Technovation 2 Scope and Sequence
2026-2027

TEKS Distribution among units

Technology Applications	Principles of Information Technology	Fundamentals of Computer Science	Principles of Applied Engineering

MS Technology Application Content Standards

	Computational Thinking (Technology Applications)	Principles of Information Technology	Fundamentals of Computer Science	Principles of Applied Engineering
Unit 1 Solutions in Coding and Robotics	7.1B 7.1D 7.1E 7.1F 7.2A 7.2B	1.1A, 1.B, 1.C, 1.D, 1.E, 1.F, 1.G, 12.B, 9.A, 9.B, 9.C, 9.D, 9.E, 9.F		
Unit 2 Engineering Design				8A, 8B, 8C, 8D 9A, 9B, 9C, 9D, 9E
Unit 3 Artificial Intelligence Part 1			1.C, 1.D, 1.F, 1.G 2.B, 2.C, 2.D 3.A, 3.B, 3.C, 3.D 4.B,4.C, 4.D, 4.E 4.J, 4.L 5.A, 5.E, 5.F 6.A, 6.D	
Unit 4 Artificial Intelligence Part 2			1.C, 1.D,1.F, 1.G, 2.B, 2.C, 2.D 3.A, 3.B, 3.C 5.A, 5.C, 5.D, 5.E.5.F	

			6.D	

Grading Period 1		
Unit 1: Solutions in Coding and Robotics Estimated Date Range: 8/11 - 10/8 Estimated Time Frame: 41 days		
Assessments		
STATE/NATIONAL ASSESSMENT(S) **TBD**	**DISTRICT ASSESSMENT(S)** **TBD**	**COMMON FORMATIVE ASSESSMENTS (CFAs)** ***(administered within designated concept)*** **N/A**

Concepts within the Unit	TEKS
Norms, Classroom Culture and Artificial Intelligence Framework (3 days) Concept 1 – Decomposing Problems • Lesson 1: Flowcharts with Symbols (3 days)	**<u>Priority Standards</u>** **Technology Applications** **Computational Thinking** 7.1B decompose real-world problems into structured parts using flowcharts **Principles of Information Technology** 1.C- employ effective reading and writing skills 1.D- solve problems and think critically 12.B- identify and explain design elements such as typeface, color, shape, texture, space and form
Concept 2 - Concepts in Text-Based Coding (29 days) • Lesson 1: What is an Algorithm? – Unplugged (3 days) • Lesson 2: Block Based Coding in Minecraft EDU (13 days)	**<u>Priority Standards</u>** **Principles of Information Technology** 9.A- identify the function of compilers and interpreters 9.B- explain the differences between the operation of compilers and interpreters 9.C- identify various computer languages and how the languages are used in software development 9.D- recognize data representation in software development such as string, numeric, character, integer and date 9.3E- identify and explain the concept of algorithms

• Lesson 3: Software Design Process with Text-Based Coding and Lego Spike Prime (10 days) • Lesson 4: Compilers and Interpreters in Coding (3 days)	9.F- describe the flow of a structured algorithm, including linear and iterative instructions such as using a flowchart
Concept 3: Solutions in Automation (8 days) • Lesson 1: Representing Data in a Program Environment with Hummingbird (8 days)	**<u>Important Standards</u>** **Principles of Information Technology** 9.D- recognize data representation in software development such as string, numeric, character, integer and date 1.A- identify and demonstrate work behaviors and qualities that enhance employability and job advancement such as regular attendance, attention to proper attire, maintenance of a clean and safe work environment, pride in work, flexibility, and initiative 1.B- employ effective verbal and nonverbal communication skills 1.C- employ effective reading and writing skills 1.D- solve problems and think critically 1.E- demonstrate leadership skills and function effectively as a team member 1.F- identify and implement proper safety procedures 1.G- demonstrate planning and time-management skills

Grading Period 2

Unit 2: Engineering, Flight and Space

Estimated Date Range: 10/19 - 12/18

Estimated Time Frame: 40 days

Assessments		
STATE/NATIONAL ASSESSMENT(S) **N/A**	**DISTRICT ASSESSMENT(S)** **N/A**	**COMMON FORMATIVE ASSESSMENTS (CFAs)** ***(administered within designated concept)*** **N/A**

Concepts in Unit	**TEKS**

Concept 1 –Blueprints and Control Systems in Engineering (25 days) • Lesson 1: Beginning with Blueprints (3 days) • Lesson 2: Control Systems (22 days)	**<u>Priority Standards</u>** **Principles of Applied Engineering** 8A – describe the application of electrical and mechanical system 8D- describe and apply basic electronic theory 9A – apply the design process as a team participant 9B – assume different roles as a team member within the project 9C – maintain an engineering notebook for the project 9D – develop and test the model for the project 9E – demonstrate communication skills by preparing and presenting the project
Concept 2 – Unmanned Ariel Systems (15 days) • Lesson 1: Drone Discovery (15 days)	**<u>Priority Standards</u>** **Principles of Applied Engineering** 8B - Describe career opportunities in electrical and mechanical systems 8C – identify emerging trends in electrical and mechanical systems 9A – apply the design process as a team participant 9D – develop and test the model for the project 9E – demonstrate communication skills by preparing and presenting the project

Grading Period 3

Unit 3: Artificial Intelligence Foundations Part 1
Estimated Date Range: 1/6 – 3/4
Estimated Time Frame: 39 days

Assessments

STATE/NATIONAL ASSESSMENT(S)	DISTRICT ASSESSMENT(S)	COMMON FORMATIVE ASSESSMENTS (CFAs) *(administered within designated concept)*
N/A	**N/A**	**N/A**

Concepts in Unit	TEKS

Concept 1 – Problem Solving with AI • Lesson 1: Talking to Machines • Lesson 2: Beyond Words • Lesson 3: The AI's Brain • Lesson 4: Smart or Just Predictable? • Lesson 5: Uncovering Contradictions • Lesson 6: Understanding Bias • Lesson 7: AI's Wild Imagination • Lesson 8: Debugging and Refining Outputs • Lesson 9: AI as a Co-Creator • Lesson 10: Remixing, Creativity and Originality • Lesson 11: Ownership, Ethics and Creativity • Lesson 12: AI's Role in Society	**Priority Standards** **Fundamentals of Computer Science** 1.C- employ effective technical reading and writing skills; 1.D - employ effective verbal and non-verbal communication skills; 3.A- seek and respond to advice or feedback from peers, educators, or professionals when evaluating problem solutions; 3.B- debug and solve problems using reference materials and effective strategies 3.C- publish information in a variety of ways such as print, monitor display, web pages, or video. 4.D- demonstrate coding proficiency in a programming language by developing solutions that create stories, games, and animations; 4.L- test program solutions by investigating intended outcomes. 5.E- discuss and give examples of the impact of computing and computing-related advancements on society 5.F- analyze how electronic media can affect reliability of information. 6.A- identify and explain the function of basic computer components (CPU, storage, peripherals) 6.D- describe differences between an application and an operating system. **Important Standards:** 1.F- demonstrate leadership skills and function effectively as a team member; 1.G- demonstrate an understanding of legal and ethical responsibilities in relation to the field of computer science;

	4.B- communicate an understanding of binary representation of data in computer systems, perform conversions between decimal and binary number systems, and count in binary number systems 4.E- communicate an understanding of and use variables within a programmed story, game, or animation 5.A- discuss privacy and copyright laws and model ethical acquisition of digital information by citing sources using established methods; 5.F - analyze how electronic media can affect reliability of information.
Concept 2 – Foundations of AI Programming • Lesson 1: Computing Careers • Lesson 2: Computational Thinking • Lesson 3: Designing Algorithms • Lesson 4: Variables and Data Flow • Lesson 5: Working with Objects • Lesson 6: Functions • Lesson 7: Functions with Parameters • Lesson 8: Introduction to Loops • Lesson 9: Conditional Statements • Lesson 10: Algorithms IRL • Lesson 11: Decomposition • Lesson 12: Two-Way Selection	**Priority Standards** 2.B- create algorithms for the solution of various problems; 2.C- discuss methods and create and publish web pages using a web-based language such as HTML, Java Script, or XML; 2.D- use generally accepted design standards for spacing, fonts, and color schemes to create functional user interfaces, including static and interactive screens. 4.C- identify a problem's description, purpose, and goals; 4.D- demonstrate coding proficiency in a programming language by developing solutions that create stories, games, and animations; 4.L test program solutions by investigating intended outcome **Important Standards:**

• Lesson 13 Pixels of Me Project	1.C - employ effective technical reading and writing skills 1.F- demonstrate leadership skills and function effectively as a team member; 1.G- demonstrate an understanding of legal and ethical responsibilities in relation to the field of computer science 3.A- seek and respond to advice or feedback from peers, educators, or professionals when evaluating problem solutions; 3.B- debug and solve problems using reference materials and effective strategies 3.D- publish information in a variety of ways such as print, monitor display, web pages, or video 4.H- communicate an understanding of and use sequence within a programmed story, game, or animation; 4.I- communicate an understanding of and use conditional statements within a programmed story, game, or animation; 4.J- communicate an understanding of and use iteration within a programmed story, game, or animation; 5.E- discuss and give examples of the impact of computing and computing-related advancements on society 5.F- analyze how electronic media can affect reliability of information. 5.A- discuss privacy and copyright laws and model ethical acquisition of digital information by citing sources using established methods
Concept 3 – AI and the Systems that Power It	**Priority Standards** 2.B- create algorithms for the solution of various problems; 3.B- debug and solve problems using reference materials and effective strategies

	3.C- publish information in a variety of ways such as print, monitor display, web pages, or video. 4.L test program solutions by investigating intended outcome 4.C- identify a problem's description, purpose, and goals; 4.D- demonstrate coding proficiency in a programming language by developing solutions that create stories, games, and animations; 6.A- identify and explain the function of basic computer components (CPU, storage, peripherals) . **Important Standards** 1.F- demonstrate leadership skills and function effectively as a team member; 1.G- demonstrate an understanding of legal and ethical responsibilities in relation to the field of computer science 3.A- seek and respond to advice or feedback from peers, educators, or professionals when evaluating problem solutions; 3.C- publish information in a variety of ways such as print, monitor display, web pages, or video. 4.L test program solutions by investigating intended outcome 5.A- discuss privacy and copyright laws and model ethical acquisition of digital information by citing sources using established methods

	5.E- discuss and give examples of the impact of computing and computing-related advancements on society 5.F- analyze how electronic media can affect reliability of information. 6.C- compare different operating systems; 6.D- describe differences between an application and an operating system. 6.E- use various input, processing, output, and primary/secondary storage devices.

Grading Period 4

Unit 4: Artificial Intelligence Foundations Part 2

Estimated Date Range: 3/15 – 5/27

Estimated Time Frame: 52 days

Assessments

STATE/NATIONAL ASSESSMENT(S)	DISTRICT ASSESSMENT(S) N/A	COMMON FORMATIVE ASSESSMENTS (CFAs) *(administered within designated concept)* N/A

Concepts within the Unit	TEKS
Concept 1 – The Fabric of the Internet and AI • Lesson 1: Introduction to the Internet • Lesson 2: Sending Bits • Lesson 3: IP Addresses • Lesson 4: Routers and Redundancy • Lesson 5: Packets	**Priority Standards** 2.B- create algorithms for the solution of various problem 3.A- seek and respond to advice or feedback from peers, educators, or professionals when evaluating problem solutions; 3.B- debug and solve problems using reference materials and effective strategies

• Lesson 6: HTTP and DNS • Lesson 7: The Digital Divide • Lesson 8: Internet Access Advocacy Campaign Project • Lesson 9: Network Security • Lesson 10: Emerging Technologies • Lesson 11: Network Security Risk Assessment Project	3.C- publish information in a variety of ways such as print, monitor display, web pages, or video. 3.B- debug and solve problems using reference materials and effective strategies **Important Standards** 1.F- demonstrate leadership skills and function effectively as a team member; 1.G- demonstrate an understanding of legal and ethical responsibilities in relation to the field of computer science 5.A discuss privacy and copyright laws and model ethical acquisition of digital information by citing sources using established method 5.C- demonstrate proper digital etiquette and knowledge of acceptable use policies when using networks; 5.D- explain the value of strong passwords and virus detection and prevention for privacy and security 5.E- discuss and give examples of the impact of computing and computing-related advancements on society 5.F- analyze how electronic media can affect reliability of information. 6.D- describe the differences between an application and an operating system
Concept 2: Cybersecurity and Global Impacts • Lesson 1: Innovation Simulation Pt 1 • Lesson 2: Data Policies and Privacy • Lesson 3: The Value of Privacy • Lesson 4: Innovation Simulation Pt 2 • Lesson 5: Security Risks Part 1	**<u>Priority Standards</u>** 5.A discuss privacy and copyright laws and model ethical acquisition of digital information by citing sources using established method 5.C- demonstrate proper digital etiquette and knowledge of acceptable use policies when using networks; 5.D- explain the value of strong passwords and virus detection and prevention for privacy and security **Important Standards** 1.E- solve problems and think critically;

• Lesson 6: Security Risks Part 2 • Lesson 7: Innovation Simulation Pt 3 • Lesson 8: Protecting Data Pt 1 • Lesson 9: Protecting Data Part 2 • Lesson 10: Innovation Simulation Part 4	1.F- demonstrate leadership skills and function effectively as a team member; 1.G- demonstrate an understanding of legal and ethical responsibilities in relation to the field of computer science 2.C- discuss methods and create and publish web pages using a web-based language such as HTML, Java Script, or XML; 3.A- seek and respond to advice or feedback from peers, educators, or professionals when evaluating problem solutions; 3.B- debug and solve problems using reference materials and effective strategies 3.C- publish information in a variety of ways such as print, monitor display, web pages, or video. 5.E- discuss and give examples of the impact of computing and computing-related advancements on society 5.F- analyze how electronic media can affect reliability of information.
Concept 3: Introduction to Data Science • Lesson 1: Intro to Data Science • Lesson 2: Making Sense of Data • Lesson 3: Ethical Data Collection • Lesson 4: Data Rights • Lesson 5: Effective Data Questions • Lesson 6: Data Storytelling • Lesson 7: Intro to Data Visualization	**Priority Standards** 2.B- create algorithms for the solution of various problems **Important Standards** 1.C- employ effective technical reading and writing skills; 1.D- employ effective verbal and non-verbal communication skills; 1.F- demonstrate leadership skills and function effectively as a team member; 1.G- demonstrate an understanding of legal and ethical responsibilities in relation to the field of computer science; 2.D- use generally accepted design standards for spacing, fonts, and color schemes to create functional user interfaces, including static and interactive screens. 2.C- discuss methods and create and publish web pages using a web-based language such as HTML, Java Script, or XML

• Lesson 8: Data Cleaning and Analysis Techniques • Lesson 9: Data Interpretation • Lesson 10: More Visualization Techniques • Lesson 11: Crafting Stories with Data Project	3.A- seek and respond to advice or feedback from peers, educators, or professionals when evaluating problem solutions; 3.C- publish information in a variety of ways such as print, monitor display, web pages, or video