

**BGS NATIONAL PUBLIC SCHOOL
CREATIVE & DESIGN LAB SYLLABUS (2019-20)**

Class:Grade 4 (CD LAB IN TERM 1)				
Workshop Name:WEDO & Scratch				
Contents				
	Sl.No	Project Name	Sessions	Hours
WEDO	1	Race Car	2 sessions	80 minutes
	2	Technic Fan	2 sessions	80 minutes
	3	Technic Gymnast	2 sessions	80 minutes
	4	Egg Beater	2 sessions	80 minutes
	5	Technic Swing	2 sessions	80 minutes
	6	Technic weight lifter	2 sessions	80 minutes
	7	Airplane Rescue	2 sessions	80 minutes
	8	SailBoat Storm	2 sessions	80 minutes
	9	Windshield Wiper	2 sessions	80 minutes
	10	Giant Escape	2 sessions	80 minutes
ADVANCE SCRATCH	11	Cloning 3	2 sessions	40 minutes
	12	Draw a flower	2 sessions	40 minutes
	13	Baby Catching the Ball	2 sessions	80 minutes
	14	Escape Game	2 sessions	80 minutes
	15	Jumpy Monkey	2 sessions	80 minutes
	16	Out of the blue	2 sessions	80 minutes
	17	Feed me words	2 sessions	80 minutes
	18	Spinner	2 sessions	80 minutes
	19	The world of gift	2 sessions	80 minutes
	20	Egg catching game	2 sessions	80 minutes
Total number of sessions			40 sessions	

**BGS NATIONAL PUBLIC SCHOOL
CREATIVE & DESIGN LAB SYLLABUS (2019-20)**

Class:Grade 5 (CD LAB IN TERM 2)				
Workshop Name:WEDO & ARDU				
Contents				
	Sl.No	Project Name	Sessions	Hours
WEDO	1	Speed	2 sessions	80 minutes
	2	Helicopter	2 sessions	80 minutes
	3	Hungry Alligator	2 sessions	80 minutes
	4	Sweeper	2 sessions	80 minutes
	5	HorseBot	2 sessions	80 minutes
	6	HandDril	2 sessions	80 minutes
	7	Venus Fly Trap	2 sessions	80 minutes
	8	Volcano Alert	2 sessions	80 minutes
	9	Frog Metamorphosis	2 sessions	80 minutes
	10	Plant Pollinator	2 sessions	80 minutes
ARDU BLOCK	11	Introduction to Robotics	2 sessions	80 minutes
	12	Introdeuction to Arduino	2 sessions	80 minutes
	13	Basic Electronics	2 sessions	80 minutes
	14	Blinking of LED	2 sessions	80 minutes
	15	Ring Counter	2 sessions	80 minutes
	16	Own pattern of LED	2 sessions	80 minutes
	17	LDR with LED	2 sessions	80 minutes
	18	Burglar Alarm using LDR	2 sessions	80 minutes
	19	Smart Street light	2 sessions	80 minutes
	20	Water Level Indicator	2 sessions	80 minutes
Total number of sessions			40 sessions	

BGS NATIONAL PUBLIC SCHOOL
CREATIVE & DESIGN LAB SYLLABUS (2019-20)

Class:Grade 6 (CD LAB IN TERM 2)

Workshop Name:EV3 & ARDUINO

Contents

	Sl.No	Project Name	Sessions	Hours
EV3	1	Basics Introduction	1 session	40 minutes
	2	EV3 Rover	2 sessions	80 minutes
	3	Ball Batter	2 sessions	80 minutes
	4	Architect Swing	3 sessions	80 minutes
	5	Door Alarm	3 sessions	80 minutes
	6	Rescue Dog	3 sessions	120 minutes
	7	Smart StreetLight	3 sessions	120 minutes
	8	Acrobat	3 sessions	120 minutes
ARDUINO	9	Introduction to Robotics	1 session	40 minutes
	10	Basic Electronics	2 sessions	80 minutes
	11	Introduction to Arduino	1 session	40 minutes
	12	LED Blinking	1 session	40 minutes
	13	Project: Ring counter and Dancing Light	2 sessions	80 minutes
	14	Basic I/O (input, output) Interface of switch with buzzer and LED	2 sessions	80 minutes
	15	Brightness Fading	1 session	40 minutes
	16	Seven segment display	2 sessions	80 minutes
	17	LDR (Light Dependent Resistor)	2 sessions	80 minutes
	18	DC Motor : Forward, Backward, Release	2 sessions	80 minutes
	19	Ultrasonic Sensor, Smoke Sensor	2 sessions	80 minutes
	Total number of sessions		40 sessions	

BGS NATIONAL PUBLIC SCHOOL
CREATIVE & DESIGN LAB SYLLABUS (2019-20)

Class:Grade 7 (CD LAB IN TERM 2)				
Workshop Name:EV3 & ARDUINO				
Contents				
	Sl.No	Project Name	Sessions	Hours
EV3	1	Basics Introduction	1 session	40 minutes
	2	Top Spinnar	2 sessions	80 minutes
	3	Snow Mobile Race	2 sessions	80 minutes
	4	Gymnast	2 sessions	80 minutes
	5	Quadwalker	3 sessions	120 minutes
	6	Mouse Trap	3 sessions	120 minutes
	7	Inchworm	3 sessions	120 minutes
	8	Rescue Crane	3 sessions	120 minutes
Arduino	9	Introduction to Robotics	1 session	40 minutes
	10	Basic electronics	2 sessions	80 minutes
	11	Introduction to arduino	1 session	40 minutes
	12	Blinking led	1 session	40 minutes
	13	Project: ring counter, dancing led	2 sessions	80 minutes
	14	Basic I/O (input, output) Interface of switch with buzzer and LED	2 sessions	80 minutes
	15	Interface switch with buzzer, led	2 sessions	80 minutes
	16	Dc motor	2 sessions	80 minutes
	17	Distance calculation with Ultrasonic sensor	1 session	40 minutes
	18	LCD interfacing with Arduino	2 sessions	80 minutes
	19	Interfacing PIR and Smoke sensor	2 sessions	80 minutes
	20	Blind man stick	1 session	40 minutes
	21	Remote Control BOT	2 sessions	80 minutes
Total number of sessions			40 sessions	

**BGS NATIONAL PUBLIC SCHOOL
CREATIVE & DESIGN LAB SYLLABUS (2019-20)**

Class:Grade 8(CD LAB IN TERM 1)

Workshop Name:EV3 & ARDUINO

Contents

	Sl.No	Project Name	Sessions	Hours
EV3	1	Basics Introduction	1 sessions	40 minutes
	2	Golf Bot	1 sessions	80 minutes
	3	Dancing Floor	3 Sessions	80 minutes
	4	Hand Generator	3 Sessions	120 minutes
	5	Mars Satellite	3 Sessions	120 minutes
	6	Egypt Fan	2 Sessions	120 minutes
	7	Carnival Rover	2 Sessions	80 minutes
	8	Windshield Wiper	2 Sessions	80 minutes
ARDUINO	9	Introduction to Arduino	2 sessions	80 minutes
	10	BASIC ELETRONICS	2 sessions	80 minutes
	11	C PROGRAM BASICS	2 sessions	80 minutes
	12	Arduino board details blinking of led	2 sessions	80 minutes
	13	LED programs (a).Ring counter,b)Dancing light	2 sessions	80 minutes
	14	Basic I/O(input,output) 1.How to interface switch with led 2.how to interface switch with buzzer	3 sessions	120 minutes
	15	LCD interfacing with Arduino	2 sessions	80 minutes
	16	How to interface IR sensors Ultrasonic sensor and smoke sensor	3 sessions	120 minutes
	17	Motor 1.How to interface the H_bridge driver 2.speed & Direction (controlling motors) forward,backward,left,right.	2 sessions	80 minutes
	18	Smart Trolley	3 sessions	120 minutes
Total number of sessions			40 sessions	

**BGS NATIONAL PUBLIC SCHOOL
CREATIVE & DESIGN LAB SYLLABUS (2019-20)**

Class:Grade 9 (CD LAB IN TERM 1)				
Workshop Name:Drones & Advance ARDUINO				
Contents				
	Sl.No	Project Name	Sessions	Hours
DRONES	1	Quadrotor Drone	10 Sessions	6 Hours
	2	RC Aircraft	10 Sessions	6 hours
ADVANCE ARDUINO	3	RECAP OF ARDUINO	1 sessions	40 minutes
	4	C and C++ basics	1 sessions	40 minutes
	5	DC motor and its alignment Program to control wheel movements	2 sessions	80 minutes
	6	Smart trolley	2 sessions	80 minutes
	7	Obstacle Avioder	2 sessions	80 minutes
	8	Maze Solver	2 sessions	80 minutes
	9	Line follower	2 sessions	80 minutes
	10	Wall follower	2 sessions	80 minutes
	11	Remote controlled robot	2 sessions	80 minutes
	12	Bluetooth Controlled Bot	2 sessions	80 minutes
	13	Serving Robot	2 sessions	80 minutes
Total number of sessions			40 sessions	

BGS NATIONAL PUBLIC SCHOOL
CREATIVE & DESIGN LAB SYLLABUS (2019-20)

Class:Grade 11(CD LAB IN TERM 1)					
Workshop Name:Drones & Advance ARDUINO					
Contents					
	Sl.No	Project Name	Sessions	Duration	
DRONES	1	Quadrotor Drone	10 Sessions	6 Hours	
	2	RC Aircraft	10 Sessions	6 hours	
ADVANCE ARDUINO	3	Introduction to Arduino	2 sessions	80 minutes	
	4	BASIC ELETRONICS	2 sessions	80 minutes	
	5	C PROGRAM BASICS	1 sessions	40 minutes	
	6	Arduino board details first project blinking of led		1 sessions	40 minutes
		LED programs (a).Ring counter,b)Dancing light Interfacing buzzer		2 sessions	80 minutes
	8	Interfacing Switch and 7 segment Display		2 sessions	80 minutes
		Distance calculation with Ultrasonic sensor		2 sessions	80 minutes
	10	Interfacing PIR and Smoke sensor (Implementing digitalRead and analogRead methods)		2 sessions	80 minutes
	11	Interfacing IR sensor LCD display		2 sessions	80 minutes
	12	Bluetooth controlled Bot		2 sessions	80 minutes
	13	Maze Solver		2 sessions	80 minutes
Total number of sessions			40 sessions		