Chapter - 14 Robotics and Programming

Objective :

- What is robot?
- Activities in Vexcode

Skills to be attained : Knowledge on AI coding

Tools / Websites / Resources :
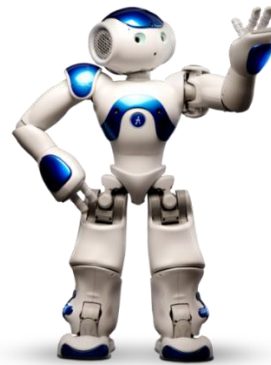
1. https://www.vr.vex.com//

Teacher Led Instructions :

What is Robotics

Robotics is the field of designing, building, and using robots—machines that can perform tasks, often controlled by computers. Robots are used to help humans by doing jobs that are repetitive, dangerous, or too difficult.

I am Rabort. I am naturally intelligent!   **I am robot. I am artificially intelligent!**

For example, in car factories, robots help build cars by lifting heavy parts and assembling them. They can do this very quickly and with great precision, making the process faster and safer. Some robots can also help in everyday life, like vacuum cleaner robots that clean floors automatically!

A great user-friendly online tool for teaching robotics to school students is VEXcode VR. It's designed specifically for beginners and offers a drag-and-drop interface, making it accessible to young learners without prior programming experience.
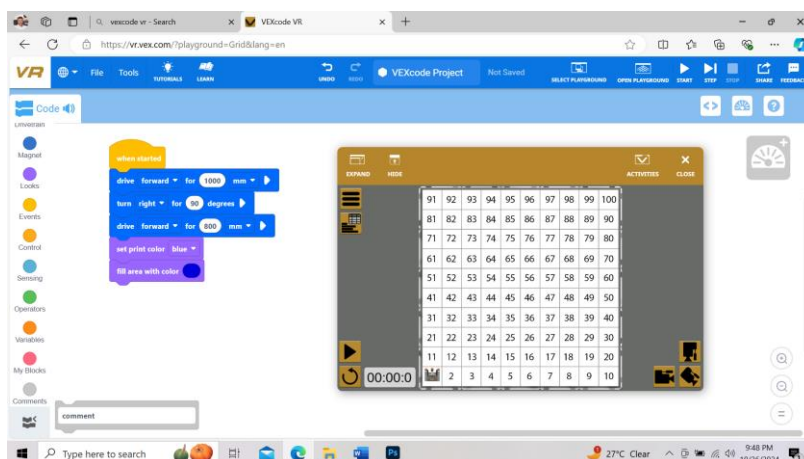
Website: You can access the tool here: VEXcode VR

Find Your Age and paint blue

Playground: Numbered Grid Map

Challenge: Activity 1: Program the VR Robot to drive to your age as of today.

```
when started
drive  forward ▼  for  1000   mm ▼  ▶
turn  right ▼  for  90  degrees  ▶
drive  forward ▼  for  800   mm ▼  ▶
set print color  blue ▼
fill area with color  ●
```
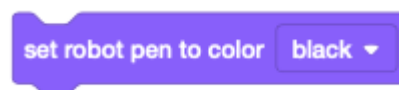
Activity 2: Program the VR Robot to drive to your age as of today. Then have the VR Robot drive to your age in the year 2035.

Level 3: Program the VR Robot to drive and mark your birthday.

- ○ Use a blue pen to mark what day you were born.

- ○ Use a red pen to mark what month you were born.

- ○ Use a green pen to mark what year you were born.

Helpful Hints:

- Each square in the Numbered Grid Map measures 200mm by 200mm.

- Use the *Set Pen color* block from the Looks category to select a pen color when marking numbers.

```
set robot pen to color  black ▼
```

- Matching Python command:

```
pen.set_pen_color(BLACK)
```

Conclusion : Students will know about robotics and its concept. Learn to move the robot by giving block code in Vexcode