



RoboLAB is a year-long robotics program aimed at implementing technology enhanced learning in classrooms. It aims to promote robotics as a tool for application of concepts learnt by students in classroom using STEM (Science, technology, Engineering and Mathematics) integration by creating multiple intelligence based learning environment. RoboLAB provides an opportunity to rediscover and redesign learning by engaging students in an inquiry based approach to collaborate and be creative in solving open ended robotic challenges.

Curriculum Coverage for September:

Grade 4:

Topic Name	Activity Description	Science, Technology, Engineering & Mathematical Relevance	Key Words
Let's start building	Construction of ramps of varying height to explore relationship between the height of inclined plane and the distance travelled by the ball.	Science- Identification of inclined plane as simple machine. Mathematics- Understand measurable attributes of object and process of measurement, Apply appropriate techniques	Robotics Simple machine Design Build Problem solving
Catapult challenge	Construction of a catapult and identify the effective position of fulcrum to increase the distance an object moves.	Science- Identification of lever as simple machine. Mathematics- Build new knowledge through problem solving.	Energy Lever
My first toy car	Construction of a car to observe how stored energy gets converted into movement energy.	Science- Conservation of energy.	

Grade 5:

Topic Name	Activity Description	Science, Technology, Engineering & Mathematical Relevance	Key Words
Looking at Butterflies!	Construction of a robotic butterfly	Science - Use of hinge joints. Technology -Relating to real world examples through technology.	Design build problem solving Simple machine Hinge
Magnifying shapes.	Construction of pantograph.	Technology -Role of society in development and use of technology. Mathematics : Ratio & Proportion.	Programming Algorithm Brick Forever Block
Let's start THINKing.	Introduction to THINK, Programming the i-Pitara brick to display message on LCD screen, play sounds. Use of forever block.	Science -Understanding science and technology. Technology -Algorithm development, Introduction to sequential programming.	
Blinking lights \ Glowing lights	Programming the LED to glow for a specified time.	Technology -Algorithm development, sequential programming.	

Grade 6:

Topic Name	Activity Description	Science, Technology, Engineering & Mathematical Relevance	Key Words
Fun and Games	Explore the application of robots in sports. Construction of a remote controlled robot that can kick a ball.	Technology - Develop an understanding of the role of society in the development and use of technology. Mathematics -Apply and adapt a variety of appropriate strategies to solve problems.	Design motors build Think problem solving Simple machine Programming Forward Backward block Buzzer
Let's start THINKing.	Introduction to THINK, Programming the i-Pitara brick to	Science -Understanding science and technology.	

	display message on LCD screen, play sounds. Use of forever block.	Technology -Algorithm development, Introduction to sequential programming.	Algorithm
My first autonomous car	Construction of an autonomous car and programming it to move forward and backward for a specified time.	Technology -Algorithm development, sequential programming. Mathematics -Develop and demonstrate spatial sense, Specify location and describe spatial relationships using programming (Geometry).	
Create your own music.	Program the i-Pitara brick to blow the buzzer, play various tunes. Using multiple	Technology - Algorithm development, sequential programming.	

Grade 7

Topic Name	Activity Description	Science, Technology, Engineering & Mathematical Relevance	Key Words
Keeping our Surroundings clean- I	Construction of a remote controlled complex machine that helps in cleaning and mopping a surface, Identifying the simple machines present in this complex machine.	Science -Use of simple machines to build a complex machine, Importance of living in clean surroundings. Technology -Relating to real world examples through technology, Role of society in development and use of technology.	Design Build Simple machine Complex machine Problem solving Programming Algorithm Sensor
Let's start Thinking.	Introduction to THINK, Programming the i-Pitara brick to display message on LCD screen, play sounds. Use of forever block.	Science -Understanding science and technology. Technology -Algorithm development, Introduction to sequential programming.	
My first autonomous car	Construction of an autonomous car and programming it to move forward and backward for a specified time.	Technology -Algorithm development, sequential programming. Mathematics -Develop and demonstrate spatial sense, Specify location and describe spatial relationships using programming (Geometry).	

My robotic fan	Construction & programming a fan to rotate for a specified time.	Technology -Algorithm development, sequential programming.	
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Grade 8:

Topic Name	Activity Description	Science, Technology, Engineering & Mathematical Relevance	Key Words
Lift that heavy load	Discussion on disaster management machines. Construction of a remote controlled crane	Science - Machines used for disaster management, Integration of simple machines to build a complex machine. Technology - Relating to real life technologies.	Design Build Problem solving Programming Algorithm
Let's start Thinking.	Introduction to THINK, Programming the i-Pitara brick to display message on LCD screen, play sounds. Use of forever block.	Science -Understanding science and technology. Technology -Algorithm development, Introduction to sequential programming.	Forward backward Touch Sensor
I respond to only touch	Construction of an autonomous car using touch sensor and programming it to detect obstacles.	Technology - Exploring digital sensor (i-Pitara touch sensor), Algorithm development, Use of multiple control construct IF. Mathematics - Represent mathematical situations using algebraic symbols, Analyse change in various contexts (Algebra).	

Kind regards

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