

Course Title:	Kindergarten: STEM
Grade(s):	Kindergarten

Course Description
Our STEM program features a purposeful, foundational, play-based environment structured around ISTE and STEL standards. By integrating engineering and design principles with core mathematics and science concepts, we cultivate 21st-century learners. Through hands-on exploration, students develop critical fine motor skills, collaborative problem-solving abilities, and a capacity for reflective thinking. Our curriculum encourages academic risk-taking and effective communication, transforming natural curiosity into a sophisticated foundation for lifelong inquiry, innovation, and community stewardship.
Approved Curricular Materials/Textbook(s)
Code.org : Course A Code A Pillar Robots Code A Pillar App Bridges in Mathematics 3rd Edition Lego Education Open Sci Ed

Unit Title	Unit Description (Include Unit Objectives)	Unit Pacing
Introduction to STEM	In this introductory unit, Kindergarteners learn about what STEM is, and the routines and practices of the STEM Lab. Students have a chance to review what will be learned in STEM for the coming year and brainstorm their hopes and dreams.	2 Sessions
Unit 1: Coding	This computer science unit is geared towards beginning readers. Students will learn to program using commands like loops and events. The lessons featured in this course also teach students to meaningfully collaborate with others, investigate different problem-solving techniques, persist in the face of challenging tasks, and learn about internet safety.	5-6 Sessions

Unit 2: Robotics	In this unit, students will explore coding and robotics by working hands-on with the Code-A-Pillar robot. They will discover that code is a set of instructions that tells computers how to function, whether they are inside a toy, a car, or an elevator. To practice these skills, students will take on roles as "Coders" and "Observers," learn a symbolic language for commands, and write their own algorithms. Finally, they will program their robots by twisting dials and working with partners to test if their instructions work correctly.	4 Sessions
Unit 3: Engineering & Design	In this Kindergarten unit, students are introduced to the world of STEM by learning how engineers find solutions to everyday problems. Students discover that an engineer is someone who uses math, science, and creative thinking to design new things and create technology. Throughout the unit, children explore various examples of technology—ranging from simple tools like pencils and scissors to more complex items like computers—and learn to distinguish these man-made objects from things found in nature, such as trees or bird nests. To solve problems effectively, students practice the Engineering Design Process, which follows five key steps: Ask, Imagine, Plan, Create, and Improve.	2 Sessions
Unit 4: Science - Pushes & Pulls	In this unit, students dive into the world of pushes and pulls to discover how forces shape movement. By experimenting with strength and direction, students get hands-on experience seeing exactly how objects react when the "rules" of motion change.	2 Sessions
Unit 5: Science - Weather & Seasons	In this unit, students become weather detectives, gathering evidence to identify daily and seasonal patterns. By analyzing characteristics like wind, clouds, temperature, and precipitation, they solve real-world mysteries—from why we shed layers during the day to why birds nest in the spring. Students will also explore the science of storms and severe weather, learning how to interpret professional forecasts and use their own data to predict and prepare for a variety of weather events safely.	2 Sessions
Unit 6: Science - Sunlight & Warmth	In this unit, students explore the science of heat transfer by observing the Sun's energy in action. After documenting how sunlight warms various surfaces, students will shift into the role of designers—exploring how different materials and	2 Sessions

	shadows can be used to create cooler environments and block solar radiation.	
Unit 7: Science - Plant & Animal Needs	In this unit, students investigate the essential requirements for life by observing both plants and animals. They will explore how water and sunlight fuel the journey from seed to seedling, while simultaneously examining how animals seek out food and shelter to survive. Beyond just identifying needs, students will analyze how animals actively reshape their environments to create safe homes, providing a complete picture of how organisms interact with the world around them to grow and thrive.	2 Sessions
Unit 8: Sink or Float	In this unit, students conduct water play experiments. They categorize, count, and record the data from each experiment. In this unit, students become water scientists as they plunge into hands-on experiments to uncover the secrets of how water moves and behaves. Using the power of play, students will: ● Experiment: Test how water flows, pours, and interacts with different tools. ● Analyze: Sort and categorize their findings like real researchers. ● Track: Use numbers to count and record data, turning splashes into "science stats!"	2 Sessions