

LS Creative Learnings Pvt Ltd.

STEM-Robotics Education

Report for November 2017

S.B. Patil Public School, Pune

## Grade: III

Sept 2017

### First week

Topic	Simple Machine-Wheel and axle
Lesson Objective	To understand about types of simple machine-wheel and axle Uses of wheel and axle
Robotic Kits used	Science & Technology (S & T) Kit
Activities	Build the models of car and bus
Integration	Work, Force and Energy

### Second Week

Topic	Simple Machine Lever(Class 1 Type)
Lesson Objective	To understand simple machines and the mechanism of levers: class1 lever
Robotic Kits used	Science & Technology (S & T) Kit.
Activities	Build the model of see-saw and scissor.
Integration	Work, Force and Energy

### Third week

Topic	Simple Machine Lever(Class 2 Type)
Lesson Objective	To understand simple machines and the mechanism of levers:
Robotic Kits used	Science & Technology (S & T) Kit.
Activities	Build a model of wheel barrow
Integration	Work, Force and Energy

### Fourth week

Topic	Simple Machine Lever(Class 3 Type)
Lesson Objective	To understand simple machines and the mechanism of levers: class 3 lever
Robotic Kits used	Science & Technology (S & T) Kit.
Activities	Build a model of Fishing Rod
Integration	Work, Force and Energy

## Grade: IV

Nov 2017

**First week**

Topic	Dancing Bird
Lesson Objective	To get familiarize to use the parts in S & T kit like - pulleys
Robotic Kits used	Science And technology kit
Activities	To build the model of DancingBird
Integration	Simple machine

**Second Week**

Topic	Dancing Bird
Lesson Objective	To get familiarize to use the parts in S & T kit like - GEARS
Robotic Kits used	Science And technology kit
Activities	To build the model of DancingBird
Integration	Simple machine

**Third week**

Topic	Simple machine Inclined plane
Lesson Objective	To understand the concept of force and use of inclined plane
Robotic Kits used	Science and technology kit
Activities	To build the model of ramp and slider.
Integration	inclined plane and concept of force and effort

**Fourth week**

Topic	Lego Grinder
Lesson Objective	To understand about uses and features of gears.
Robotic Kits used	Science & Technology (S & T) Kit.
Activities	Build the model of lego Grinder
Integration	Simple machine - gears

**Grade: V****Nov 2017****First week**

Topic	Wedo car
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Lesson Objective	To understand the mechanism of gears
Robotic Kits used	Lego Wedo Kit
Activities	Build the model of wedo car using gears
Integration	Simple machine - gears

### **Second Week**

Topic	Wedo car using gear box
Lesson Objective	To understand the mechanism of gearbox
Robotic Kits used	LEGO-Wedo kit
Activities	Build the model of car using gearbox
Integration	Simple machine - Gears

### **Third week**

Topic	Gear mechanism
Lesson Objective	How to do a Programming
Robotic Kits used	Lego WeDo Kit
Activities	Learn a conditional statements
Integration	Forever if, if –else, repeat commands and how to control script using these commands

### **Fourth week**

Topic	Gear mechanism
Lesson Objective	To understand the concept of Gears and its mechanism
Robotic Kits used	Lego Wedo Kit
Activities	Build the model of handfan using wedo kit
Integration	Loops in Q-basic

## **Grade: VI**

Nov 2017

### **First week**

Topic	Toll gate
Lesson Objective	To understand the working of Toll Gate using Scratch Programming

Robotic Kits used	Wedo Kit
Activities	Build a model of toll gate using motor and distance sensor to open and close the gate by sensing the vehicles
Integration	Maths – conditional operators

### **Second Week**

Topic	Toll Gate - number of objects passed through
Lesson Objective	To understand the working of Toll Gate using Scratch Programming
Robotic Kits used	Wedo Kit
Activities	Build a model of toll gate using motor and distance sensor to open and close the gate by sensing the vehicles.
Integration	Maths – conditional operators

### **Third week**

Topic	Crown car
Lesson Objective	Build the model of crown car using wedo kit
Robotic Kits used	Wedo Kit
Activities	To build the model of crown car using wedo kit
Integration	Sensor, gears

### **Fourth week**

Topic	Vendor machine
Lesson Objective	To understand the concept of vendor machine
Robotic Kits used	Wedo Kit
Activities	Build the model of Vendor machine- counting machine.

**Grade: VII**

**Nov 2017**

**First week**

Topic	Detect the object and display the image
Lesson Objective	To understand the use of ultrasonic sensor and display block
Robotic Kits used	NXT Mindstorm
Activities	Build the model using ultrasonic sensor and do the programming for ultrasonic sensor
Integration	<b>Math:</b> Understand how to measure distance using ultrasonic sensor

### **Second Week**

Topic	Detect the object and play the sound
Lesson Objective	To understand the use of ultrasonic sensor and sound block
Robotic Kits used	NXT Mindstorm
Activities	Build the model using ultrasonic sensor and do the programming for ultrasonic sensor
Integration	<b>Science:</b> Sound waves, decibel

### **Third week**

Topic	Avoid the obstacle and follow the path
Lesson Objective	To understand the concept of switch block with ultrasonic sensor
Robotic Kits used	NXT Mindstorm
Activities	Build the simple drive base model and avoid the obstacle in path
Integration	<b>Science:</b> Light intensity

### **Forth week**

Topic	Toll gate
Lesson Objective	To understand the working of toll gate using NXT programming
Robotic Kits used	NXT Mindstorm
Activities	Build the model of toll gate using nxt kit
Integration	Maths – conditional operators

## **Grade: VIII**

**Sept 2016**

### **First week**

Topic	Two button remote control car
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Lesson Objective	To Build the model of car which will operate on touch sensor
Robotic Kits used	NXT Mindstorm
Activities	To build robotic arm and Write the program on mindstorm.
Integration	<b>Math:</b> comparing and understanding data from the sensor

### **Second Week**

Topic	Parking Bay
Lesson Objective	To understand the concept of rotation sensor of motor
Robotic Kits used	Nxt mindstorm
Activities	Build the drive base model and program it to park in the marked area
Integration	<b>Math:</b> Calculating threshold value

### **Third week**

Topic	Introduction to Rotation Sensor
Lesson Objective	To understand how to use rotation sensor.
Robotic Kits used	Nxt mindstorm
Activities	Build the model of a Robot. Move it for a certain distance and display the distance in terms of rotations and in terms of degrees
Integration	<b>Math:</b> Rotation and degrees.

### **Forth week**

Topic	Speed controlling car to avoid accidents
Lesson Objective	Understand how it might be possible to decrease/increase the speed of cars using light sensor on different colored road.
Robotic Kits used	Nxt mindstorm
Activities	Build a car with light sensor and program it to move with different speed, when it senses different colours.
Integration	<b>Math:</b> Distance, rotation, degrees, direction