



PUTTING THE FUN BACK
INTO LEARNING!

March 2018

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.

Curriculum Content for March

Grade 4:

Session Name	Activity Description	Science, Technology, Engineering & Mathematics Relevance	Key Words
Play with tricycle.	Construction of a remote controlled tricycle and observe the use of gears in it.	Science- Identification of gears as simple machine.	Simple machine Design
Unusual means of transport	Construction of a remote controlled ropeway and observe that pulleys are used to change the direction of pull and make it easier to lift a load.	Science- Identification of pulley as a simple machine. Technology- Relating to real world examples through technology. Mathematics- Build new knowledge through problem solving (Problem solving).	Build Problem solving Remote control Motor Lever Catapult
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.	Challenge Pulley Gears

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.

Grade 5:

Session Name	Activity Description	Science, Technology, Engineering & Mathematics Relevance	Key Words
My robotic fan	Construction & programming a fan to rotate for a specified time.	Technology -Algorithm development, sequential programming.	Design motors build problem solving Programmin g Algorithm
Challenge Day	Construction of an entry gate that opens after every 1 second and programming the LED to glow green when the gate is open.	Engineering - Reinforcement of Engineering Design Process Mathematics - Build new knowledge through problem solving, Apply and adapt a variety of appropriate strategies to solve problems (Problem solving). Technology -Algorithm development, sequential programming.	

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, 30and 120) using different methods.	Technology -Algorithm development, Sequential programming. Mathematics - Tracing angles (Geometry).	Design Build Problem solving Programming Algorithm
Challenge Day	Construction of a helper robot using any sensor learnt so far.	Technology - Algorithm Development, Use multiple IF statements. Engineering - Reinforcement of the Engineering Design Process. Mathematics - Build new knowledge through problem solving, Apply and adapt a variety of appropriate strategies to solve problems (Problem solving).	Forward backward Measurement

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 7:

Session Name	Activity Description	Science, Technology, Engineering & Mathematics Relevance	Key Words
My robotic fan	Construction & programming a fan to rotate for a specified time.	Technology -Algorithm development, sequential programming.	Design Build Problem solving Programming
I respond to different materials differently	Classifying materials as conductors and insulators using conductivity sensor.	Easy, programmable	Algorithm Sensor Conductors Insulators

Grade 8:

Session Name	Activity Description	Science, Technology, Engineering & Mathematics Relevance	Key Words
I respond to only Light.	Constructing an autonomous car and programming it to move Backward which afraid from the light.	Science -Measurement of light. Technology -Algorithm development, Use of IF Else decision construct. Mathematics - Represent and Analyze mathematical situations using algebraic symbols, Analyze change in various contexts (Algebra). Understand measurable attributes of object (Measurement).	Design Build Problem solving Programming Algorithm Sensor Algebra
Challenge Day	Construction of a helper robot using any sensor learnt so far.	Technology - Algorithm Development, Use multiple IF statements. Engineering - Reinforcement of the Engineering Design Process. Mathematics - Build new knowledge through problem solving, Apply and adapt a variety of appropriate strategies to solve problems (Problem solving).	Degree Light Sensor

Kind regards

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