Main Criteria: Forward Education

Secondary Criteria: Idaho Content Standards, Illinois Learning Standards, Indiana Academic Standards, Iowa Student Standards, Kansas Academic Standards, Kentucky Academic Standards, Louisiana Academic Standards, Maine Learning Results, Maryland College and Career-Ready Standards, Massachusetts Curriculum Frameworks, Michigan Academic Standards, Minnesota Academic Standards, Mississippi College & Career Readiness Standards, Missouri Learning Standards

Subjects: Mathematics, Science, Technology Education

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

Forward Education

Protecting Pollinators with a Bee Counter

Idaho Content Standards

Mathematics

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

STANDARD / COURSE		Third Grade Standards for Mathematical Practice
CONTENT KNOWLEDGE AND SKILLS / GOAL	MP.1.	Make sense of problems and persevere in solving them.
CONTENT KNOWLEDGE AND SKILLS / GOAL	MP.2.	Reason abstractly and quantitatively.
CONTENT KNOWLEDGE AND SKILLS / GOAL	MP.3.	Construct viable arguments and critique the reasoning of others.
CONTENT KNOWLEDGE AND SKILLS / GOAL	MP.4.	Model with mathematics.
CONTENT KNOWLEDGE AND SKILLS / GOAL	MP.5.	Use appropriate tools strategically.

Idaho Content Standards

Mathematics

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

STANDARD / COURSE		Fourth Grade Standards for Mathematical Practice
CONTENT KNOWLEDGE AND SKILLS / GOAL	MP.1.	Make sense of problems and persevere in solving them.
CONTENT KNOWLEDGE AND SKILLS / GOAL	MP.2.	Reason abstractly and quantitatively.

CONTENT KNOWLEDGE AND SKILLS / GOAL	MP.3.	Construct viable arguments and critique the reasoning of others.
CONTENT KNOWLEDGE AND SKILLS / GOAL	MP.4.	Model with mathematics.
CONTENT KNOWLEDGE AND SKILLS / GOAL	MP.5.	Use appropriate tools strategically.

Idaho Content Standards

Science

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

STANDARD / COURSE	**4-LS.**	**Life Science**
CONTENT KNOWLEDGE AND SKILLS / GOAL	**4-LS-1.**	**From Molecules to Organisms: Structures and Processes**
GLE / BIG IDEA	4-LS-1.1.	Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

Idaho Content Standards

Technology Education

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

STANDARD / COURSE	**ID.ICT.3-5.3.**	**STANDARD 3: KNOWLEDGE CONSTRUCTOR**
CONTENT KNOWLEDGE AND SKILLS / GOAL		**Goal 3: 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.**
GLE / BIG IDEA	ICT.3-5.3.d.	Students explore real-world problems and issues and collaborate with others to find answers or solutions.

STANDARD / COURSE	**ID.ICT.3-5.4.**	**STANDARD 4: INNOVATIVE DESIGNER**
CONTENT KNOWLEDGE AND SKILLS / GOAL		**Goal 4: Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions.**
GLE / BIG IDEA	ICT.3-5.4.d.	Students demonstrate perseverance when working with open-ended problems.

STANDARD / COURSE	**ID.ICT.3-5.5.**	**STANDARD 5: COMPUTATIONAL THINKER**
CONTENT KNOWLEDGE AND SKILLS / GOAL		**Goal 5: Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.**

GLE / BIG IDEA	ICT.3-5.5.a.	Students explore or solve problems by selecting technology for data analysis, modeling and algorithmic thinking, with guidance from an educator.
GLE / BIG IDEA	ICT.3-5.5.c.	Students break down problems into smaller parts, identify key information, and propose solutions.
GLE / BIG IDEA	ICT.3-5.5.d.	Students understand and explore basic concepts related to automation, patterns and algorithmic thinking.

STANDARD / COURSE	**ID.CS.3-5.**	**COMPUTER SCIENCE**
CONTENT KNOWLEDGE AND SKILLS / GOAL	**3-5.IC.**	**Impacts of Computing (IC)**
GLE / BIG IDEA		**Fostering an Inclusive Computing Culture**
OBJECTIVE	3-5.IC.02.	Explore the connections between computer science and other fields. (Grades 3-5)

STANDARD / COURSE	**ID.CS.3-5.**	**COMPUTER SCIENCE**
CONTENT KNOWLEDGE AND SKILLS / GOAL	**3-5.AP.**	**Algorithms and Programming (AP)**
GLE / BIG IDEA		**Creating Computational Artifacts**
OBJECTIVE	3-5.AP.02.	Construct and test problem solutions using a block-based visual programming language, both independently and collaboratively (e.g. pair programming). (Grades K-5)

STANDARD / COURSE	**ID.CS.3-5.**	**COMPUTER SCIENCE**
CONTENT KNOWLEDGE AND SKILLS / GOAL	**3-5.AP.**	**Algorithms and Programming (AP)**
GLE / BIG IDEA		**Testing and Refining Computational Artifacts**
OBJECTIVE	3-5.AP.05.	Understand, explain and debug the sequencing in an algorithm. (Grades 3-5)

STANDARD / COURSE	**ID.CS.3-5.**	**COMPUTER SCIENCE**
CONTENT KNOWLEDGE AND SKILLS / GOAL	**3-5.AP.**	**Algorithms and Programming (AP)**
GLE / BIG IDEA		**Creating Computational Artifacts**
OBJECTIVE	3-5.AP.06.	Construct and test problem solutions using a block-based visual programming language, both independently and collaboratively (e.g. pair programming). (Grades K-5)

STANDARD / COURSE	**ID.CS.3-5.**	**COMPUTER SCIENCE**
CONTENT KNOWLEDGE AND SKILLS / GOAL	**3-5.AP.**	**Algorithms and Programming (AP)**
GLE / BIG IDEA		**Developing and Using Abstractions**
OBJECTIVE	3-5.AP.07.	Construct an algorithm to accomplish a task, both independently and collaboratively. (Grades K-5)

Idaho Content Standards

Technology Education

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

STANDARD / COURSE	**ID.ICT.3-5.3.**	**STANDARD 3: KNOWLEDGE CONSTRUCTOR**
CONTENT KNOWLEDGE AND SKILLS / GOAL		**Goal 3: 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.**
GLE / BIG IDEA	ICT.3-5.3.d.	Students explore real-world problems and issues and collaborate with others to find answers or solutions.

STANDARD / COURSE	**ID.ICT.3-5.5.**	**STANDARD 5: COMPUTATIONAL THINKER**
CONTENT KNOWLEDGE AND SKILLS / GOAL		**Goal 5: Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.**
GLE / BIG IDEA	ICT.3-5.5.a.	Students explore or solve problems by selecting technology for data analysis, modeling and algorithmic thinking, with guidance from an educator.
GLE / BIG IDEA	ICT.3-5.5.c.	Students break down problems into smaller parts, identify key information, and propose solutions.
GLE / BIG IDEA	ICT.3-5.5.d.	Students understand and explore basic concepts related to automation, patterns and algorithmic thinking.

STANDARD / COURSE	**ID.CS.3-5.**	**COMPUTER SCIENCE**
CONTENT KNOWLEDGE AND SKILLS / GOAL	**3-5.IC.**	**Impacts of Computing (IC)**
GLE / BIG IDEA		**Fostering an Inclusive Computing Culture**
OBJECTIVE	3-5.IC.02.	Explore the connections between computer science and other fields. (Grades 3-5)

STANDARD / COURSE	**ID.CS.3-5.**	**COMPUTER SCIENCE**

CONTENT KNOWLEDGE AND SKILLS / GOAL	**3-5.AP.**	**Algorithms and Programming (AP)**
GLE / BIG IDEA		**Creating Computational Artifacts**
OBJECTIVE	3-5.AP.02.	Construct and test problem solutions using a block-based visual programming language, both independently and collaboratively (e.g. pair programming). (Grades K-5)

STANDARD / COURSE	**ID.CS.3-5.**	**COMPUTER SCIENCE**
CONTENT KNOWLEDGE AND SKILLS / GOAL	**3-5.AP.**	**Algorithms and Programming (AP)**
GLE / BIG IDEA		**Testing and Refining Computational Artifacts**
OBJECTIVE	3-5.AP.05.	Understand, explain and debug the sequencing in an algorithm. (Grades 3-5)

STANDARD / COURSE	**ID.CS.3-5.**	**COMPUTER SCIENCE**
CONTENT KNOWLEDGE AND SKILLS / GOAL	**3-5.AP.**	**Algorithms and Programming (AP)**
GLE / BIG IDEA		**Creating Computational Artifacts**
OBJECTIVE	3-5.AP.06.	Construct and test problem solutions using a block-based visual programming language, both independently and collaboratively (e.g. pair programming). (Grades K-5)

STANDARD / COURSE	**ID.CS.3-5.**	**COMPUTER SCIENCE**
CONTENT KNOWLEDGE AND SKILLS / GOAL	**3-5.AP.**	**Algorithms and Programming (AP)**
GLE / BIG IDEA		**Developing and Using Abstractions**
OBJECTIVE	3-5.AP.07.	Construct an algorithm to accomplish a task, both independently and collaboratively. (Grades K-5)

Illinois Learning Standards

Mathematics

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

STATE GOAL / DISCIPLINARY CONCEPT	**IL.K-12.MP.**	**Mathematical Practices**
LEARNING STANDARD / DISCIPLINE	K-12.MP.1.	Make sense of problems and persevere in solving them.

LEARNING STANDARD / DISCIPLINE	K-12.MP.2.	Reason abstractly and quantitatively.
LEARNING STANDARD / DISCIPLINE	K-12.MP.3.	Construct viable arguments and critique the reasoning of others.
LEARNING STANDARD / DISCIPLINE	K-12.MP.4.	Model with mathematics.
LEARNING STANDARD / DISCIPLINE	K-12.MP.5.	Use appropriate tools strategically.

Illinois Learning Standards

Mathematics

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

STATE GOAL / DISCIPLINARY CONCEPT	IL.K-12.MP.	Mathematical Practices
LEARNING STANDARD / DISCIPLINE	K-12.MP.1.	Make sense of problems and persevere in solving them.
LEARNING STANDARD / DISCIPLINE	K-12.MP.2.	Reason abstractly and quantitatively.
LEARNING STANDARD / DISCIPLINE	K-12.MP.3.	Construct viable arguments and critique the reasoning of others.
LEARNING STANDARD / DISCIPLINE	K-12.MP.4.	Model with mathematics.
LEARNING STANDARD / DISCIPLINE	K-12.MP.5.	Use appropriate tools strategically.

Illinois Learning Standards

Science

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

STATE GOAL / DISCIPLINARY CONCEPT	IL.3-LS.	LIFE SCIENCE
LEARNING STANDARD / DISCIPLINE	**3-LS4.**	**Biological Evolution: Unity and Diversity**
DESCRIPTOR / CONTENT DISCIPLINE		**Students who demonstrate understanding can:**

STANDARD	3-LS4-4.	Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.

STATE GOAL / DISCIPLINARY CONCEPT	**IL.3-5-ETS.**	**ENGINEERING DESIGN**
LEARNING STANDARD / DISCIPLINE	**3-5-ETS1.**	**Engineering Design**
DESCRIPTOR / CONTENT DISCIPLINE		**Students who demonstrate understanding can:**
STANDARD	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.
STANDARD	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.
STANDARD	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.

Illinois Learning Standards

Science

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

STATE GOAL / DISCIPLINARY CONCEPT	**IL.4-LS.**	**LIFE SCIENCE**
LEARNING STANDARD / DISCIPLINE	**4-LS1.**	**From Molecules to Organisms: Structures and Processes**
DESCRIPTOR / CONTENT DISCIPLINE		**Students who demonstrate understanding can:**
STANDARD	4-LS1-1.	Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

STATE GOAL / DISCIPLINARY CONCEPT	**IL.3-5-ETS.**	**ENGINEERING DESIGN**
LEARNING STANDARD / DISCIPLINE	**3-5-ETS1.**	**Engineering Design**
DESCRIPTOR / CONTENT DISCIPLINE		**Students who demonstrate understanding can:**
STANDARD	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.
STANDARD	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.
STANDARD	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.

Illinois Learning Standards

Technology Education

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

STATE GOAL / DISCIPLINARY CONCEPT		Illinois Computer Science Standards
LEARNING STANDARD / DISCIPLINE		**Computer Science Practices**
DESCRIPTOR / CONTENT DISCIPLINE	3	Recognizing and defining computational problems.
DESCRIPTOR / CONTENT DISCIPLINE	5	Creating computational artifacts.
DESCRIPTOR / CONTENT DISCIPLINE	6	Testing and refining computational artifacts.

STATE GOAL / DISCIPLINARY CONCEPT		Illinois Computer Science Standards
LEARNING STANDARD / DISCIPLINE		**Computer Science Standards**
DESCRIPTOR / CONTENT DISCIPLINE	**3-5.CS.**	**Computing Systems**
STANDARD		**Troubleshooting**
EXPECTATION	3-5.CS.03.	Determine potential solutions to solve simple hardware and software problems using common troubleshooting strategies.

STATE GOAL / DISCIPLINARY CONCEPT		Illinois Computer Science Standards
LEARNING STANDARD / DISCIPLINE		**Computer Science Standards**
DESCRIPTOR / CONTENT DISCIPLINE	**3-5.DA.**	**Data and Analysis**
STANDARD		**Interference and Models**
EXPECTATION	3-5.DA.07.	Use data to highlight or propose cause-and-effect relationships, predict outcomes, or communicate an idea.

STATE GOAL / DISCIPLINARY CONCEPT		Illinois Computer Science Standards
LEARNING STANDARD / DISCIPLINE		**Computer Science Standards**

DESCRIPTOR / CONTENT DISCIPLINE	**3-5.AP.**	**Algorithms and Programming**
STANDARD		**Algorithms**
EXPECTATION	3-5.AP.08.	Compare and refine multiple algorithms for the same task and determine which is the most appropriate.

STATE GOAL / DISCIPLINARY CONCEPT		**Illinois Computer Science Standards**
LEARNING STANDARD / DISCIPLINE		**Computer Science Standards**
DESCRIPTOR / CONTENT DISCIPLINE	**3-5.AP.**	**Algorithms and Programming**
STANDARD		**Modularity**
EXPECTATION	3-5.AP.11.	Decompose (break down) problems into smaller, manageable subproblems to facilitate the program development process.

STATE GOAL / DISCIPLINARY CONCEPT		**Illinois Computer Science Standards**
LEARNING STANDARD / DISCIPLINE		**Computer Science Standards**
DESCRIPTOR / CONTENT DISCIPLINE	**3-5.ET.**	**Emerging and Future Technologies**
STANDARD	3-5.ET.E.	Create new or original work by applying emerging technologies.

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

STATE GOAL / DISCIPLINARY CONCEPT		**ISTE Standards for Students**
LEARNING STANDARD / DISCIPLINE	**IL.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.**
DESCRIPTOR / CONTENT DISCIPLINE	ISTE-S.3.d.	Build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions.

STATE GOAL / DISCIPLINARY CONCEPT		**ISTE Standards for Students**
LEARNING STANDARD / DISCIPLINE	**IL.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.**
DESCRIPTOR / CONTENT DISCIPLINE	ISTE-S.4.a.	Know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.

DESCRIPTOR / CONTENT DISCIPLINE	ISTE-S.4.b.	Select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.

STATE GOAL / DISCIPLINARY CONCEPT		**ISTE Standards for Students**
LEARNING STANDARD / DISCIPLINE	**IL.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.**
DESCRIPTOR / CONTENT DISCIPLINE	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.
DESCRIPTOR / CONTENT DISCIPLINE	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.
DESCRIPTOR / CONTENT DISCIPLINE	ISTE-S.5.d.	Understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.

Illinois Learning Standards
Technology Education
Grade **4** - Adopted: **2022**

STATE GOAL / DISCIPLINARY CONCEPT		**Illinois Computer Science Standards**
LEARNING STANDARD / DISCIPLINE		**Computer Science Practices**
DESCRIPTOR / CONTENT DISCIPLINE	3	Recognizing and defining computational problems.
DESCRIPTOR / CONTENT DISCIPLINE	5	Creating computational artifacts.
DESCRIPTOR / CONTENT DISCIPLINE	6	Testing and refining computational artifacts.

STATE GOAL / DISCIPLINARY CONCEPT		**Illinois Computer Science Standards**
LEARNING STANDARD / DISCIPLINE		**Computer Science Standards**
DESCRIPTOR / CONTENT DISCIPLINE	**3-5.CS.**	**Computing Systems**
STANDARD		**Troubleshooting**

EXPECTATION	3-5.CS.03.	Determine potential solutions to solve simple hardware and software problems using common troubleshooting strategies.

STATE GOAL / DISCIPLINARY CONCEPT		**Illinois Computer Science Standards**
LEARNING STANDARD / DISCIPLINE		**Computer Science Standards**
DESCRIPTOR / CONTENT DISCIPLINE	**3-5.DA.**	**Data and Analysis**
STANDARD		**Interference and Models**
EXPECTATION	3-5.DA.07.	Use data to highlight or propose cause-and-effect relationships, predict outcomes, or communicate an idea.

STATE GOAL / DISCIPLINARY CONCEPT		**Illinois Computer Science Standards**
LEARNING STANDARD / DISCIPLINE		**Computer Science Standards**
DESCRIPTOR / CONTENT DISCIPLINE	**3-5.AP.**	**Algorithms and Programming**
STANDARD		**Algorithms**
EXPECTATION	3-5.AP.08.	Compare and refine multiple algorithms for the same task and determine which is the most appropriate.

STATE GOAL / DISCIPLINARY CONCEPT		**Illinois Computer Science Standards**
LEARNING STANDARD / DISCIPLINE		**Computer Science Standards**
DESCRIPTOR / CONTENT DISCIPLINE	**3-5.AP.**	**Algorithms and Programming**
STANDARD		**Modularity**
EXPECTATION	3-5.AP.11.	Decompose (break down) problems into smaller, manageable subproblems to facilitate the program development process.

STATE GOAL / DISCIPLINARY CONCEPT		**Illinois Computer Science Standards**
LEARNING STANDARD / DISCIPLINE		**Computer Science Standards**
DESCRIPTOR / CONTENT DISCIPLINE	**3-5.ET.**	**Emerging and Future Technologies**
STANDARD	3-5.ET.E.	Create new or original work by applying emerging technologies.

STATE GOAL / DISCIPLINARY CONCEPT		ISTE Standards for Students
LEARNING STANDARD / DISCIPLINE	**IL.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.**
DESCRIPTOR / CONTENT DISCIPLINE	ISTE-S.3.d.	Build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions.

STATE GOAL / DISCIPLINARY CONCEPT		ISTE Standards for Students
LEARNING STANDARD / DISCIPLINE	**IL.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.**
DESCRIPTOR / CONTENT DISCIPLINE	ISTE-S.4.a.	Know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.
DESCRIPTOR / CONTENT DISCIPLINE	ISTE-S.4.b.	Select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.

STATE GOAL / DISCIPLINARY CONCEPT		ISTE Standards for Students
LEARNING STANDARD / DISCIPLINE	**IL.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.**
DESCRIPTOR / CONTENT DISCIPLINE	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.
DESCRIPTOR / CONTENT DISCIPLINE	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.
DESCRIPTOR / CONTENT DISCIPLINE	ISTE-S.5.d.	Understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.

Indiana Academic Standards

Mathematics

Grade **3** - Adopted: **2023**

STANDARD / STRAND		Mathematics Process Standards
PROFICIENCY STATEMENT / SUBSTRAND	PS.1:	Make sense of problems and persevere in solving them.

PROFICIENCY STATEMENT / SUBSTRAND	PS.2:	Reason abstractly and quantitatively.
PROFICIENCY STATEMENT / SUBSTRAND	PS.3:	Construct viable arguments and critique the reasoning of others.
PROFICIENCY STATEMENT / SUBSTRAND	PS.4:	Model with mathematics.
PROFICIENCY STATEMENT / SUBSTRAND	PS.5:	Use appropriate tools strategically.

Indiana Academic Standards

Mathematics

Grade **4** - Adopted: **2023**

STANDARD / STRAND		Mathematics Process Standards
PROFICIENCY STATEMENT / SUBSTRAND	PS.1:	Make sense of problems and persevere in solving them.
PROFICIENCY STATEMENT / SUBSTRAND	PS.2:	Reason abstractly and quantitatively.
PROFICIENCY STATEMENT / SUBSTRAND	PS.3:	Construct viable arguments and critique the reasoning of others.
PROFICIENCY STATEMENT / SUBSTRAND	PS.4:	Model with mathematics.
PROFICIENCY STATEMENT / SUBSTRAND	PS.5:	Use appropriate tools strategically.

Indiana Academic Standards

Science

Grade **3** - Adopted: **2023**

STANDARD / STRAND		Science and Engineering Practices
PROFICIENCY STATEMENT / SUBSTRAND	SEP.2.	Developing and using models
PROFICIENCY STATEMENT / SUBSTRAND	SEP.6.	Constructing explanations (for science) and designing solutions (for engineering)

PROFICIENCY STATEMENT / SUBSTRAND	SEP.8.	Obtaining, evaluating, and communicating information

STANDARD / STRAND		**Grade 3**
PROFICIENCY STATEMENT / SUBSTRAND	**3-LS4-4.**	**Biological Evolution: Unity and Diversity**
INDICATOR / STANDARD	3-LS4-4.	Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.

STANDARD / STRAND		**Grade 3**
PROFICIENCY STATEMENT / SUBSTRAND	**3-5-ETS1-1.**	**Engineering Design**
INDICATOR / STANDARD	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.

STANDARD / STRAND		**Grade 3**
PROFICIENCY STATEMENT / SUBSTRAND	**3-5-ETS1-2.**	**Engineering Design**
INDICATOR / STANDARD	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.

STANDARD / STRAND		**Grade 3**
PROFICIENCY STATEMENT / SUBSTRAND	**3-5-ETS1-3.**	**Engineering Design**
INDICATOR / STANDARD	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.

Indiana Academic Standards

Science

Grade **4** - Adopted: **2023**

STANDARD / STRAND		**Science and Engineering Practices**
PROFICIENCY STATEMENT / SUBSTRAND	SEP.2.	Developing and using models
PROFICIENCY STATEMENT / SUBSTRAND	SEP.6.	Constructing explanations (for science) and designing solutions (for engineering)

PROFICIENCY STATEMENT / SUBSTRAND	SEP.8.	Obtaining, evaluating, and communicating information

STANDARD / STRAND		**Grade 4**
PROFICIENCY STATEMENT / SUBSTRAND	**4-LS1-1.**	**From Molecules to Organisms: Structures and Processes**
INDICATOR / STANDARD	4-LS1-1.	Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

STANDARD / STRAND		**Grade 4**
PROFICIENCY STATEMENT / SUBSTRAND	**3-5-ETS1-1.**	**Engineering Design**
INDICATOR / STANDARD	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.

STANDARD / STRAND		**Grade 4**
PROFICIENCY STATEMENT / SUBSTRAND	**3-5-ETS1-2.**	**Engineering Design**
INDICATOR / STANDARD	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.

STANDARD / STRAND		**Grade 4**
PROFICIENCY STATEMENT / SUBSTRAND	**3-5-ETS1-3.**	**Engineering Design**
INDICATOR / STANDARD	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.

Indiana Academic Standards

Technology Education

Grade **3** - Adopted: **2023**

STANDARD / STRAND		**Computer Science**
PROFICIENCY STATEMENT / SUBSTRAND		**Data & Information**
INDICATOR / STANDARD		**Learning Outcome: Students select aspects and portions of data to be transformed, clustered, and categorized to provide views and insights about the data.**
EXPECTATION / INDICATOR	3-5.DI.1.	Decompose problems and subproblems into parts as a means to solving complex problems. (E)

STANDARD / STRAND		**Computer Science**

PROFICIENCY STATEMENT / SUBSTRAND		**Computing Devices & Systems**
INDICATOR / STANDARD		**Learning Outcome: Students identify similarities between computing systems to troubleshoot common problems and choose appropriate combinations of hardware and software to accomplish desired tasks.**
EXPECTATION / INDICATOR	3-5.CD.2.	Determine potential solutions to solve simple hardware and software problems using common troubleshooting strategies. (E)

STANDARD / STRAND		**Computer Science**
PROFICIENCY STATEMENT / SUBSTRAND		**Programs & Algorithms**
INDICATOR / STANDARD		**Learning Outcome: Students collaboratively engage in computer program development with consideration of documenting design choices and giving appropriate attributions.**
EXPECTATION / INDICATOR	3-5.PA.1.	Collaborate with peers to implement problem-solving steps to create a variety of programming solutions. (E)

Indiana Academic Standards

Technology Education

Grade **4** - Adopted: **2023**

STANDARD / STRAND		**Computer Science**
PROFICIENCY STATEMENT / SUBSTRAND		**Data & Information**
INDICATOR / STANDARD		**Learning Outcome: Students select aspects and portions of data to be transformed, clustered, and categorized to provide views and insights about the data.**
EXPECTATION / INDICATOR	3-5.DI.1.	Decompose problems and subproblems into parts as a means to solving complex problems. (E)

STANDARD / STRAND		**Computer Science**
PROFICIENCY STATEMENT / SUBSTRAND		**Computing Devices & Systems**
INDICATOR / STANDARD		**Learning Outcome: Students identify similarities between computing systems to troubleshoot common problems and choose appropriate combinations of hardware and software to accomplish desired tasks.**
EXPECTATION / INDICATOR	3-5.CD.2.	Determine potential solutions to solve simple hardware and software problems using common troubleshooting strategies. (E)

STANDARD / STRAND		**Computer Science**
PROFICIENCY STATEMENT / SUBSTRAND		**Programs & Algorithms**
INDICATOR / STANDARD		**Learning Outcome: Students collaboratively engage in computer program development with consideration of documenting design choices and giving appropriate attributions.**
EXPECTATION / INDICATOR	3-5.PA.1.	Collaborate with peers to implement problem-solving steps to create a variety of programming solutions. (E)

Iowa Student Standards

Mathematics

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

STRAND / COURSE		Mathematical Practices
ESSENTIAL CONCEPT AND/OR SKILL	1	Make sense of problems and persevere in solving them.
ESSENTIAL CONCEPT AND/OR SKILL	2	Reason abstractly and quantitatively.
ESSENTIAL CONCEPT AND/OR SKILL	3	Construct viable arguments and critique the reasoning of others.
ESSENTIAL CONCEPT AND/OR SKILL	4	Model with mathematics.
ESSENTIAL CONCEPT AND/OR SKILL	5	Use appropriate tools strategically.

Iowa Student Standards

Mathematics

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

STRAND / COURSE		Mathematical Practices
ESSENTIAL CONCEPT AND/OR SKILL	1	Make sense of problems and persevere in solving them.
ESSENTIAL CONCEPT AND/OR SKILL	2	Reason abstractly and quantitatively.
ESSENTIAL CONCEPT AND/OR SKILL	3	Construct viable arguments and critique the reasoning of others.
ESSENTIAL CONCEPT AND/OR SKILL	4	Model with mathematics.
ESSENTIAL CONCEPT AND/OR SKILL	5	Use appropriate tools strategically.

Iowa Student Standards

Science

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

STRAND / COURSE	IA.3-LS4.	Biological Evolution: Unity and Diversity
ESSENTIAL CONCEPT AND/OR SKILL		**Students who demonstrate understanding can:**
DETAILED DESCRIPTOR	3-LS4-4.	Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.

STRAND / COURSE	IA.3-5-ETS1.	Engineering Design
ESSENTIAL CONCEPT AND/OR SKILL		**Students who demonstrate understanding can:**
DETAILED DESCRIPTOR	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.
DETAILED DESCRIPTOR	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.
DETAILED DESCRIPTOR	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.

Iowa Student Standards

Science

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

STRAND / COURSE	IA.4-LS1.	From Molecules to Organisms: Structures and Processes
ESSENTIAL CONCEPT AND/OR SKILL		**Students who demonstrate understanding can:**
DETAILED DESCRIPTOR	4-LS1-1.	Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

STRAND / COURSE	IA.3-5-ETS1.	Engineering Design
ESSENTIAL CONCEPT AND/OR SKILL		**Students who demonstrate understanding can:**
DETAILED DESCRIPTOR	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.
DETAILED DESCRIPTOR	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.
DETAILED DESCRIPTOR	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.

Iowa Student Standards

Technology Education

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

STRAND / COURSE		CSTA K-12 Computer Science Standards
ESSENTIAL CONCEPT AND/OR SKILL	CSTA.1 B.	Level 1B (Ages 8-11)
DETAILED DESCRIPTOR	1B-AP.	Algorithms & Programming
GRADE LEVEL EXPECTATION		Program Development
EXAMPLE	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)
EXAMPLE	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)
EXAMPLE	1B-AP-17.	Describe choices made during program development using code comments, presentations, and demonstrations. (P7.2)

STRAND / COURSE		CSTA K-12 Computer Science Standards
ESSENTIAL CONCEPT AND/OR SKILL	CSTA.1 B.	Level 1B (Ages 8-11)
DETAILED DESCRIPTOR	1B-IC.	Impacts of Computing
GRADE LEVEL EXPECTATION		Social Interactions
EXAMPLE	1B-IC-20.	Seek diverse perspectives for the purpose of improving computational artifacts. (P1.1)

Iowa Student Standards
Technology Education
Grade **4** - Adopted: **2018**

STRAND / COURSE		CSTA K-12 Computer Science Standards
ESSENTIAL CONCEPT AND/OR SKILL	CSTA.1 B.	Level 1B (Ages 8-11)
DETAILED DESCRIPTOR	1B-AP.	Algorithms & Programming
GRADE LEVEL EXPECTATION		Program Development
EXAMPLE	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)
EXAMPLE	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)
EXAMPLE	1B-AP-17.	Describe choices made during program development using code comments, presentations, and demonstrations. (P7.2)

STRAND / COURSE		CSTA K-12 Computer Science Standards
ESSENTIAL CONCEPT AND/OR SKILL	CSTA.1 B.	Level 1B (Ages 8-11)
DETAILED DESCRIPTOR	1B-IC.	Impacts of Computing
GRADE LEVEL EXPECTATION		Social Interactions
EXAMPLE	1B-IC-20.	Seek diverse perspectives for the purpose of improving computational artifacts. (P1.1)

Kansas Academic Standards

Mathematics

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

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

Kansas Academic Standards

Mathematics

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

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

Kansas Academic Standards

Science

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

STANDARD	KS.3-LS.	LIFE SCIENCE
BENCHMARK	3-LS4.	Biological Evolution: Unity and Diversity
INDICATOR / PROFICIENCY LEVEL		Students who demonstrate understanding can:
INDICATOR	3-LS4-4.	Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.

STANDARD	KS.3-5-ETS.	ENGINEERING DESIGN
BENCHMARK	3-5-ETS1.	Engineering Design
INDICATOR / PROFICIENCY LEVEL		Students who demonstrate understanding can:
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.
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.
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.

Kansas Academic Standards

Science

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

STANDARD	KS.4-LS.	LIFE SCIENCE
BENCHMARK	4-LS1.	From Molecules to Organisms: Structures and Processes
INDICATOR / PROFICIENCY LEVEL		Students who demonstrate understanding can:
INDICATOR	4-LS1-1.	Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

STANDARD	KS.3-5-ETS.	ENGINEERING DESIGN
BENCHMARK	3-5-ETS1.	Engineering Design
INDICATOR / PROFICIENCY LEVEL		Students who demonstrate understanding can:
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.
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.

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.

Kansas Academic Standards
Technology Education
Grade **3** - Adopted: **2019**

STANDARD		**Computer Science Standards – Grade 3**
BENCHMARK		**Algorithms and Programming**
INDICATOR / PROFICIENCY LEVEL		**Program Development**
INDICATOR	3.AP.PD.01.	Create a plan using an iterative process to plan the development of a program while solving simple problems (e.g., storyboard, flowchart, pseudo-code, story map).

Kansas Academic Standards
Technology Education
Grade **4** - Adopted: **2019**

STANDARD		**Computer Science Standards – Grade 4**
BENCHMARK		**Algorithms and Programming**
INDICATOR / PROFICIENCY LEVEL		**Program Development**
INDICATOR	4.AP.PD.01.	Create a plan using an iterative process to plan the development of a program that includes user preferences while solving simple problems.

Kentucky Academic Standards
Mathematics
Grade **3** - Adopted: **2019**

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

Kentucky Academic Standards
Mathematics
Grade **4** - Adopted: **2019**

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

Kentucky Academic Standards

Science

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

STRAND		Third Grade
CATEGORY / GOAL	3-LS4-4.	Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.

STRAND		3-5 Engineering Design
CATEGORY / GOAL	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.
CATEGORY / GOAL	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.
CATEGORY / GOAL	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.

Kentucky Academic Standards

Science

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

STRAND		Fourth Grade
CATEGORY / GOAL	4-LS1-1.	Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

STRAND		3-5 Engineering Design
CATEGORY / GOAL	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.

CATEGORY / GOAL	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.
CATEGORY / GOAL	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.

Kentucky Academic Standards

Technology Education

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

STRAND		**Kentucky Academic Standards (KAS) for Computer Science**
CATEGORY / GOAL		**Algorithms and Programming**
STANDARD / ORGANIZER	**E-AP-04.**	**Decompose precise steps needed to solve a problem. Decomposition is the act of breaking down tasks into smaller tasks. Smaller tasks or sub parts (steps that can be broken down into smaller steps) may be broken down even further. The process of decomposition assists in areas of program development by enabling different people to work on different parts at the same time. Students should demonstrate the process of decomposition by enabling different people to work on different parts of program development at the same time.**
EXPECTATION		**Modularity**
INDICATOR	E-AP-04.3.	Generate and correctly order the steps needed to solve a complex problem.

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

STRAND		**Technology – Primary**
CATEGORY / GOAL		**Big Idea: Information, Communication and Productivity – Students demonstrate a sound understanding of the nature and operations of technology systems. Students use technology to learn, to communicate, to increase productivity and become competent users of technology. Students manage and create effective oral, written and multimedia communication in a variety of forms and contexts.**
STANDARD / ORGANIZER		**Academic Expectations**
EXPECTATION	P.BI1.AE.6.1.	Students connect knowledge and experiences from different subject areas.

STRAND		**Technology – Primary**
CATEGORY / GOAL		**Big Idea: Research, Inquiry/Problem-Solving and Innovation – Students understand the role of technology in research and experimentation. Students engage technology in developing solutions for solving problems in the real world. Students will use technology for original creation and innovation.**
STANDARD / ORGANIZER		**Academic Expectations**
EXPECTATION	P.BI3.AE.5.5.	Students use problem-solving processes to develop solutions to relatively complex problems.
EXPECTATION	P.BI3.AE.6.1.	Students connect knowledge and experiences from different subject areas.

STRAND		**Technology – Primary**
CATEGORY / GOAL		**Big Idea: Research, Inquiry/Problem-Solving and Innovation – Students understand the role of technology in research and experimentation. Students engage technology in developing solutions for solving problems in the real world. Students will use technology for original creation and innovation.**
STANDARD / ORGANIZER		**Primary Skills and Concepts – Inquiry/Problem-solving**

EXPECTATION	P.BI3.SC 2.1.	Gather technology information/data and use for problem solving in all content areas.
EXPECTATION	P.BI3.SC 2.2.	Describe at least one strategy for problem solving while using technology (e.g., inquiry/problem-solving software, troubleshooting technology issues).

Kentucky Academic Standards

Technology Education

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

STRAND		**Technology – Intermediate**
CATEGORY / GOAL		**Big Idea: Information, Communication and Productivity – Students demonstrate a sound understanding of the nature and operations of technology systems. Students use technology to learn, to communicate, increase productivity and become competent users of technology. Students manage and create effective oral, written and multimedia communication in a variety of forms and contexts.**
STANDARD / ORGANIZER		**Academic Expectations**
EXPECTATION	I.BI1.AE.6 .1.	Students connect knowledge and experiences from different subject areas.

STRAND		**Technology – Intermediate**
CATEGORY / GOAL		**Big Idea: Research, Inquiry/Problem-Solving and Innovation – Students understand the role of technology in research and experimentation. Students engage technology in developing solutions for solving problems in the real world. Students will use technology for original creation and innovation.**
STANDARD / ORGANIZER		**Academic Expectations**
EXPECTATION	I.BI3.AE.5 .5.	Students use problem-solving processes to develop solutions to relatively complex problems.
EXPECTATION	I.BI3.AE.6 .1.	Students connect knowledge and experiences from different subject areas.

STRAND		**Technology – Intermediate**
CATEGORY / GOAL		**Big Idea: Research, Inquiry/Problem-Solving and Innovation – Students understand the role of technology in research and experimentation. Students engage technology in developing solutions for solving problems in the real world. Students will use technology for original creation and innovation.**
STANDARD / ORGANIZER		**Intermediate Enduring Knowledge – Understandings**
EXPECTATION	I.BI3.EK.1.	Technology assists in gathering, organizing and evaluating information from a variety of sources to answer essential questions.
EXPECTATION	I.BI3.EK.2.	Technology supports critical thinking skills used in inquiry/problem solving to make informed decisions.

STRAND		**Technology – Intermediate**
CATEGORY / GOAL		**Big Idea: Research, Inquiry/Problem-Solving and Innovation – Students understand the role of technology in research and experimentation. Students engage technology in developing solutions for solving problems in the real world. Students will use technology for original creation and innovation.**
STANDARD / ORGANIZER		**Intermediate Skills and Concepts – Inquiry/Problem-solving**

EXPECTATION	I.BI3.SC2.2.	Use technology to solve problems using critical thinking and problem-solving strategies.
EXPECTATION	I.BI3.SC2.3.	Solve content-specific problems using a combination of technologies.
STRAND		**Technology – Intermediate**
CATEGORY / GOAL		**Big Idea: Research, Inquiry/Problem-Solving and Innovation – Students understand the role of technology in research and experimentation. Students engage technology in developing solutions for solving problems in the real world. Students will use technology for original creation and innovation.**
STANDARD / ORGANIZER		**Intermediate Skills and Concepts – Innovation**
EXPECTATION	I.BI3.SC3.1.	Use technology to organize and develop creative solutions, ideas or product.

Louisiana Academic Standards

Mathematics

Grade **3** - Adopted: **2016/Updated 2017**

STRAND		**Standards for Mathematical Practice**
TITLE	MP.1.	Make sense of problems and persevere in solving them.
TITLE	MP.2.	Reason abstractly and quantitatively.
TITLE	MP.3.	Construct viable arguments and critique the reasoning of others.
TITLE	MP.4.	Model with mathematics.
TITLE	MP.5.	Use appropriate tools strategically.

Louisiana Academic Standards

Mathematics

Grade **4** - Adopted: **2016/Updated 2017**

STRAND		**Standards for Mathematical Practice**
TITLE	MP.1.	Make sense of problems and persevere in solving them.
TITLE	MP.2.	Reason abstractly and quantitatively.
TITLE	MP.3.	Construct viable arguments and critique the reasoning of others.
TITLE	MP.4.	Model with mathematics.
TITLE	MP.5.	Use appropriate tools strategically.

Louisiana Academic Standards

Science

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

STRAND	**LA.SC.3.**	**Science – Grade 3**

TITLE	**3-LS4.**	**BIOLOGICAL EVOLUTION: UNITY AND DIVERSITY**
PERFORMANCE EXPECTATION	3-LS4-4.	Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.

Louisiana Academic Standards

Science

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

STRAND	**LA.SC.4.**	**Science – Grade 4**
TITLE	**4-LS1.**	**FROM MOLECULES TO ORGANISMS: STRUCTURE AND PROCESSES**
PERFORMANCE EXPECTATION	4-LS1-1.	Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

Louisiana Academic Standards

Technology Education

Grade **3** - Adopted: **2008**

STRAND	**LA.ET.**	**Educational Technology**
TITLE		**PreK-12 Educational Technology Content Standards**
PERFORMANCE EXPECTATION	ET.4.	Critical Thinking, Problem Solving, and Decision Making: Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.

STRAND	**LA.ET.**	**Educational Technology**
TITLE		**Performance Indicators for Grades 3-5**
PERFORMANCE EXPECTATION	ET.E.	Identify and investigate a world issue and generate a possible solution using digital tools and resources. (3, 4)

Louisiana Academic Standards

Technology Education

Grade **4** - Adopted: **2008**

STRAND	**LA.ET.**	**Educational Technology**
TITLE		**PreK-12 Educational Technology Content Standards**
PERFORMANCE EXPECTATION	ET.4.	Critical Thinking, Problem Solving, and Decision Making: Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.

STRAND	**LA.ET.**	**Educational Technology**
TITLE		**Performance Indicators for Grades 3-5**
PERFORMANCE EXPECTATION	ET.E.	Identify and investigate a world issue and generate a possible solution using digital tools and resources. (3, 4)

Maine Learning Results

Mathematics

Grade **3** - Adopted: **2020/Implemented 2020**

STRAND / DOMAIN		Standards for Mathematical Practice
CATEGORY / PERFORMANCE INDICATOR	MP1.	Make sense of problems and persevere in solving them: Students will plan strategies to use and persevere in solving math problems.
CATEGORY / PERFORMANCE INDICATOR	MP2.	Reason abstractly and quantitatively: Students will think about numbers in many ways and make sense of numerical relationships as they solve problems.
CATEGORY / PERFORMANCE INDICATOR	MP3.	Construct viable arguments and critique the reasoning of others: Students will explain their thinking and make sense of the thinking of others.
CATEGORY / PERFORMANCE INDICATOR	MP4.	Model with mathematics: Students will use representations to show their thinking in a variety of ways.
CATEGORY / PERFORMANCE INDICATOR	MP5.	Use appropriate tools strategically: Students will use math tools such as tables, diagrams, and technology to explore and deepen their understanding of concepts.

Maine Learning Results

Mathematics

Grade **4** - Adopted: **2020/Implemented 2020**

STRAND / DOMAIN		Standards for Mathematical Practice
CATEGORY / PERFORMANCE INDICATOR	MP1.	Make sense of problems and persevere in solving them: Students will plan strategies to use and persevere in solving math problems.
CATEGORY / PERFORMANCE INDICATOR	MP2.	Reason abstractly and quantitatively: Students will think about numbers in many ways and make sense of numerical relationships as they solve problems.
CATEGORY / PERFORMANCE INDICATOR	MP3.	Construct viable arguments and critique the reasoning of others: Students will explain their thinking and make sense of the thinking of others.
CATEGORY / PERFORMANCE INDICATOR	MP4.	Model with mathematics: Students will use representations to show their thinking in a variety of ways.
CATEGORY / PERFORMANCE INDICATOR	MP5.	Use appropriate tools strategically: Students will use math tools such as tables, diagrams, and technology to explore and deepen their understanding of concepts.

Maine Learning Results

Science

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

STRAND / DOMAIN	NGSS.3-LS.	LIFE SCIENCE

CATEGORY / PERFORMANCE INDICATOR	**3-LS4.**	**Biological Evolution: Unity and Diversity**
STANDARD		**Students who demonstrate understanding can:**
EXPECTATION	3-LS4-4.	Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.

STRAND / DOMAIN	**NGSS.3-5-ETS.**	**ENGINEERING DESIGN**
CATEGORY / PERFORMANCE INDICATOR	**3-5-ETS1.**	**Engineering Design**
STANDARD		**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.

Maine Learning Results

Science

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

STRAND / DOMAIN	**NGSS.4-LS.**	**LIFE SCIENCE**
CATEGORY / PERFORMANCE INDICATOR	**4-LS1.**	**From Molecules to Organisms: Structures and Processes**
STANDARD		**Students who demonstrate understanding can:**
EXPECTATION	4-LS1-1.	Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

STRAND / DOMAIN	**NGSS.3-5-ETS.**	**ENGINEERING DESIGN**
CATEGORY / PERFORMANCE INDICATOR	**3-5-ETS1.**	**Engineering Design**
STANDARD		**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.

Maryland College and Career-Ready Standards

Science

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

STRAND / TOPIC / STANDARD	**NGSS.3-LS.**	**LIFE SCIENCE**
TOPIC / INDICATOR	**3-LS4.**	**Biological Evolution: Unity and Diversity**
INDICATOR / PROFICIENCY LEVEL		**Students who demonstrate understanding can:**
OBJECTIVE	3-LS4-4.	Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.

STRAND / TOPIC / STANDARD	**NGSS.3-5-ETS.**	**ENGINEERING DESIGN**
TOPIC / INDICATOR	**3-5-ETS1.**	**Engineering Design**
INDICATOR / PROFICIENCY LEVEL		**Students who demonstrate understanding can:**
OBJECTIVE	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.
OBJECTIVE	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.
OBJECTIVE	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.

Maryland College and Career-Ready Standards

Science

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

STRAND / TOPIC / STANDARD	**NGSS.4-LS.**	**LIFE SCIENCE**
TOPIC / INDICATOR	**4-LS1.**	**From Molecules to Organisms: Structures and Processes**
INDICATOR / PROFICIENCY LEVEL		**Students who demonstrate understanding can:**
OBJECTIVE	4-LS1-1.	Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

STRAND / TOPIC / STANDARD	**NGSS.3-5-ETS.**	**ENGINEERING DESIGN**
TOPIC / INDICATOR	**3-5-ETS1.**	**Engineering Design**
INDICATOR / PROFICIENCY LEVEL		**Students who demonstrate understanding can:**

OBJECTIVE	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.
OBJECTIVE	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.
OBJECTIVE	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.

Massachusetts Curriculum Frameworks

Mathematics

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

FOCUS / COURSE	MA.MP.	Mathematical Practice
STRAND	MP.1.	Make sense of problems and persevere in solving them.
STRAND	MP.2.	Reason abstractly and quantitatively.
STRAND	MP.3.	Construct viable arguments and critique the reasoning of others.
STRAND	MP.4.	Model with mathematics.
STRAND	MP.5.	Use appropriate tools strategically.

Massachusetts Curriculum Frameworks

Mathematics

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

FOCUS / COURSE	MA.MP.	Mathematical Practice
STRAND	MP.1.	Make sense of problems and persevere in solving them.
STRAND	MP.2.	Reason abstractly and quantitatively.
STRAND	MP.3.	Construct viable arguments and critique the reasoning of others.
STRAND	MP.4.	Model with mathematics.
STRAND	MP.5.	Use appropriate tools strategically.

Massachusetts Curriculum Frameworks

Science

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

FOCUS / COURSE	MA.3-ETS.	Grade 3: Technology/Engineering
STRAND	**ETS1.**	**Engineering Design**

STANDARD / CONCEPT / SKILL	3.3-5-ETS1-1.	Define a simple design problem that reflects a need or a want. Include criteria for success and constraints on materials, time, or cost that a potential solution must meet.
STANDARD / CONCEPT / SKILL	3.3-5-ETS1-2.	Generate several possible solutions to a given design problem. Compare each solution based on how well each is likely to meet the criteria and constraints of the design problem.
STANDARD / CONCEPT / SKILL	3.3-5-ETS1-4(MA).	Gather information using various informational resources on possible solutions to a design problem. Present different representations of a design solution.

Massachusetts Curriculum Frameworks

Science

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

FOCUS / COURSE	**MA.4-LS.**	**Grade 4: Life Science**
STRAND	**LS1.**	**From Molecules to Organisms: Structures and Processes**
STANDARD / CONCEPT / SKILL	4-LS1-1.	Construct an argument that animals and plants have internal and external structures that support their survival, growth, behavior, and reproduction.

FOCUS / COURSE	**MA.4-ETS.**	**Grade 4: Technology/Engineering**
STRAND	**ETS1.**	**Engineering Design**
STANDARD / CONCEPT / SKILL	4.3-5-ETS1-3.	Plan and carry out tests of one or more design features of a given model or prototype in which variables are controlled and failure points are considered to identify which features need to be improved. Apply the results of tests to redesign a model or prototype.
STANDARD / CONCEPT / SKILL	4.3-5-ETS1-5(MA).	Evaluate relevant design features that must be considered in building a model or prototype of a solution to a given design problem.

Massachusetts Curriculum Frameworks

Technology Education

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

FOCUS / COURSE	**MA.3-5.CT.**	**Grades 3 – 5: Computational Thinking (CT)**
STRAND	**3-5.CT.a.**	**Abstraction**
STANDARD / CONCEPT / SKILL	3-5.CT.a.3.	Make a list of sub-problems to consider, while addressing a larger problem.

FOCUS / COURSE	**MA.3-5.CT.**	**Grades 3 – 5: Computational Thinking (CT)**
STRAND	**3-5.CT.b.**	**Algorithms**

STANDARD / CONCEPT / SKILL	3-5.CT.b.1.	Define an algorithm as a sequence of instructions that can be processed by a computer.
STANDARD / CONCEPT / SKILL	3-5.CT.b.4.	Individually and collaboratively create an algorithm to solve a problem (e.g., move a character/robot/person through a maze).
FOCUS / COURSE	**MA.3-5.CT.**	**Grades 3 – 5: Computational Thinking (CT)**
STRAND	**3-5.CT.d.**	**Programming and Development**
STANDARD / CONCEPT / SKILL	3-5.CT.d.1.	Individually and collaboratively create, test, and modify a program in a graphical environment (e.g., block-based visual programming language).

Massachusetts Curriculum Frameworks

Technology Education

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

FOCUS / COURSE	**MA.3-5.CT.**	**Grades 3 – 5: Computational Thinking (CT)**
STRAND	**3-5.CT.a.**	**Abstraction**
STANDARD / CONCEPT / SKILL	3-5.CT.a.3.	Make a list of sub-problems to consider, while addressing a larger problem.
FOCUS / COURSE	**MA.3-5.CT.**	**Grades 3 – 5: Computational Thinking (CT)**
STRAND	**3-5.CT.b.**	**Algorithms**
STANDARD / CONCEPT / SKILL	3-5.CT.b.1.	Define an algorithm as a sequence of instructions that can be processed by a computer.
STANDARD / CONCEPT / SKILL	3-5.CT.b.4.	Individually and collaboratively create an algorithm to solve a problem (e.g., move a character/robot/person through a maze).
FOCUS / COURSE	**MA.3-5.CT.**	**Grades 3 – 5: Computational Thinking (CT)**
STRAND	**3-5.CT.d.**	**Programming and Development**
STANDARD / CONCEPT / SKILL	3-5.CT.d.1.	Individually and collaboratively create, test, and modify a program in a graphical environment (e.g., block-based visual programming language).

Michigan Academic Standards

Mathematics

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

STRAND / STANDARD CATEGORY	MI.CC.MP.3.	Mathematical Practices
STANDARD	MP.3.1.	Make sense of problems and persevere in solving them.
STANDARD	MP.3.2.	Reason abstractly and quantitatively.
STANDARD	MP.3.3.	Construct viable arguments and critique the reasoning of others.
STANDARD	MP.3.4.	Model with mathematics.
STANDARD	MP.3.5.	Use appropriate tools strategically.

Michigan Academic Standards

Mathematics

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

STRAND / STANDARD CATEGORY	MI.CC.MP.4.	Mathematical Practices
STANDARD	MP.4.1.	Make sense of problems and persevere in solving them.
STANDARD	MP.4.2.	Reason abstractly and quantitatively.
STANDARD	MP.4.3.	Construct viable arguments and critique the reasoning of others.
STANDARD	MP.4.4.	Model with mathematics.
STANDARD	MP.4.5.	Use appropriate tools strategically.

Michigan Academic Standards

Science

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

STRAND / STANDARD CATEGORY	MI.SC.2.	Interdependent Relationships in Ecosystems
STANDARD	3-LS4-4.	Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.

STRAND / STANDARD CATEGORY	MI.SC.5.	Engineering Design
STANDARD	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.
STANDARD	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.

STANDARD	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.

Michigan Academic Standards

Science

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

STRAND / STANDARD CATEGORY	MI.SC.3.	Structure, Function, and Information Processing
STANDARD	4-LS1-1.	Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

STRAND / STANDARD CATEGORY	MI.SC.5.	Engineering Design
STANDARD	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.
STANDARD	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.
STANDARD	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.

Michigan Academic Standards

Technology Education

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

STRAND / STANDARD CATEGORY	MI.MITECS.	Michigan Integrated Technology Competencies for Students
STANDARD	**MITECS.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.**
GRADE LEVEL EXPECTATION	MITECS.3.d.	Build knowledge by actively exploring realworld issues and problems, developing ideas and theories, and pursuing answers and solutions.

STRAND / STANDARD CATEGORY	MI.MITECS.	Michigan Integrated Technology Competencies for Students
STANDARD	**MITECS.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.**
GRADE LEVEL EXPECTATION	MITECS.4.b.	Select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.
GRADE LEVEL EXPECTATION	MITECS.4.c.	Develop, test, and refine prototypes as part of a cyclical design process.
GRADE LEVEL EXPECTATION	MITECS.4.d.	Exhibit a tolerance for ambiguity, perseverance, and the capacity to work with open-ended problems.

STRAND / STANDARD CATEGORY	MI.MITECS.	Michigan Integrated Technology Competencies for Students
STANDARD	**MITECS.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.**
GRADE LEVEL EXPECTATION	MITECS.5.a.	Formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions.
GRADE LEVEL EXPECTATION	MITECS.5.d.	Understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.

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

STRAND / STANDARD CATEGORY		Michigan Computer Science Standards
STANDARD		**LEVEL 1B: UPPER ELEMENTARY (GRADES 3-5)**
GRADE LEVEL EXPECTATION		**ALGORITHMS AND PROGRAMMING**
EXPECTATION	1B-AP-11.	Decompose (break down) problems into smaller, manageable subproblems to facilitate the program development process. Subconcept: Modularity; Practice 3.2
EXPECTATION	1B-AP-13.	Use an iterative process to plan the development of a program by including others' perspectives and considering user preferences. Subconcept: Program Development; Practice 1.1, 5.1
EXPECTATION	1B-AP-16.	Take on varying roles, with teacher guidance, when collaborating with peers during the design, implementation, and review stages of program development. Subconcept: Program Development; Practice 2.2
EXPECTATION	1B-AP-17.	Describe choices made during program development using code comments, presentations, and demonstrations. Subconcept: Program Development; Practice 7.2

Michigan Academic Standards

Technology Education

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

STRAND / STANDARD CATEGORY	MI.MITECS.	Michigan Integrated Technology Competencies for Students
STANDARD	**MITECS.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.**
GRADE LEVEL EXPECTATION	MITECS.3.d.	Build knowledge by actively exploring realworld issues and problems, developing ideas and theories, and pursuing answers and solutions.

STRAND / STANDARD CATEGORY	MI.MITECS.	Michigan Integrated Technology Competencies for Students
STANDARD	**MITECS.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.**
GRADE LEVEL EXPECTATION	MITECS.4.b.	Select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.

GRADE LEVEL EXPECTATION	MITECS.4.c.	Develop, test, and refine prototypes as part of a cyclical design process.
GRADE LEVEL EXPECTATION	MITECS.4.d.	Exhibit a tolerance for ambiguity, perseverance, and the capacity to work with open-ended problems.
STRAND / STANDARD CATEGORY	**MI.MITECS.**	**Michigan Integrated Technology Competencies for Students**
STANDARD	**MITECS.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.**
GRADE LEVEL EXPECTATION	MITECS.5.a.	Formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions.
GRADE LEVEL EXPECTATION	MITECS.5.d.	Understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.

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

STRAND / STANDARD CATEGORY		**Michigan Computer Science Standards**
STANDARD		**LEVEL 1B: UPPER ELEMENTARY (GRADES 3-5)**
GRADE LEVEL EXPECTATION		**ALGORITHMS AND PROGRAMMING**
EXPECTATION	1B-AP-11.	Decompose (break down) problems into smaller, manageable subproblems to facilitate the program development process. Subconcept: Modularity; Practice 3.2
EXPECTATION	1B-AP-13.	Use an iterative process to plan the development of a program by including others' perspectives and considering user preferences. Subconcept: Program Development; Practice 1.1, 5.1
EXPECTATION	1B-AP-16.	Take on varying roles, with teacher guidance, when collaborating with peers during the design, implementation, and review stages of program development. Subconcept: Program Development; Practice 2.2
EXPECTATION	1B-AP-17.	Describe choices made during program development using code comments, presentations, and demonstrations. Subconcept: Program Development; Practice 7.2

Minnesota Academic Standards

Science

Grade **3** - Adopted: **2009**

CONTENT STANDARD / DOMAIN	**MN.3.1.**	**The Nature of Science and Engineering**
PERFORMANCE INDICATOR / DOMAIN COMPONENT	**3.1.3.**	**Interactions Among Science, Technology, Engineering, Mathematics, and Society**
INDICATORS OF PROGRESS / STRAND	**3.1.3.4.**	**The student will understand that tools and mathematics help scientists and engineers see more, measure more accurately, and do things that they could not otherwise accomplish.**
INDICATORS OF PROGRESS	3.1.3.4.1.	Use tools, including rulers, thermometers, magnifiers and simple balances, to improve observations and keep a record of the observations made.

CONTENT STANDARD / DOMAIN	**MN.3.4.**	**Life Science**
PERFORMANCE INDICATOR / DOMAIN COMPONENT	**3.4.1.**	**Structure and Function in Living Systems**
INDICATORS OF PROGRESS / STRAND	**3.4.1.1.**	**The student will understand that living things are diverse with many different characteristics that enable them to grow, reproduce and survive.**
INDICATORS OF PROGRESS	3.4.1.1.1.	Compare how the different structures of plants and animals serve various functions of growth, survival and reproduction.

Minnesota Academic Standards

Science

Grade **4** - Adopted: **2009**

CONTENT STANDARD / DOMAIN	**MN.4.1.**	**The Nature of Science and Engineering**
PERFORMANCE INDICATOR / DOMAIN COMPONENT	**4.1.2.**	**Practice of Engineering**
INDICATORS OF PROGRESS / STRAND	**4.1.2.1.**	**The student will understand that engineers design, create and develop structures, processes and systems that are intended to improve society and may make humans more productive.**
INDICATORS OF PROGRESS	4.1.2.1.1.	Describe the positive and negative impacts that the designed world has on the natural world as more and more engineered products and services are created and used.

CONTENT STANDARD / DOMAIN	**MN.4.1.**	**The Nature of Science and Engineering**
PERFORMANCE INDICATOR / DOMAIN COMPONENT	**4.1.2.**	**Practice of Engineering**
INDICATORS OF PROGRESS / STRAND	**4.1.2.2.**	**The student will understand that engineering design is the process of identifying problems, developing multiple solutions, selecting the best possible solution, and building the product.**
INDICATORS OF PROGRESS	4.1.2.2.1.	Identify and investigate a design solution and describe how it was used to solve an everyday problem.
INDICATORS OF PROGRESS	4.1.2.2.2.	Generate ideas and possible constraints for solving a problem through engineering design.
INDICATORS OF PROGRESS	4.1.2.2.3.	Test and evaluate solutions, including advantages and disadvantages of the engineering solution, and communicate the results effectively.

Minnesota Academic Standards

Technology Education

Grade **3** - Adopted: **2009**

CONTENT STANDARD / DOMAIN	**MN.ITL.3-5.**	**Information and Technology Literacy Standards (Refresh 2009)**
PERFORMANCE INDICATOR / DOMAIN COMPONENT	**3-5.3.**	**Technology Use and Concepts: explore multiple technologies, evaluate their suitability for the desired educational or personal task, and apply the tools needed.**
INDICATORS OF PROGRESS / STRAND	**3-5.3.I.**	**Use of Technology**
INDICATORS OF PROGRESS	**3-5.3.I.D.**	**Strategically solve information and technology issues.**
INDICATOR	3-5.3.I.D.1.	Seek assistance to trouble shoot technical problems.

Minnesota Academic Standards

Technology Education

Grade **4** - Adopted: **2009**

CONTENT STANDARD / DOMAIN	**MN.ITL.3-5.**	**Information and Technology Literacy Standards (Refresh 2009)**
PERFORMANCE INDICATOR / DOMAIN COMPONENT	**3-5.3.**	**Technology Use and Concepts: explore multiple technologies, evaluate their suitability for the desired educational or personal task, and apply the tools needed.**
INDICATORS OF PROGRESS / STRAND	**3-5.3.I.**	**Use of Technology**
INDICATORS OF PROGRESS	**3-5.3.I.D.**	**Strategically solve information and technology issues.**
INDICATOR	3-5.3.I.D.1.	Seek assistance to trouble shoot technical problems.

Mississippi College & Career Readiness Standards

Mathematics

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

THEME	**MS.MP.**	**Standards for Mathematical Practice**
SUBJECT	MP.1.	Make sense of problems and persevere in solving them.
SUBJECT	MP.2.	Reason abstractly and quantitatively.
SUBJECT	MP.3.	Construct viable arguments and critique the reasoning of others.
SUBJECT	MP.4.	Model with mathematics.
SUBJECT	MP.5.	Use appropriate tools strategically.

Mississippi College & Career Readiness Standards

Mathematics

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

THEME	MS.MP.	Standards for Mathematical Practice
SUBJECT	MP.1.	Make sense of problems and persevere in solving them.
SUBJECT	MP.2.	Reason abstractly and quantitatively.
SUBJECT	MP.3.	Construct viable arguments and critique the reasoning of others.
SUBJECT	MP.4.	Model with mathematics.
SUBJECT	MP.5.	Use appropriate tools strategically.

Mississippi College & Career Readiness Standards

Science

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

THEME	MS.L.3.	GRADE THREE: Life Science
SUBJECT		**Hierarchical Organization**
STANDARD	**L.3.1.**	**Students will demonstrate an understanding of internal and external structures in plants and animals and how they relate to their growth, survival, behavior, and reproduction within an environment.**
OBJECTIVE	L.3.1.2.	Examine evidence to communicate information that the internal and external structures of plant (e.g., thorns, leaves, stems, roots, or colored petals) function to support survival, growth, behavior, and reproduction.
OBJECTIVE	L.3.1.3.	Obtain and communicate examples of physical features or behaviors of vertebrates and invertebrates and how these characteristics help them survive in particular environments, (e.g., animals hibernate, migrate, or estivate to stay alive when food is scarce or temperatures are not favorable).

THEME	MS.L.3.	GRADE THREE: Life Science
SUBJECT		**Adaptations and Diversity**
STANDARD	**L.3.4.**	**Students will demonstrate an understanding of how adaptations allow animals to satisfy life needs and respond both physically and behaviorally to their environment.**
OBJECTIVE	L.3.4.1.	Obtain data from informational text to explain how changes in habitats (both those that occur naturally and those caused by organisms) can be beneficial or harmful to the organisms that live there.
OBJECTIVE	L.3.4.2.	Ask questions to predict how natural or man-made changes in a habitat cause plants and animals to respond in different ways, including hibernating, migrating, responding to light, death, or extinction (e.g., sea turtles, the dodo bird, or nocturnal species).
OBJECTIVE	L.3.4.4.	Define and improve a solution to a problem created by environmental changes and any resulting impacts on the types of density and distribution of plant and animal populations living in the environment (e.g., replanting sea oats in coastal areas or developing or preserving wildlife corridors and green belts). Use an engineering design process to define the problem, design, construct, evaluate, and improve the environment.

Missouri Learning Standards

Science

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

STRAND: BIG IDEA / STANDARD	MO.3.LS3.	Heredity: Inheritance and Variation of Traits

CONCEPT: GLE / BENCHMARK	**3.LS3.D.**	**Biodiversity and Humans**
GLE / COMPONENT	3.LS3.D.1.	Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change. [Clarification Statement: Examples of environmental changes could include changes in land characteristics, water distribution, temperature, food, and other organisms.]
STRAND: BIG IDEA / STANDARD	**MO.3.ETS1.**	**Engineering Design**
CONCEPT: GLE / BENCHMARK	**3.ETS1.A.**	**Defining and Delimiting Engineering Problems**
GLE / COMPONENT	3.ETS1.A.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.
STRAND: BIG IDEA / STANDARD	**MO.3.ETS1.**	**Engineering Design**
CONCEPT: GLE / BENCHMARK	**3.ETS1.B.**	**Developing Possible Solutions**
GLE / COMPONENT	3.ETS1.B.1.	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.
STRAND: BIG IDEA / STANDARD	**MO.3.ETS1.**	**Engineering Design**
CONCEPT: GLE / BENCHMARK	**3.ETS1.C.**	**Optimizing the Solution Process**
GLE / COMPONENT	3.ETS1.C.1.	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.

Missouri Learning Standards

Science

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

STRAND: BIG IDEA / STANDARD	**MO.4.LS1.**	**From Molecules to Organisms: Structure and Processes**
CONCEPT: GLE / BENCHMARK	**4.LS1.A.**	**Structure and Function**
GLE / COMPONENT	4.LS1.A.1.	Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and plant reproduction. [Clarification Statement: Examples of structures could include thorns, stems, roots, colored petals, heart, stomach, lung, brain, and skin.]
STRAND: BIG IDEA / STANDARD	**MO.4.ETS1.**	**Engineering Design**
CONCEPT: GLE / BENCHMARK	**4.ETS1.A.**	**Defining and Delimiting Engineering Problems**

GLE / COMPONENT	4.ETS1.A.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.

STRAND: BIG IDEA / STANDARD	**MO.4.ETS1.**	**Engineering Design**
CONCEPT: GLE / BENCHMARK	**4.ETS1.B.**	**Developing Possible Solutions**

GLE / COMPONENT	4.ETS1.B.1.	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.

STRAND: BIG IDEA / STANDARD	**MO.4.ETS1.**	**Engineering Design**
CONCEPT: GLE / BENCHMARK	**4.ETS1.C.**	**Optimizing the Solution Process**

GLE / COMPONENT	4.ETS1.C.1.	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.

Missouri Learning Standards

Technology Education

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

STRAND: BIG IDEA / STANDARD		**Computer Science Performance Standards**
CONCEPT: GLE / BENCHMARK		**Algorithms & Programming**
GLE / COMPONENT		**Algorithms**

INDICATOR / PROFICIENCY	3.AP.A.01.	Compare multiple algorithms (sets of step-by-step instructions) for accomplishing the same task verbally and kinesthetically, with robot devices or a programming language.

STRAND: BIG IDEA / STANDARD		**Computer Science Performance Standards**
CONCEPT: GLE / BENCHMARK		**Algorithms & Programming**
GLE / COMPONENT		**Variables**

INDICATOR / PROFICIENCY	3.A.V.01.	Create programs that use variables to store and modify grade level appropriate data.

STRAND: BIG IDEA / STANDARD		**Computer Science Performance Standards**
CONCEPT: GLE / BENCHMARK		**Algorithms & Programming**

GLE / COMPONENT		**Modularity**
INDICATOR / PROFICIENCY	3.AP.M.01.	Decompose (break down) the steps needed to solve a problem into precise sequence of instructions.

Missouri Learning Standards

Technology Education

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

STRAND: BIG IDEA / STANDARD		**Computer Science Performance Standards**
CONCEPT: GLE / BENCHMARK		**Algorithms & Programming**
GLE / COMPONENT		**Algorithms**
INDICATOR / PROFICIENCY	4.AP.A.01.	Compare and simplify multiple algorithms (sets of step-by-step instructions) for accomplishing the same task verbally and kinesthetically, with robot devices or a programming language.

STRAND: BIG IDEA / STANDARD		**Computer Science Performance Standards**
CONCEPT: GLE / BENCHMARK		**Algorithms & Programming**
GLE / COMPONENT		**Modularity**
INDICATOR / PROFICIENCY	4.AP.M.02.	With grade appropriate complexity, modify, remix or incorporate portions of an existing program into one's own work, to develop something new or add more advanced features.