMAIN		Grade 4 Content Standards
CONTENT STANDARD		**Measurement and Data (4.MD)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**M.4.MD.B.**	**Represent and interpret data.**
DESCRIPTOR / FOCUS AREA	M.4.MD.B.4.	Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using information presented in line plots.

Wisconsin Academic Standards

Science

Grade **3** - 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.CC.**	**Crosscutting Concepts (CC)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**SCI.CC4.**	**Students use science and engineering practices, disciplinary core ideas, and an understanding of systems and models to make sense of phenomena and solve problems.**
DESCRIPTOR / FOCUS AREA		**Systems and System Models**
LEARNING CONTINUUM	SCI.CC4.3-5.	Students understand a system is a group of related parts that make up a whole and can carry out functions its individual parts cannot. They also describe a system in terms of its components and their interactions.

DOMAIN	WI.SCI.	Science
CONTENT STANDARD	SCI.SEP.	Science and Engineering Practices (SEP)
PERFORMANCE STANDARD / LEARNING PRIORITY	SCI.SEP 2.	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.SEP 2.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.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 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 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.PS.**	**Disciplinary Core Idea: Physical Science (PS)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**SCI.PS2.**	**Students use science and engineering practices, crosscutting concepts, and an understanding of forces, interactions, motion and stability to make sense of phenomena and solve problems.**
DESCRIPTOR / FOCUS AREA	**SCI.PS2.A.**	**Forces and Motion**
LEARNING CONTINUUM	SCI.PS2.A.3.1.	Qualities of motion and changes in motion require description of both size and direction.
LEARNING CONTINUUM	SCI.PS2.A.3.3.	Patterns of motion can be used to predict future motion.

DOMAIN	**WI.SCI.**	**Science**
CONTENT STANDARD	**SCI.PS.**	**Disciplinary Core Idea: Physical Science (PS)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**SCI.PS3.**	**Students use science and engineering practices, crosscutting concepts, and an understanding of energy to make sense of phenomena and solve problems.**
DESCRIPTOR / FOCUS AREA	**SCI.PS3.A.**	**Definitions of Energy**

LEARNING CONTINUUM	SCI.PS3.A.4.	Moving objects contain energy. The faster the object moves, the more energy it has.

DOMAIN	WI.SCI.	Science
CONTENT STANDARD	SCI.ESS.	Disciplinary Core Idea: Earth and Space Sciences (ESS)
PERFORMANCE STANDARD / LEARNING PRIORITY	SCI.ESS3.	Students use science and engineering practices, crosscutting concepts, and an understanding of the Earth and human activity to make sense of phenomena and solve problems.
DESCRIPTOR / FOCUS AREA	SCI.ESS3.A.	Natural Resources
LEARNING CONTINUUM	SCI.ESS3.A.4.	Energy and fuels humans use are derived from natural sources, and their use affects the environment. Some resources are renewable over time, others are not.

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.ETS 2.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.ETS 2.**	**Students use science and engineering practices, crosscutting concepts, and an understanding of the links among Engineering, Technology, Science, and Society to make sense of phenomena and solve problems.**
DESCRIPTOR / FOCUS AREA	**SCI.ETS 2.B.**	**Influence of Engineering, Technology, and Science on Society and the Natural World**
LEARNING CONTINUUM	SCI.ETS2 .B.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.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).

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.CC.**	**Crosscutting Concepts (CC)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**SCI.CC4.**	**Students use science and engineering practices, disciplinary core ideas, and an understanding of systems and models to make sense of phenomena and solve problems.**
DESCRIPTOR / FOCUS AREA		**Systems and System Models**
LEARNING CONTINUUM	SCI.CC4.3-5.	Students understand a system is a group of related parts that make up a whole and can carry out functions its individual parts cannot. They also describe a system in terms of its components and their interactions.

DOMAIN	**WI.SCI.**	**Science**
CONTENT STANDARD	**SCI.SEP.**	**Science and Engineering Practices (SEP)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**SCI.SEP 2.**	**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.SEP 2.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.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 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 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.PS.**	**Disciplinary Core Idea: Physical Science (PS)**

PERFORMANCE STANDARD / LEARNING PRIORITY	**SCI.PS2.**	**Students use science and engineering practices, crosscutting concepts, and an understanding of forces, interactions, motion and stability to make sense of phenomena and solve problems.**
DESCRIPTOR / FOCUS AREA	**SCI.PS2.A.**	**Forces and Motion**
LEARNING CONTINUUM	SCI.PS2.A.3.1.	Qualities of motion and changes in motion require description of both size and direction.
LEARNING CONTINUUM	SCI.PS2.A.3.3.	Patterns of motion can be used to predict future motion.

DOMAIN	**WI.SCI.**	**Science**
CONTENT STANDARD	**SCI.PS.**	**Disciplinary Core Idea: Physical Science (PS)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**SCI.PS3.**	**Students use science and engineering practices, crosscutting concepts, and an understanding of energy to make sense of phenomena and solve problems.**
DESCRIPTOR / FOCUS AREA	**SCI.PS3.A.**	**Definitions of Energy**
LEARNING CONTINUUM	SCI.PS3.A.4.	Moving objects contain energy. The faster the object moves, the more energy it has.

DOMAIN	**WI.SCI.**	**Science**
CONTENT STANDARD	**SCI.ESS.**	**Disciplinary Core Idea: Earth and Space Sciences (ESS)**
PERFORMANCE STANDARD / LEARNING PRIORITY	**SCI.ESS3.**	**Students use science and engineering practices, crosscutting concepts, and an understanding of the Earth and human activity to make sense of phenomena and solve problems.**
DESCRIPTOR / FOCUS AREA	**SCI.ESS3.A.**	**Natural Resources**
LEARNING CONTINUUM	SCI.ESS3.A.4.	Energy and fuels humans use are derived from natural sources, and their use affects the environment. Some resources are renewable over time, others are not.

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.ETS2.B.**	**Influence of Engineering, Technology, and Science on Society and the Natural World**
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.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.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.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.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).

Wisconsin Academic Standards

Technology Education

Grade **3** - 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 collect and represent data to discuss results and share conclusions.

Wisconsin Academic Standards

Technology Education

Grade **4** - 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 collect and represent data to discuss results and share conclusions.

Wyoming Content and Performance Standards

Mathematics

Grade **3** - 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.
CONTENT STANDARD		**Number and Operations in Base Ten**
BENCHMARK	**3.NBT.E.**	**Use place value understanding and properties of operations to perform multi-digit arithmetic (a range of algorithms may be used).**
GRADE LEVEL EXAMPLE	3.NBT.E.2.	Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of addition, and/or the relationship between addition and subtraction.

Wyoming Content and Performance Standards

Mathematics

Grade **4** - 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.
CONTENT STANDARD		**Number and Operations in Base Ten**
BENCHMARK	**4.NBT.E.**	**Use place value understanding and properties of operations to perform multi-digit arithmetic (limited to whole numbers less than or equal to 1,000,000).**
GRADE LEVEL EXAMPLE	4.NBT.E.4.	Add and subtract multi-digit whole numbers using place value strategies including the standard algorithm.
CONTENT STANDARD		**Measurement and Data**
BENCHMARK	**4.MD.J.**	**Represent and interpret data.**
GRADE LEVEL EXAMPLE	4.MD.J.4.	Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using information presented in line plots.

Wyoming Content and Performance Standards

Science

Grade **3** - Adopted: **2016**

CONTENT STANDARD		**PHYSICAL SCIENCE**
BENCHMARK	**3-PS2.**	**Motion and Stability: Forces and Interactions**

GRADE LEVEL EXAMPLE	3-PS2-2.	Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.
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 **4** - Adopted: **2016**

CONTENT STANDARD		**PHYSICAL SCIENCE**
BENCHMARK	**4-PS3.**	**Energy**
GRADE LEVEL EXAMPLE	4-PS3-4.	Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.
CONTENT STANDARD		**EARTH AND SPACE SCIENCE**
BENCHMARK	**4-ESS3.**	**Earth and Human Activity**
GRADE LEVEL EXAMPLE	4-ESS3-1.	Obtain and combine information to describe that energy and fuels are derived from renewable and non-renewable resources and how their uses affect the 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

Technology Education

Grade **3** - 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		**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 **4** - 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		**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.