Chapter - 18 Robotics coding VEXcode VR – 4 Moving the car with out hitting any obstacles

Lesson Objective :

- Introduce students to block-based programming using **VEXcode VR**.
- Teach students how to Move the car to reach the destination without hitting any obstacles.

Skills to be attained : Coding to move the robot without hitting any obstacles.

Tools / Websites / Resources :

1. https://www.vr.vex.com//

Teacher Led Instructions :.

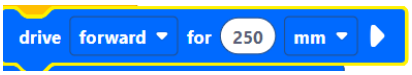
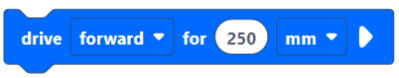
Move the car to reach the destination without hitting any obstacles

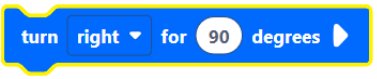
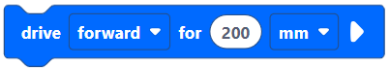
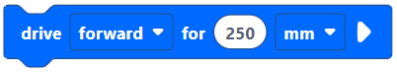
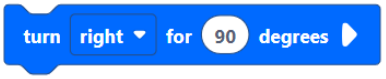
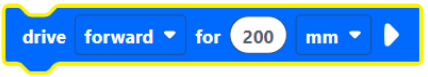
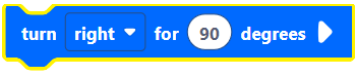
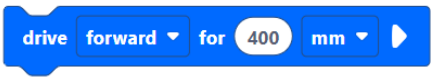
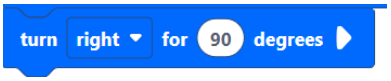
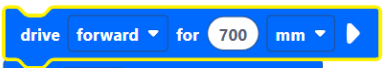
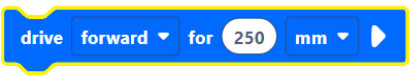
Objective: Program the robot to stop when it detects an obstacle in front using the **Distance Sensor**.

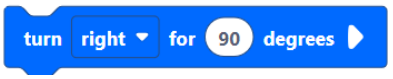
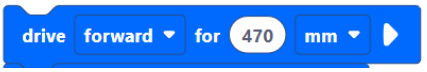
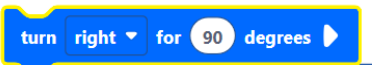
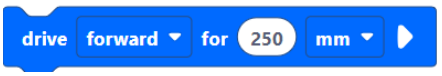
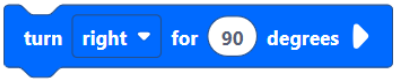
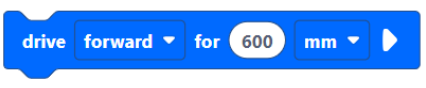
Steps:

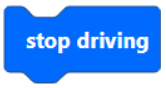
1. **Open VEXcode VR**.
    - **Select the Wall Maze** playground from the playground list from the top left of the 

menu bar.
        - From the **Drivetrain** category, do the following Action

Step No	Action	Block with value
1	Drag the **"Drive Forward for 200 mm change the value** to **250**.	
2	Drag the **"Turn Right for 90 degree "** block and click right and change to Left	
3	Drag the **"Drive Forward for 200 mm change the value** to **250**.	

4	Drag the **"Turn Right for 90 degree "** block	
5	Drag the **"Drive Forward for 200 mm**	
6	Drag the **"Turn Right for 90 degree "** block and change to Left	
7	Drag the **"Drive Forward for 200 mm block change the value** to **250**.	
8	Drag the **"Turn Right for 90 degree "** block	
9	Drag the **"Drive Forward for 200 mm change the value** to **300**.	
10	Drag the **"Turn Right for 90 degree "** block and change to Left	
11	Drag the **"Drive Forward for 200 mm block**	
12	Drag the **"Turn Right for 90 degree "** block	
13	Drag the **"Drive Forward for 200 mm change the value** to **400**.	
14	Drag the **"Turn Right for 90 degree "** block	
15	Drag the **"Drive Forward for 200 mm change the value** to **700**	
16	Drag the **"Turn Right for 90 degree "** block and click right and change to Left	
17	Drag the **"Drive Forward for 200 mm change the value** to **250**.	

18	Drag the **"Turn Right for 90 degree "** block	
19	Drag the **"Drive Forward for 200 mm change the value** to **470**	
20	Drag the **"Turn Right for 90 degree "** block	
21	Drag the **"Drive Forward for 200 mm change the value** to **780**.	
22	Drag the **"Turn Right for 90 degree "** block change Right to **left**	
23	Drag the **"Drive Forward for 200 mm change the value** to **250**.	
24	Drag the **"Turn Right for 90 degree "** block Change Right to **Left**	
25	Drag the **"Drive Forward for 200 mm change the value** to **1000**.	
26	Drag the **"Turn Right for 90 degree "** block Change Rigt to Left	
27	Drag the **"Drive Forward for 200 mm change the value** to **500**.	
28	Drag the **"Turn Right for 90 degree "** block	
29	Drag the **"Drive Forward for 200 mm change the value** to **240**.	
30	Drag the **"Turn Right for 90 degree "** block Change Rigt to Left	
31	Drag the **"Drive Forward for 200 mm change the value** to **600**.	

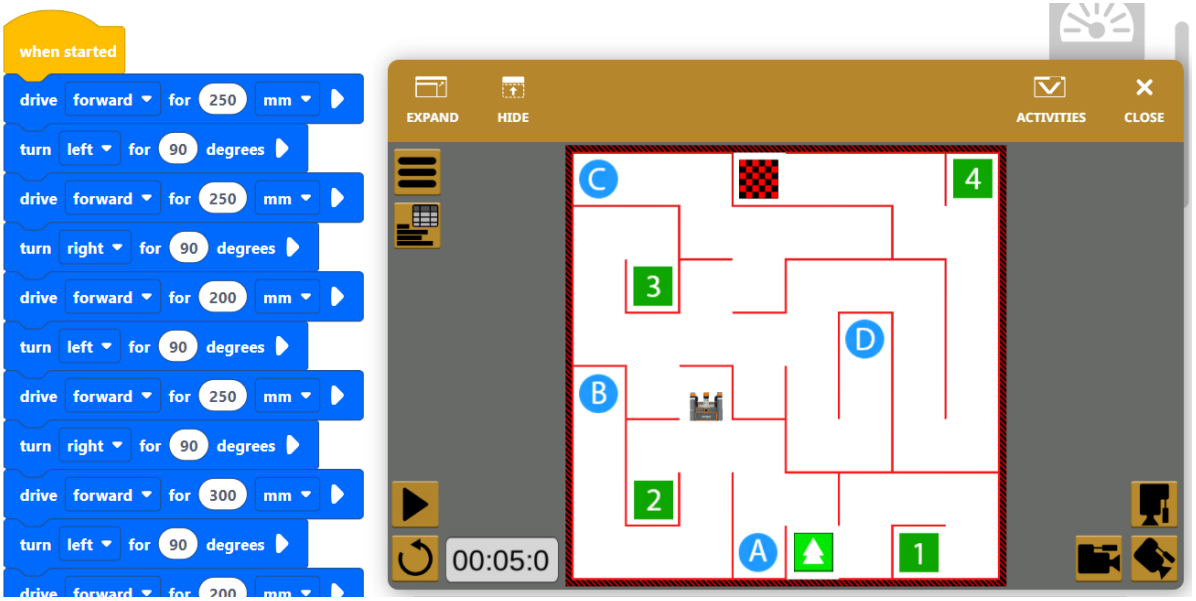
32	Drag Stop Driving	

Code on screen

Run the Code:

- Press **Start** and observe the robot driving forward. Taking proper direction and moving forward to reach the destination.**Use VR Camera Controls** at right side bottom of the output screen and watch it with 3d effects

Output



Output Using **VR Camera Controls**

Select the VR camera control icon to see the output with 3D effect  at the right side corner of the output screen

Conclusion : Students learn to control the robot without hitting any obstacles and to turn the robot the direction they want.