Chapter - 17 Robotics coding VEXcode VR – 3 Moving the Robot in a Spiral Path

Lesson Objective :

- Block-based programming using **VEXcode VR**.
- Moving the robot in a spiral path

Skills to be attained : Coding to move the robot

Tools / Websites / Resources :

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

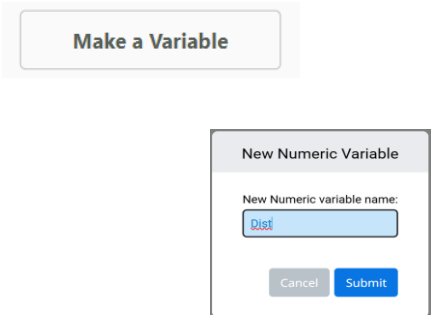
Teacher Led Instructions :.

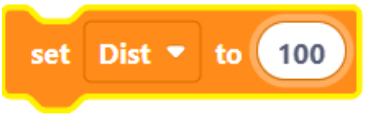
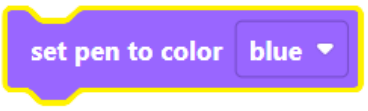
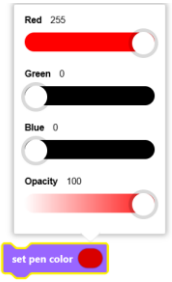
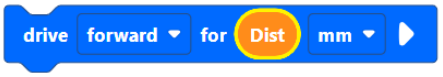
Spiral Path Exploration with Drawing

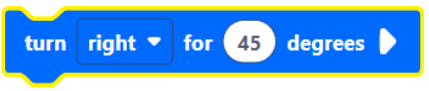
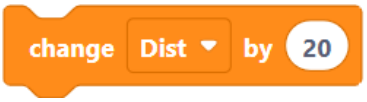
In this activity, the robot moves in a spiral pattern, with each loop getting progressively larger. This is a fun way for students to explore loops, distance adjustments, and creative motion.

Instructions

1. **Open VEXcode VR** and select the **Art Canvas** playground, which supports drawing with the Pen tool.
2. **Set up the project** with Pen blocks, loops, and variables.

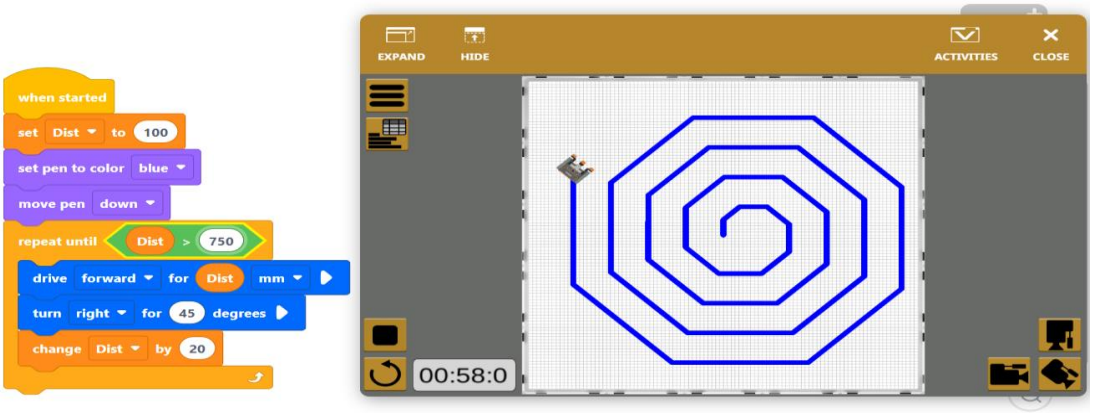
SNO	Action	Block with value
1	Go to the **Variables** category and create a variable called Dist by clicking on **Make a variable** Type Dist in **New Numeric Variable** and click Submit	

2	Set Dist to 100 mm by selecting **Set Dist to block** changing 0 to 100	
3	Go to Looks Catagorey Select the **Set Pen to color (choose blue)** block to select a pen color. Or Select **Set Pen color (adjust the numeric value to get the desired colour)**	 Or 
4	Select **Move Pen down** from Looks category so the robot will draw a line as it moves.	
5	From **control category** add **Repeat until** loop	
6	Go to operators category and select 0 > 50 block	
7	Go to Variables category and drag and drop **Dist in 0** place.change 50 to 750	
8	Drag and drop the condition block in **Repeat until** condition	
9	Inside Repeat until loop: Add **Drive forward for Dist** (drag and drop from variable category and place over 200**)** **mm** block from **Drive train** block. This will	

	move the robot forward by the distance set in the variable.	
10	Inside Repeat until Loop From **Drivetrain** category Add a **Turn right for 45 degrees** block. From 90 change to 45 degrees to form spiral.	
11	Increase the distance after each move by selecting **Change Distance by 20** from **Variable** category to make each loop larger gradually.The vale is changed from 1 to 20	
11	Loop appearance	

2. **Run the Program:**
    - The robot will draw a spiral pattern as it moves forward and turns, creating an expanding spiral on the canvas. Run by clicking 

Code with output



Conclusion : Students will get familiar with degrees of angle that the robot to be turned and move the robot for a virtual or specific path they program for.