Hamilton Heights School Corporation
Elementary STEM Curriculum Map

Grade Level: KIndergarten-4th (STEM)_Entire Year	Academic Year:2025-2026

Unit: Kindergarten				
Lesson	Specific Resources	Indiana Standards	Objectives	Pacing Guide
10 Apples on Top	Generation Genius	K-2-ETS1-2 Engineering Design	Challenge/Engineering: Students build a tower using playdoh and golf balls. Measurement will be given by counting the # of golf balls---metric ruler and counting centimeters	
Engineering		K-2-ETS1-2 Engineering Design	1. Engineers use science and math to solve problems. 2. Engineers also build and test things. Each time they redesign, the solution can get better. Build Challenge: Using lock-blocks, students will build a platform that can hold a book.	
Digital I.D. of Solid, Liquid, Gas	Seesaw Mystery Science	K-2.DI.1 (In order to	Students will observe and share materials defined by	

		solve a problem, sort information into a useful order) K-2.DI.2 (Identify and collect date using digital tools)	their properties: Solid, Liquid or Gas	
Unit: Kindergarten				
Lesson	Specific Resources	Indiana Standards	Objectives	Pacing Guide
5 Senses			Challenge/Science: Students will investigate and explore their 5 senses. Mystery Scent Cards	
Properties _ Slime		K.PS.1	Challenge/Science: Students will explore and investigate the properties of matter	
Sun Warms the Earth	Generation Genius	K-PS3-1	Make observations to determine the effect of	

			sunlight of Earth's surface	
Sun Blocker Build		K-PS2-2	Build Challenge: Using lock-blocks and white copy paper, students will build a tent that can provide shade	
Hardware VS. Software		K-2.CD.1	Objective: Teaching the difference between software & hardware in a computer system, students will use appropriate terminology to identify parts of the computer by creating a paper learning tool and completing a Seesaw sort.	
Unplugged Coding		K-2.DI.1	Objective: I can code by following directional arrows that are sequenced to find a mystery picture	
Evergreens		K-2-ETS1-2 Engineering Design	How to identify evergreens by their needles (Spruce, Fir, and Pine) Students will practice the engineering design process by building trees using small red cups as materials	

Code.Org	Code. Org	K-2.PA.3.	Coding Basics	
Snowflakes			Objective: I can identify clouds as tiny water droplets. I can identify a snowflake as a frozen water droplet	
Create Rockets	Vivify STEM		Objective: Students will explore astronauts and rocket ships	
Moon Surface _Observations and Predictions	Vivify STEM		Moondust Exploration	
Gravity/Straw Rockets		K-PS2-1.	Objective: Students will learn... _gravity is an invisible force which pulls all objects downward. _Investigate the distance of the rocket to the force of the breath.	
Introduction to wind		K-ESS2-1	I can identify wind as moving air	
Football STEM	Carly and Adam STEM	K-2-ETS1-2	Challenge: Build a football goal post using straws and pipe cleaners.	

Sphero Robotics _ Programmable Robotics	Sphero Balls	K-2.CD.1		
Tooth Discovery _ Toothbrush Innovations		K-2-ETS1-2	Design and improve a toothbrush	
Force _ Push and Pull	Generation Genius	K-PS2-2	Objective: I can identify friction as a FORCE that slows objects down.	
Force and Motion _ 3 Laws of Motion		K-PS2-1	Exploration of how objects—scientifically--mov e	
Sound Energy (Vibrations)	Generation Genius	1.PS.3	I can identify that vibrations make sound	
Castle Building		K-2-ET 1-2	I can plan and build a castle using only cardboard rolls	
Simple Machines		K-2-ETS1-2	I can use a catapult to lift objects with different masses	
Flower Power		K-ESS2-1	I can observe how water makes a flower bloom	
Unit: 1st Grade				
Lesson	Specific Resources	Indiana Standards	Objectives	Pacing Guide
Engineering	Generation Genius	K-2-ETS1-2	I can design/plan/create a	

			structure that can hold a book using toothpicks & gummy candy I can identify an engineering as someone who solves problems using science	
Matter		1.PS.1	I can identify the 3 states of matter _ solid, liquid, gas I can identify oobleck as both a solid and a liquid	
Properties of matter		1.PS.1	I can learn about properties of matter by observation I can create slime and observe its properties	
The Sun	Generation Genius	K-2. E.2	Science_ I can identify that some materials heat faster than others from the sun Engineering_ I can create a structure that will block the sun and protect people from the sun's energy	
Hardware VS. Software	SeeSaw		Teaching the difference between software & hardware in a computer system, students will use appropriate terminology to identify parts of the computer by creating a	

			paper learning tool and completing a Seesaw sort	
Unplugged Coding		K-2.DI.1	I can code by following directional arrows that are sequenced to find a mystery picture	
Evergreens		K-2-ETS1-2	How to identify evergreens by their needles (Spruce, Fir, and Pine) Students will practice the engineering design process by building trees using small red cups as materials	
Code. Org Lesson	Code.Org	K-2.PA.3	Coding Basics	
Measuring Mittens	Jan Brett: The MItten		I can create a non-standard measurement tool and use it to measure objects around the room	
Snowflakes			I can identify clouds as tiny water droplets. I can identify a snowflake as a frozen water droplet	
Clouds			I can identify a cumulus, cirrus, stratus, and cumulonimbus cloud I can identify the type of	

			weather each cloud predicts/forecasts	
Moon Surface_Observations and Predictions	Vivify STEM	1.ESS1	Moondust Exploration	
Gravity/Straw Rockets		K-PS2-1.	Students will learn... 1. gravity is an invisible force which pulls all objects downward. 2.Investigate the distance of the straw rocket from the force of their breath.	
Introduction to wind_ Patterns of Weather		K-2. E.1	I can identify wind as moving air that is created by the sun heating and cooling the atmosphere I can engineer a solution for keeping a paper towel roll standing when a strong wind blows.	
Football STEM	Adam and Carly	K-2-ETS1-2	Challenge: Build a football goal post using straws and pipe cleaners	
Airplanes		K-2. E.2	I can identify the 2 forces that keep an airplane in the air: thrust (engines) and air (wind)	

			I can create my own paper airplane	
Sphero Robotics _ Programmable Robotics		K-2.CD.1	I can drive a Sphero Robot	
Tooth Discovery _ Toothbrush Innovations		K-2-ETS1-2	Design and improve a toothbrush	
Force _ Push and Pull		K-PS2-2	I can identify friction as a FORCE that slows objects down.	
Force and Motion _ 3 Laws of Motion		K-PS2-1	Exploration of how objects—scientifically--move	
Sound Energy (Vibrations)	Generation Genius	1.PS.3	I can identify that vibrations make sound	
Castle Building		K-2-ET 1-2	I can plan and build a castle using only cardboard rolls	
Simple Machines	Generation Genius	K-2-ETS1-2		
Flower Power	Mystery Science	1.LS.2	I can observe how water makes a flower bloom	
Unit: 2nd Grade				
Lesson	Specific Resources	Indiana Standards	Objectives	Pacing Guide

Engineering: World Is Not a Rectangle		K-2-ETS1-2 .	Challenge: Create a structure with rectangle index cards that when finished is not shaped like a rectangle AND for bonus--looks like something in nature.	
Properties of Matter	Seesaw	2-PS1-2	Challenge/Science: Students will explore and investigate the properties of matter. Objective: All matter has unique properties (qualities) that can be observed and measured	
Engineering _ Beach Ball Challenge	Generation Genius	K-2-ETS1-3 .	Challenge: Build a structure using paper, tape, and a beach ball	
Hardware VS. Software	Seesaw	K-2.CD.1	Objective: Teaching the difference between software & hardware in a computer system, students will use appropriate terminology to identify parts of the computer by creating a paper learning tool and completing a Seesaw sort	
Unplugged Coding		K-2.DI.4	Objective: I can code by	

			following directional arrows that are sequenced to find a mystery picture	
Coding _ Introduction to coding	Code.Org	K-2.PA.1	Introduction to coding	
Sphero Robotic		K-2. DL.3	I can calibrate and move a robot I can code a program which moves a robot around a grid to a predetermined spot	
Moon Parachutes _ Engineering	Vivify STEM	K-2-ETS1-1.	Objective: Students will learn Moon facts, explore materials and apply E.D.P to design/create a parachute outcome that has the greatest air resistance and slowest landing	
Water/Snowflakes		2-ESS2-3.	Objective: I can identify water as precipitation. I can create a snowflake using a hexagon shape	
Wind		K-2-ETS1-1	I can identify wind as moving air. I can create a wind turbine to harness its energy	
Buoyancy	Boat Building	K-2. E.2	I can identify buoyancy as the ability of an object to	

			float on water I can design a boat that can float and hold weight	
Force of lift	Helicopters		I can identify the science behind lift as differences in air pressure: Fast moving air. Ping pong ball demonstration Skittles/Straw activity changing air pressure to create lift Airplane hoop challenge _ Styrofoam plan	
Force and Motion	Golf Courses		I can identify that objects move from a force I can identify that there are 3 laws to motion	
Roller Coasters	Roller Coaster Building		What makes a roller coaster move? Kinetic Energy/ Potential Energy Gravity and Friction	
Unit: 3rd Grade				
Lesson	Specific Resources	Indiana Standards	Objectives	Pacing Guide
Engineering: Beach Ball Challenge		3-5. E.2	Challenge: Create a structure that can hold a beach ball using paper and	

			tape	
Matter _ Solid, liquid, gas	Generation Genius		I can classify materials by observable properties Students will record science observations to classify materials by observable properties	
Toy Engineering		3-5-ETS1-1.	Challenge: Plan a solution to the problem of creating a new toy. Choose materials that will provide a slow and soft landing to a small toy	
Google Slides		3-5.DL.2:	I can create a Google Slide presentation that demonstrates/informs the meaning of each pillar of S.T.E.M	
Hardware VS. Software	Seesaw	3-5.CD.1	Objective: Teaching the difference between software & hardware in a computer system, students will use appropriate terminology to identify parts of the computer by creating a paper learning tool and completing a Seesaw sort.	

Unplugged Coding	Code.Org	3-5.DI.4	Objective: I can code by using directional arrows that are sequenced to create a picture on a grid.	
Sleigh Races _ Engineering		3-5-ETS1-1	Objective: Using limited materials, I can plan, create, test/improve a sleigh that will carry cargo down a ramp	
Coding	Code.Org	3-5. PA.3	Introduction to coding	
Moon Landers _ Engineering	Vivify STEM	3-PS2-2	Using limited materials students design, plan, and collaborate to create a device that when dropped can still hold two balls inside a cup.	
Water Cycle _ Engineering		3-ESS2-3.	I can create a snowman using copy paper, tissue paper, pipe cleaners, straws. I can describe the water cycle in 3 words: Evaporation, Condensation, Precipitation	
Wind _ Engineering Toothpick Structures		3-ESS3-1	I can identify wind as moving air that the sun	

			creates. I can plan, design and collaboratively construct a structure that can withstand a strong wind.	
Sphero Robotics		3-5. PA.1	I can calibrate and move a robot I can code a program which moves a robot around a maze without going over the lines	
Buoyancy		3-PS2-2	I can identify buoyancy as the ability of an object to float on water I can design a boat that can float and harness the wind to propel forward	
Force of lift	Ping pong ball demonstration Skittles/Straw activity changing air pressure to create lift Airplane hoop challenge _ Styrofoam plane		I can identify the science behind lift as differences in air pressure: Fast moving air.	
Force and Motion _ Engineering		3-PS2-1	I can identify that objects move from a force I can identify that there are	

			3 laws to motion I can plan and collaboratively create a car which moves using limited materials	

Unit: 4th Grade				
Lesson	Specific Resources	Indiana Standards	Objectives	Pacing Guide
Greek Architecture Column Testing to determine which shape holds the most books. Record data on the whiteboard. Temple Design			I can test column shapes to determine which shape (circle, triangle, and square) can hold the most weight	
Newspaper Challenge • Plan and design newspaper tower that is freestanding and can hold weight		3-5 E.2	I can create a tower using newspaper to create a bookstand.	
Civil Engineering: • Design, collaborate and build the longest bridge possible using craft sticks and clothespins		3-5 E.2	I can create a bridge using craft sticks and clothespins	
Properties of Matter_ Solid, liquid and Gas • Students record data to classify slime's material observable properties			I can create slime to observe its properties of color, weight, viscosity and texture	

Unplugged Coding		3-5 DI.4	I can code my name using binary language	
Coding_Introduction to Coding	Code.Org	3-5 PA.3	I can create computer programs using Code.Org	
Sphero Robotics	Spheros	3-5. PA.1	I can program a Sphero robot to move around a grid	
Reindeer_Patterns of migration_ Facts of Species Engineering_Science of Bobsled Racing • Design, collaborate and build a sled using limited materials	Youtube	4.LS2	I can create a sleigh that can travel down a ramp	
Water Cycle_ Snowflakes_Igloos_ Avalanche Prevention With limited materials, design, collaborate, and create an igloo that is able to hold weight	Youtube	3-5-ETS1-1.	I can create an igloo that can hold weight	
Moon Landers_ Engineering • Using limited materials, plan, collaborate and create a device that when dropped can still hold 2 balls inside a cup	Vivify STEM	4.ESS1	I can create a moon lander that can hold 2 ping pong in a cup after landing	
4th Grade_ 24-25				
Lesson	Specific Resources	Indiana Standards	Objectives	Pacing Guide
Wind_ Engineering Wind		4.PS.4	I can create a structure	

• Plan, collaborate and create a structure that can withstand a strong wind			that can withstand the force of a strong wind	
Force and Motion_ Engineering • Using the 3 laws of motion as reference, plan, collaborate and create a car using limited materials		3-PS-1	I can create a car that can roll down a ramp.	
Bouyancy_ Boat Engineering • Plan, collaborate and create a cardboard boat.		3-PS-1	I can create a cardboard board that can travel across a pool	