

**LS Creative Learnings Pvt Ltd.,**

**STEM-Robotics Education**

**Report for Dec 2017**

**S B Patil Public School, Pune**

## Grade: III

Dec 2017

### First week

Topic	Simple Machine-Pulley
Lesson Objective	To understand about types of simple machine-Pulley
Robotic Kits used	Science & Technology (S & T) Kit
Activities	Build the model of well to draw water from well
Integration	Science : water resources

### Second Week

Topic	Simple Machine-Pulley
Lesson Objective	To understand about types of simple machine-Pulley
Robotic Kits used	Science & Technology (S & T) Kit
Activities	Crane
Integration	Science : effect of force

### Third week

Topic	Simple machine –Inclined plane
Lesson Objective	To understand about types of simple machine-Inclined plane
Robotic Kits used	Science & Technology (S & T) Kit
Activities	Build the model of Ramp
Integration	Science : Effect of force and friction

### Fourth week

Topic	Weight balance
Lesson Objective	To understand the concept of weight
Robotic Kits used	Science & Technology (S & T) Kit
Activities	Build the model of weight balance
Integration	Matter has weight

## Grade: IV

Dec 2017

### First week

Topic	Simple Machine-Pulley
Lesson Objective	To understand about types of simple machine-Pulley
Robotic Kits used	Science & Technology (S & T) Kit
Activities	Build the model of well to draw water from well
Integration	Simple machine

### Second Week

Topic	Goal Kicker
Lesson Objective	To build a mechanical leg that is motorized to swing and kick a paper ball.
Robotic Kits used	Science & Technology (S & T) Kit
Activities	Build the model of Goal kicker
Integration	Energy and simple machine

### Third week

Topic	Odometer
Lesson Objective	To understand the concept of measuring distance
Robotic Kits used	Science & Technology (S & T) Kit
Activities	Build the model of odometer
Integration	Units of measurement

### Fourth week

Topic	Giraffe
Lesson Objective	Gear mechanism
Robotic Kits used	Science & Technology (S & T) Kit
Activities	Build the model of Giraffe
Integration	Science –herbivores animals

## Grade: V

**Dec 2017**

### **First week**

Topic	Drumming Monkey
Lesson Objective	To understand concept of cam gear
Robotic Kits used	Lego WeDo Kit
Activities	Build the model of drumming monkey.
Integration	Science-force

### **Second Week**

Topic	Amphibian animal (Frog)
Lesson Objective	Gear Mechanism (spur and cam gears)
Robotic Kits used	Lego WeDo Kit
Activities	Students are assigned to build the model of Frog and program by using scratch
Integration	Animal Life (Organs of breathing).

### **Third week**

Topic	Goal Keeper
Lesson Objective	To understand how to move back and forth to block a paper ball from a goal.
Robotic Kits used	Lego WeDo Kit
Activities	Build the model of Goal Keeper
Integration	Science (transfer of energy)

### **Fourth week**

Topic	Goal Kicker
Lesson Objective	To build and program a mechanical leg that is motorized to swing and kick a paper ball.
Robotic Kits used	Lego Wedo Kit
Activities	Build the model of Goal kicker
Integration	Science: Transmission of motion, Transfer of energy Math: distance

## Grade: VI

Dec 2017

### **First week**

Topic	High Security House
Lesson Objective	To understand about the security Houses..
Robotic Kits used	Lego WeDo Kit
Activities	Build the model of security house.
Integration	Designing security houses

### **Second Week**

Topic	Mechanical grabber
Lesson Objective	To understand the concept of gear mechanism..
Robotic Kits used	Lego WeDo Kit
Activities	Students are assigned to build the model of Mechanical grabber and program it using Scratch software.
Integration	Gear mechanism.

### **Third week**

Topic	We Do Arm
Lesson Objective	How to lift the objects by using Robo arm.
Robotic Kits used	Lego WeDo Kit
Activities	Build A wedo robo arm
Integration	Gear mechanism, Translational or rotational motion

### **Fourth week**

Topic	Multiple Gear Mechanism
Lesson Objective	To understand about Multiple Gear Mechanism.
Robotic Kits used	Lego Wedo Kit
Activities	Students are assigned to build the model of Giraffe and a Tree, Giraffe bends its neck to pluck the leaves from the tree. And program by using Scratch Software.
Integration	Simple Machine

## Grade: VII

Dec 2017

### First week

Topic	Motion – Types of motion- Linear motion
Lesson Objective	To understand about motion and its types- Linear Motion
Robotic Kits used	NXT Mindstorm
Activities	Build the model of Automatic door and understand how to use ultrasonic sensor to control the automatic door using NXT programming
Integration	Motion –linear motion

### Second Week

Topic	Motion – Types of motion- Linear motion
Lesson Objective	To understand about motion and its types- Linear Motion
Robotic Kits used	NXT Mindstorm
Activities	Build the model of Automatic door and understand how to use ultrasonic sensor to control the automatic door using NXT programming
Integration	Motion –linear motion

### Third week

Topic	Hit a Ball
Lesson Objective	Understand how to detect the object using ultrasonic sensor and build and program the robotic arm to hit a ball.
Robotic Kits used	NXT Mindstorm
Activities	Attach the ultrasonic sensor to the NXT Drive base.
Integration	Science –Distance

### Forth week

Topic	Object Detection
Lesson Objective	Understand how to program the robot to detect objects.
Robotic Kits used	NXT Mindstorm
Activities	Students have to build the model and write the program for detecting the object using ultrasonic sensor and play sound whenever it detects an object
Integration	science -circular motion

## Grade: VIII

**Dec 2017**

### **First week**

Topic	Introduction to Rotation sensor (find object and come back)
Lesson Objective	To Understand the concept of rotation sensor
Robotic Kits used	NXT Mindstorm
Activities	Build the model of drive base using ultrasonic And write the program to control the robot to move forward and while moving if it senses any obstacle it should return back to its same position.
Integration	<b>Science:</b> - distance

### **Second Week**

Topic	Motion – Types of motion- Linear motion
Lesson Objective	To understand about motion and its types- Linear Motion
Robotic Kits used	NXT Mindstorm
Activities	Build the model of Automatic door and understand how to use ultrasonic sensor to control the automatic door using NXT programming
Integration	Motion –linear motion

### **Third week**

Topic	Motion – Types of motion- Linear motion
Lesson Objective	To understand about motion and its types- Linear Motion
Robotic Kits used	NXT Mindstorm
Activities	Build the model of Automatic door and understand how to use touch sensor to control the automatic door using NXT programming
Integration	Motion –linear motion

### **Forth week**

Topic	Introduction to variables
Lesson Objective	To understand how to use variables – Create, Read, write and display
Robotic Kits used	NXT Mindstorm
Activities	Create variable using Math block in NXT programming

Integration	computer-logical operator