CURRICULUM

GRADE 1-5 YEAR 2

S.no	Kit/Platform Used	Concept Covered with Activity / Project Name	Activity/Project Details or Coverage	Inter-Disciplinary Learning Outcome around STEM/Maths/Science
1	Pre-assessment Quiz : Robots			
2	 Block based construction kit	Power press machine	Craft functional Power Press with gears, exploring motion conversion via block-based construction kit, linking gears and learning mechanics.	**Basic Understanding:** Recognize simple machines, like levers and wheels, and how they help in everyday tasks**.** **Counting and Measurement:** Learn to count and measure**.** **Exploring with Play:** Engage in fun activities to explore the connection between real and pretend, like making toy cars move with ramps.
3		Waving Robot	Create a waving robot with blocks: grasp links and joints, crafting a robotic hand that elegantly waves in motion.	**Robot Waving Fun:** Build a friendly robot that waves hello, exploring STEM and science. **Perfectly Placed Parts:** Learn to assemble and position robot components for smooth movement. **Coding Adventures:** Begin your coding journey to make the robot wave at your command.
4		Powder pounding machine	Construct Powder Pounding Machine with crank-slider mechanism using block-based kit, achieving precise output through hands-on engineering.	**Basic Engineering Understanding:** Create simple mechanical structures, learn about how things move. **Measurement Skills:** Practice using tools for size and quantity, explore basic math concepts in play. **Curiosity and Exploration:** Ask questions about the world, explore how things change and work together.
5	Quiz: Mechanical Construction			
6	Project - 1: Theme- UN Goal -9 (INDUSTRY, INNOVATION AND INFRASTRUCTURE)			
7	 Mechatron	Table Fan Bot	Construct a table fan bot using Mechatron kit, merging engineering and physics concepts to create a functional and educational model.	**Hands-On Exploration:** Assemble a simple fan to discover the basics of how things work. **Science Adventures:** Investigate how air moves and impacts everyday objects. **Math Magic:** Learn how to measure and compare sizes and angles in a fun and engaging way.
8		Robo Car	Build and race a car using Mechatron kit, merging STEM concepts with hands-on engineering, fostering creativity and excitement.	**Car Building Fun:** Assemble a simple car, learning about how things move. **Speed and Distance:** Explore how fast and far objects can travel. **Math Magic:** Practice basic math by counting, measuring, and creating.
9		Robo Crane	Construct a functional crane with Mechatron kit, engaging STEM principles through assembling, robotics, and hands-on learning.	**Building with Machines:** Create a simple crane, exploring how machines work. **Shapes and Structures**: Use shapes to build sturdy structures. **Discovering Forces:** Learn how things move and lift with basic science.
10	Quiz : Gears			
11	Project - 2: Theme- CLIMATE ACTION (UN Goal -13)			
12	Paper circuit Kit	Smiling Girl	Create a smiling girl design using paper circuitry, adding LEDs to illuminate her eyes with a delightful glow.	**Circuit Exploration:** Discover the world of circuits to build a basic understanding of electricity and STEM concepts. **Mathematical Discovery:** Explore simple measurements and calculations, connecting math to everyday designs and activities. **Creative Expression:** Merge art and technology to encourage imaginative and interdisciplinary skills.

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13	Paper circuit Kit 	Laughing Boy	Create a paper circuit laughing boy. Add LEDs to eyes for glowing effect. Combine art and electronics creatively.	**Creative Fusion:** Combine art and electronics to create a glowing masterpiece. **Electricity Exploration:** Discover the basics of circuits while sparking creativity. **Geometry Play:** Explore shapes for precise LED arrangements, enhancing math skills.
14		Robot	Create a paper circuit robot; add LED lights to its eyes, teaching basic electronics through hands-on crafting.	**Exploring Simple Circuits:** Learn about basic circuits, introducing STEM and science concepts in a fun way. **Puzzle-Solving Fun:** Solve circuit puzzles and design simple connections to boost problem-solving skills and critical thinking. **Crafty Electronics:** Create paper circuit artwork, nurturing hands-on STEM exploration and creativity.
15		Flower birdy	Create a flowery bird using paper circuit. Add LEDs to flower petals for a vibrant, illuminating design.	**Discovering Circuits:** Explore how circuits work by lighting up flower petals, sparking an interest in STEM concepts. **Creative Shapes and Patterns:** Dive into the world of shapes and symmetry, connecting math with imaginative design. **Hands-On Science Fun:** Engage in exciting science experiments, applying basic principles through interactive activities.
16	Quiz: Paper Circuit			
17	Project - 3: Theme- GOAL 14: Life Below Water (UN Goal -14)			
18	SMART Circuit 	CONDUCTIVITY TESTER	Difference between conductor and insulator. How to make a circuit to make a conductivity tester.	**Sparkling Discoveries:** Explore conductivity, circuits, and components through fun, hands-on activities. **Puzzle Solvers:** Develop problem-solving skills while playing with circuits and finding solutions. **Math Magic:** Learn about open and closed circuits while enhancing math skills in an engaging way.
19		SUNRISE INDICATION	What is LDR and where it is used? What is resistor and its working. Connection of LDR, and LED and their outcome.	**Circuit Basics:** Discover how electricity flows and the roles of components by stacking modules in a fun, hands-on activity. **Scientific Exploration:** Investigate light, rotation, and sensors by assembling a sunrise indicator, igniting curiosity. **Math and Science Fun:** Play with angles, measurements, and sequences while creating working circuits, making learning enjoyable and practical.
20		DIMMER CIRCUIT	Learn about potentiometer. Applications of potentiometer.	**Light Control:** Discover how to adjust the brightness of a light and observe its changes. **Simple Circuits:** Explore connecting components and understand how they work together. **Fun Science:** Engage in hands-on activities to learn about light, electricity, and basic components.
21		CAR SEAT BELT WARNING DISPLAY	How to use two switches in the circuit? Make the buzzer alarm when person is not wearing th bellt.	**Simple Circuits:** Explore the concept of circuits by connecting simple components. **Safety Awareness:** Learn about safety through pictures and simple instructions. **Hands-On Exploration:** Discover STEM by putting together magnetic blocks for interactive learning.
22	Quiz: SMART Circuit			
23	MicroBIT	direction blinking arrow	A direction blinking arrow using Microbit is a project that displays an arrow symbol on the LED matrix of the Microbit, which blinks in a specific direction to indicate a desired direction or instruction.	**Arrow Patterns Fun:** Create simple arrow patterns using code and have fun while learning STEM and ICT basics. **Blinking Time Exploration:** Explore how lights blink and understand basic timing for different blinking directions. **Creative Message Making:** Use Microbit's LED matrix to craft and send creative instructions visually.

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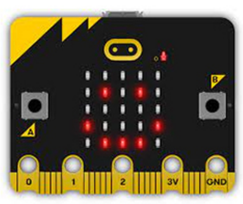
24	MicroBIT 	Name badge	A name badge using Microbit is a personalized identification tag that displays a person's name or any desired text on the LED matrix of the Microbit device. It allows individuals to create their own digital name badge that can be worn or displayed.	**Coding Exploration:** Explore the world of coding by creating fun and simple patterns on Microbit LED displays. **Mathematical Patterns:** Discover shapes and letters to make your own creative messages while learning about patterns and basic math. **Tech Fun:** Have fun with technology and science as you create wearable and interactive identification using simple, hands-on activities.
25		clap heart	A clap heart using Microbit is an interactive project that creates a visual display of a heart symbol on the LED matrix when a clap sound is detected. It combines sound sensing and visual feedback to create a fun and engaging experience.	**Exploring Sound and Light:** Discover the connection between making sounds and lighting up LEDs, enhancing sensory awareness. **Math with Time:** Learn about time intervals through fun coding activities, reinforcing basic math concepts. **Technology Play:** Engage with technology by using a Microbit's sound sensor for interactive and creative learning experiences.
26		sunlight sensor	sunlight sensor using Microbit is a device that measures the intensity of sunlight or ambient light. It allows you to detect and quantify the amount of light present in the environment.	**Scientific Discovery:** Explore and observe sunlight's brightness, fostering an interest in the environment and science. **Mathematical Exploration:** Begin to understand basic data concepts by interpreting simple light intensity information. **Tech Connection:** Learn to use technology like Microbit for simple environmental observations.
27	Quiz: MicroBit			
28	Project - 4: Theme Good Health and Well-being (UN Goal -3)			
29	Tinker 'N' Design 	Bicycle	Use STEMROBO Kit's stencils, 3D pen to design, build detailed bicycle model, fostering creativity and spatial skills	**Basic Mechanics Appreciation:** Understand simple machine concepts, like wheels and levers, to inspire early STEM exploration. **Measurement Skills:** Develop foundational math skills to measure and assemble basic objects, like blocks and puzzles. **Fun with Motion:** Discover the excitement of motion and explore basic concepts of speed, direction, and balance through hands-on play.
30		Square pyramid	Use 3D pen & stencils to craft square pyramid, blending art & geometry in STEMROBO Tinker N Design Kit.	**Shapes Exploration:** Explore and recognize basic pyramid shapes through hands-on assembly, understanding their simple forms. **Measurement Fundamentals:** Develop foundational math skills by measuring dimensions for creating pyramids, enhancing accuracy. **Building with Balance:** Gain an introductory understanding of balance and stability when constructing square pyramids, integrating simple scientific principles.
31		Butterfly effect	Use 3D pen & stencils to craft vibrant butterflies, exploring art, design, and spatial concepts creatively	**Shape Creations:** Build butterfly wings using basic shapes, connecting math and art in a fun way. **Building Discoveries:** Construct a strong structure, learning science and basic engineering principles through hands-on exploration.
32	Quiz: Tinker 'N' Design			

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33	 Basic Programming (AI-Connect)	Print statement, data types	Code with block based python to print a statement and learn about different data types in python	**Math Magic:** Use math concepts to understand and play with numbers. **Curious Explorers:** Discover how AI handles data in a fun and simple way. **STEM Adventures:** Begin your STEM journey through exciting AI activities.
34		Display week days	Program to display different days of the week on screen	**Math Integration:** Use math to program and display weekdays. **STEM Adventure:** Discover AI for improved problem-solving. **Science Discovery:** Learn about time with the help of AI.
35		Think a number	Program to think of a random number and perform some arithmetic operations on it.	**Math Skills:** Improve basic math skills through fun number activities and games. **Scientific Inquiry:** Foster curiosity by discovering how coding can solve simple everyday challenges. **STEM Exploration:** Introduce AI concepts in an age-appropriate way during math and science lessons.
36		Design calculator	Program to create a calculator using python programming	**Basic Math Skills:** Develop foundational math skills through engaging activities. **Introduction to Science:** Discover how technology helps solve everyday problems. **STEM Exploration:** Begin to understand the connections between math, science, and technology.
37	Quiz: AI Connect			
38	Project - 5: Industry, Innovation and Infrastructure (UN Goal -9)			