



PUTTING THE FUN BACK
INTO LEARNING!

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.

Curriculum Content for April:

Grade 4:

Session Name	Activity Description	Science, Technology, Engineering & Mathematics 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 to determine measurements (Measurement).	Simple machine lever 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.	Simple machine Energy
My first toy car	Construction of a car to observe how stored energy gets converted into movement energy.	Science- Conservation of energy.	

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 build problem solving Simple machine Programming Buzzer Algorithm

Looking at Butterflies!	Construction of a robotic butterfly	Science- Use of hinge joints. Technology-Relating to real world examples through technology.	Programming Algorithm
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The Core Competency Focus: Problem solving, creativity, cooperation, 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.

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

Grade 6:

Session Name	Activity Description	Science, Technology, Engineering & Mathematics Relevance	Key Words
Turns.(90 degree, 30 degree, 120 degree)	Construction of an autonomous car and programming it to take angular turns (90, 30 and 120) using different methods.	Technology- Algorithm development, Sequential programming. Mathematics-Tracing angles (Geometry).	Design Algorithm Programming Geometry Problem solving Turns
Challenge Day 1	Construction of an autonomous car and programming it to trace a square.	Engineering- Exposure to Engineering Design Process. Mathematics-Develop and demonstrate spatial sense (Geometry). Apply and adapt a variety of appropriate strategies to solve problems (Problem solving).	

Grade 7:

Session Name	Activity Description	Science, Technology, Engineering & Mathematics Relevance	Key Words
Conductivity fan	Construction of a fan and programming it to rotate with different speeds depending on the conductivity of the material.	Science- Differentiation of conductors and insulators. Technology- Algorithm development, use of conditional construct IF. Mathematics- Represent and analyse mathematical situations using algebraic symbols, analyse change in various	Design Build Problem solving Programming Algorithm

		contexts (Algebra).	Sensor
Touch activated fan	Construction of an automatic fan and programming it to switch on when the touch sensor is pressed.	Science - Conservation of energy	Conductors Insulators Save energy

Grade 8:

Session Name	Activity Description	Science, Technology, Engineering & Mathematics Relevance	Key Words
Conductivity fan	Construction of a fan and programming it to rotate with different speeds depending on the conductivity of the material.	Science -Differentiation of conductors and insulators. Technology - Algorithm development, Use of conditional construct IF. Mathematics -Represent and analyze mathematical situations using algebraic symbols, Analyze change in various contexts (Algebra).	Design Build Problem solving Simple machine Complex machine Programming
Challenge Day	Construction of a helper robot using any sensor learnt so far.	Technology - Algorithm Development, Use multiple IF statements. Mathematics - Build new knowledge through problem solving, Apply and adapt a variety of appropriate strategies to solve problems (Problem solving).	Algorithm Algebra Conductors Insulators Analog Sensor

Kind regards

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