



September/October 2016

RoboLAB is a yearlong 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.

Session Name	Description	Science, Technology, Engineering & Mathematics Relevance	Key Words
Le bu	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 to determine measurements.	Simple machine Lever Design Build
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.	Problem solving Energy
My first toy car	Construction of a car to observe how stored energy gets converted into movement	Science- Conservation of energy.	

The Core Competency Focus: Problem solving-creative-cooperative-project based learning-critical thinking

How Can You Help? Please could you make sure your children bring; robotics book, pen (black or blue) and pencil for all Robotics lessons and help your children to learn the meanings of the key words.

Curriculum Content for September/October

Grade 4:**Grade 5:**

Session Name	Activity Description	Science, Technology, Engineering & Mathematics Relevance	Key Words
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.	Design Motors Build Problem solving Simple machine Programming Buzzer Algorithm
Blinking lights & glowing lights	Programming the LED to glow for a specified time.	Technology- Algorithm development, sequential programming.	
Create your own music.	Program the i-Pitara brick to blow the buzzer, play various tunes. Using multiple	Technology- Algorithm development, sequential programming.	

Grade 6:

Session Name	Activity Description	Science, Technology, Engineering & Mathematics 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
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.	g Forward Backward Block Buzzer

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.	Algorithm
Create your own music.	Program the i-Pitara brick to blow the buzzer, play various tunes. Using multiple	Technology - Algorithm development, sequential programming.	

Session Name	Activity Description	Science, Technology, Engineering & Mathematics Relevance	Key Words
Keeping our Surroundings clean	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
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.	Program ming Algorithm Sensor
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.	
Blinking lights & glowing lights	Programming the LED to glow for a specified time.	Technology - Algorithm development, sequential programming.	

M fan	Construction & programming a fan to rotate for a specified time.	Tec dev pro
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Grade 7

Grade 8

Session Name	Activity Description	Science, Technology, Engineering & Mathematics 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
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.	Algorithm Forward backward Touch Sensor
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.	

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.	
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Homework: Students will carry out an independent research task to enable them to come up with a design solution.

Useful Website: Here is a useful website to help the student in robotics: www.thinklabs.in

Kind regards

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