AI RoboGenius

7

Teacher's Manual

Extended Support for Teachers

ORANGE
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Teacher's Time Table

Sessions / Days	0	I	II	III	IV	BREAK	V	VI	VII	VIII
Monday										
Tuesday										
Wednesday										
Thursday										
Friday										
Saturday										

Development Milestones in a Child

Development milestones are a set of functional skills or age-specific tasks that most children can do at a certain age. These milestones help the teacher identify and understand how children differ in different age groups.

Age
5 - 8 Years

Physical	• First permanent tooth erupts • Shows mature throwing and catching patterns • Writing is now smaller and more readable • Drawings are now more detailed, organised and have a sense of depth
Cognitive	• Attention continues to improve, becomes more selective and adaptable • Recall, scripted memory and auto-biographical memory improves • Counts on and counts down, engaging in simple addition and subtraction • Thoughts are now more logical
Language	• Vocabulary reaches about 10,000 words • Vocabulary increases rapidly throughout middle childhood
Emotional/ Social	• Ability to predict and interpret emotional reactions of others enhances • Relies more on language to express empathy • Self-conscious emotions of pride and guilt are governed by personal responsibility • Attends to facial and situational cues in interpreting another's feelings • Peer interaction is now more prosocial and physical aggression declines

"If you cannot do great things, do small things in a great way."

Age 9 - 11 Years

Physical	• Motor skills develop resulting in enhanced reflexes
Cognitive	• Applies several memory strategies at once • Cognitive self-regulation is now improved
Language	• Ability to use complex grammatical constructions enhances • Conversational strategies are now more refined
Emotional/ Social	• Self-esteem tends to rise • Peer groups emerge

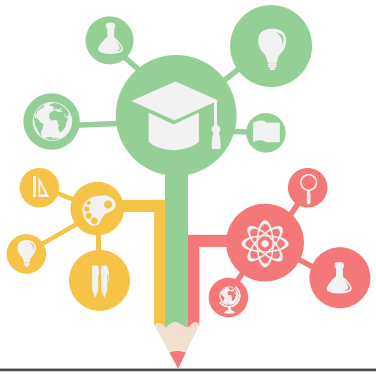
Age 11 - 20 Years

Physical	• If a girl, reaches peak of growth spurt • If a girl, motor performance gradually increases and then levels off • If a boy, reaches peak and then completes growth spurt • If a boy, motor performance increases dramatically
Cognitive	• Is now more self-conscious and self-focused • Becomes a better everyday planner and decision maker
Emotional/ Social	• May show increased gender stereotyping of attitudes and behaviour • May have a conventional moral orientation

Managing the children's learning needs according to their developmental milestones is the key to a successful teaching-learning transaction in the classroom.

"Family is the most important thing in the world."

Teaching Pedagogies



Pedagogy is often described as the approach to teaching. It is the study of teaching methods including the aims of education and the ways in which such goals can be achieved.

Lesson Plans

A lesson plan is the instructor's road map which specifies what students need to learn and how it can be done effectively during the class time. A lesson plan helps teachers in the classroom by providing a detailed outline to follow in each class.

A lesson plan addresses and integrates three key components:

- Learning objectives
- Learning activities
- Assessment to check the student's understanding

A lesson plan provides an outline of the teaching goals:

Before the class

1. Identify the learning objectives.
2. Plan the lesson in an engaging and meaningful manner.
3. Plan to assess student's understanding.
4. Plan for a lesson closure.

During the class

Present the lesson plan.

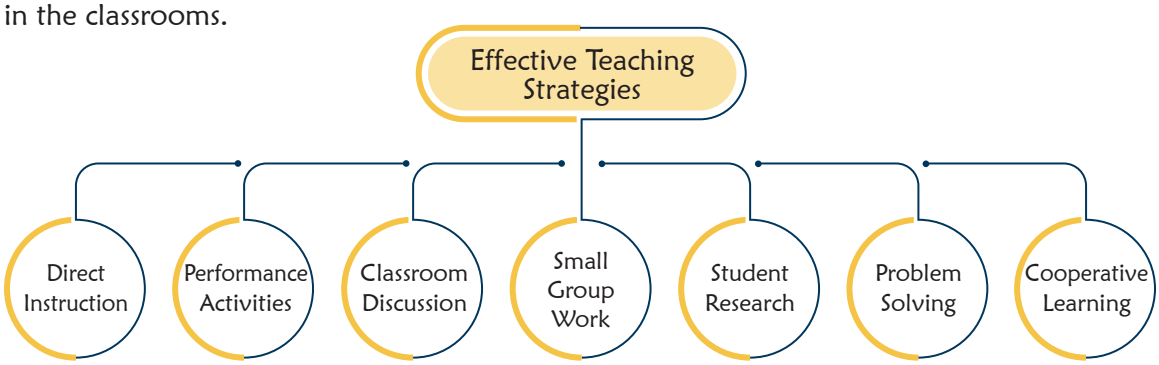
After the class

Reflect on what worked well and why. If needed, revise the lesson plan.

"Knowing yourself is the beginning of all wisdom."

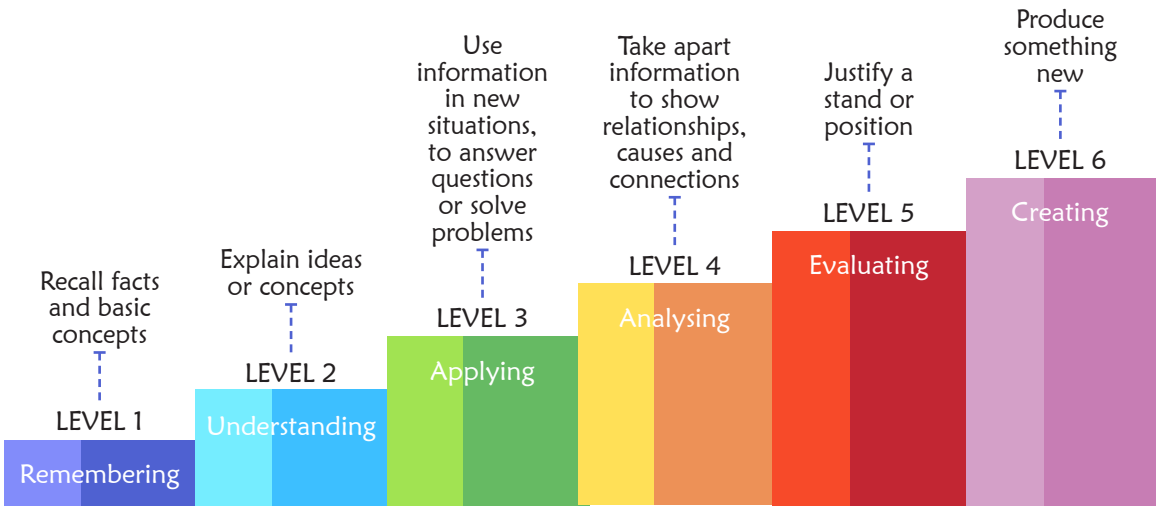
Teaching Strategies

Numerous strategies have evolved over the years to facilitate the teaching-learning process in the classrooms.



Bloom's Taxonomy

Bloom's Taxonomy was created by Dr Benjamin Bloom and several of his colleagues, to promote higher forms of thinking in education instead of rote learning. There are three domains of learning: cognitive (mental), affective (emotional) and psychomotor (physical). However, when we refer to Bloom's Taxonomy we speak of the cognitive domain. Bloom's Taxonomy is a list of cognitive skills that is used by teachers to determine the level of thinking their students have achieved. As a teacher, one should attempt to move students up the taxonomy as they progress in their knowledge.



Teachers should focus on helping students to remember information before expecting them to understand it, helping them understand it before expecting them to apply it to a new situation and so on.

> "If you have no confidence in self, you are twice defeated in the race of life."

CLASS 7

LESSON PLAN

1 Natural Language Processing (NLP)

Teaching Objectives

Students will learn about:

- Types of NLP Technologies
- Importance of Natural Language Processing in AI
- Uses of NLP
- How NLP Works?

Number of Sessions	
Theory	Practical
2	2

Teaching Plan

Introduce the students with Natural Language Processing (NLP) as a domain of Artificial Intelligence (AI) that helps computers understand and work with human language.

Ask students about how they use voice assistants like Siri or Google Assistant in their daily life.

Discuss with students about how apps like Siri and Google Assistant use NLP to understand voice commands.

Discuss with the students about the importance of NLP in making machines understand human language, enabling us to communicate in a natural way.

Explain the students about how the NLP is used in various fields such as Sentiment Analysis, ,Semantic Search, Optical Character Recognition, Speech Recognition, Machine Translation and Natural Language Generation.

Discuss with the students about the importance of NLP in AI and how NLP bridges the gap between human and machine communication by enabling machines to understand and generate human language.

Explain the students about the uses of NLP and how NLP works through the steps of understanding language, cleaning input and using AI to learn from the input.

Discuss with the students about how NLP is used in applications like search engines, smart homes, emotion detection and social media monitoring and many more.

Extension

Ask the students some questions based on this chapter.

Q. What is Natural Language Processing (NLP)?

Q. How does NLP help machines understand human language?

Q. What are some examples of NLP technologies in daily life?

Q. What is Sentiment Analysis and how is it used?

Q. How do search engines use NLP to improve search results?

Q. What is Machine Translation and how does NLP make it possible?

Q. How does NLP help in smart home devices like Google Home and Alexa?

Q. What are the steps in how NLP works and what happens during each step?

Q. What role does AI play in Natural Language Processing?

Q. How can NLP be used to assist people with disabilities?

Evaluation

Guide the students to complete the sections, such as **AI TASK** provided on page **9**.

Encourage the students to solve the question in the **AI REBOOT** section on page **14**.

Ask the students to answer the following question in the **VIDEO SESSION** section on page **15**.

Complete the **AI GAME** task on pages **9 – 10** and **12** to **14**, answering questions related to the activity.

After explaining the chapter, let the students do the **ROBO CHECK** on pages **16** and **18** in the main course book.

Ask the students to complete the **AI IN LIFE** activity provided on page **18**.

Encourage the students to complete the **AI DEEP THINKING** activity given on page **18**.

Take the students to the computer lab and let them practice the activity given in the **AI LAB** section on page **18** in the main course book. This will enhance their skills in creativity.

Suggested Activity

Students will use Scratch to create a simple chatbot that responds to text input. They will use NLP principles to make it understand and respond logically.

2 Statistical Data

Teaching Objectives

Students will learn about:

- Statistical Data

- Real-Life Application of Statistical Data
- Collection and Presentation of Data

Number of Sessions	
Theory	Practical
2	1

Teaching Plan

Introduce the students about statistical data as a way to represent facts and figures that help in making decisions. Discuss how statistical data helps understand and analyse patterns.

Ask the students to think of examples where they have used data in daily life, like checking the weather or monitoring their screen time.

Discuss with students that how the statistical data helps make decisions in different fields, like healthcare, education, business and urban planning. For example, In healthcare, statistical data helps predict outbreaks and allocate resources.

Explain the students that it is crucial to collect data accurately and present it in a clear and correct manner to ensure that the information is reliable and can be understood properly.

Discuss the methods of data collection like surveys, interviews and experiments.

Introduce data visualization tools such as bar graphs, pie charts and line graphs. Discuss how visualizing data helps in better understanding and interpretation.

Discuss how AI uses statistical data to improve decision-making, predictions and pattern recognition. Explain the role of data analysis in developing smart systems.

Discuss how statistical data is used in various industries like:

- **Education:** Tracking student progress.
- **Healthcare:** Predicting disease outbreaks.
- **Business:** Analysing customer preferences.
- **Urban Planning:** Predicting traffic and pollution.

Extension

Ask the students some questions based on this chapter.

Q. What is statistical data and how is it used to make decisions?

Q. Name some real-life applications of statistical data.

Q. How do you collect statistical data in real life?

Q. Why is data visualization important in interpreting information?

Q. How does AI use statistical data to make predictions?

Q. What are some tools for visualizing data?

Q. How can statistical data be used in healthcare?

Q. What are some examples of how businesses use statistical data?

Q. How does urban planning use statistical data for city development?

Q. How can statistical data help improve education?

Evaluation

Encourage the students to solve the question in the **AI REBOOT** section on page **25**.

Ask the students to answer the following question in the **VIDEO SESSION** section on page **21**.

Complete the **AI GAME** task on page **23** and **24**, answering questions related to the activity.

After explaining the chapter, let the students do the **ROBO CHECK** on pages **28** and **29** in the main course book.

Ask the students to complete the **AI IN LIFE** activity provided on page **30**.

Encourage the students to complete the **AI DEEP THINKING** activity given on page **30**.

Take the students to the computer lab and let them practice the activity given in the **AI LAB** section on page **30** in the main course book. This will enhance their skills in creativity.

Suggested Activity

Ask students to collect birthday data from their classmates (e.g., month, season, etc.). They will then create graphs (bar charts or pie charts) to show the number of birthdays per month and analyse the data.

3 Robotics with AI

Teaching Objectives

Students will learn about:

- Introduction to Robotics and AI
- The STA Model: Sense, Think, Act
- Components of AI Robotics
- Types of AI in Robotics
- Applications of Robotics with AI
- Advantages and Challenges

Number of Sessions	
Theory	Practical
2	2

Teaching Plan

Introduce the students with robotics as the branch of science and engineering that involves designing and building robots, which are machines capable of carrying out tasks.

Ask the students to share any robots or AI-powered devices they've seen or interacted with, such as robot vacuums or AI-powered voice assistants.

Explain the students about Artificial Intelligence (AI) as the ability of machines to perform tasks that typically require human intelligence, such as learning from experience and solving problems.

Discuss with students about the virtual assistants (like Siri), self-driving cars and recommendation systems.

Discuss with the students about the connection between Robotics and AI

Introduce the students with the STA Model (Sense, Think, Act), which shows how robots interact with their environment:

- **Sense:** Robots use sensors to collect information about their surroundings.
- **Think:** The robot's brain (a computer) processes the information.
- **Act:** The robot takes action based on the information it received.

Have students discuss real-world examples of robots following this STA process, like a robot vacuum that senses the room, processes where it needs to clean and then moves to clean the floor.

Explain the students about the main components of AI robotics:

- **Sensors:** Used to detect light, motion, distance, temperature, etc.
- **Processor/Microcontroller:** The robot's brain, responsible for decision-making.
- **Actuators:** Parts that move the robot (e.g., motors).
- **Power Source:** Provides the energy to the robot.
- **AI Software:** Enables robots to make decisions, learn from their environment and process data.

Show a video or diagram of a robot and ask students to identify and discuss the different components, such as sensors and actuators.

Discuss with the students about the various types of AI used in robots:

- **Reactive AI:** Robots that react to their environment without learning from past experiences.
- **Cognitive AI:** Robots that can learn and adapt to their environment.
- **Learning AI:** Robots that improve by learning from experience.
- **Decision-making AI:** Robots that make decisions based on the environment.
- **NLP AI:** AI used in robots to understand and communicate with humans.
- **Hybrid AI:** Combines multiple AI types to make robots flexible.

Have students brainstorm robots they know of and classify them under these AI types.

Discuss with the students about how AI-powered robots are used in manufacturing, healthcare, agriculture, space exploration, education and entertainment.

Show the students the examples of AI robots like medical robots, robot vacuums and space rovers. Ask students to choose one application and explain how it helps humans.

Discuss with the students about the Advantages and Challenges of Robotics with AI:

Following are the advantages of Robotics with AI:

1. Increased efficiency: Robots can perform tasks faster.
2. High precision: Robots can perform tasks with accuracy.
3. Safety: Robots work in dangerous environments.
4. Cost savings: Robots reduce long-term labour costs.
5. Versatility: Robots can be reprogrammed for various tasks.

Following are the challenges of Robotics with AI:

1. High initial cost: The cost of robots can be high.
2. Limited creativity: Robots cannot think creatively.
3. Maintenance and repair: Robots need regular maintenance.
4. Job displacement: Robots may replace human workers.
5. Dependence on technology: Robots depend on electricity and software.

Extension

Ask the students some questions based on this chapter.

Q. What are the key components of a robot?

Q. How does Reactive AI differ from Cognitive AI?

Q. Name a robot that uses Learning AI and explain its purpose.

Q. How does AI help robots make decisions?

Q. What are the benefits of using robots in manufacturing?

Q. How can robots help in space exploration?

Q. What are the challenges of using robots in healthcare?

Q. How does Hybrid AI make robots more capable?

Q. Why are actuators essential in robots?

Q. What does the STA Model represent in robot behaviour?

Evaluation

Guide the students to complete the sections, such as **Ask AIRO** provided on page **35**.

Encourage students to think ethically and answer the question given in the **ETHICS EDGE** section on page **37**.

Encourage the students to solve the question in the **VISUAL VAULT** section on page **34**.

After explaining the chapter, let the students do the **ROBO CHECK** on pages **38** and **39** in the main course book.

Encourage the students to complete the activity like **CASE STUDY** given on page **40**.

Suggested Activity

Ask students to design a robot using simple drawings and labels. They should include the robot's purpose (e.g., cleaning, assisting humans), sensors and AI components.

4 Introduction to Sensors in Tinkercad

Teaching Objectives

Students will learn about:

- Sensor
- Working of Sensors
- Using Tinkercad to Simulate Sensors
- Build a PIR Sensor Circuit
- Build Automatic Streetlight

Number of Sessions	
Theory	Practical
2	2

Teaching Plan

Introduce sensors as devices that detect changes in the environment, such as light, heat or motion. These sensors send data to a microcontroller, helping robots or systems make decisions.

Ask students how they think sensors are used in their everyday lives, such as in motion detectors or smart lights.

Discuss with the students how the photoresistor sensors detect light and are used in applications like adjusting screen brightness or turning on lights when it gets dark.

Discuss with the students about photodiode sensor that generates current when exposed to light.

Tell the students about the Ultrasonic distance sensor that uses sound waves to measure distance.

Explain the students about how the PIR sensors detect infrared radiation (heat) to detect motion, useful in security systems and automatic lighting.

Introduce the students with the IR sensor for measuring distance or detecting objects.

Discuss with the students about soil moisture sensor that is used to check the moisture present in the soil.

Explain the students about how sensors detect physical changes in their environment and convert these changes into data that can be processed by a microcontroller.

Walk the students through how sensors detect, convert, process data and take actions based on the signal.

Show the students how Tinkercad allows students to build and simulate circuits with sensors, including photoresistors and PIR sensors.

Discuss with the students about how to build a PIR sensor circuit in Tinkercad, where a PIR sensor is used to control an LED based on motion detection.

Introduce the students with how a photoresistor can be used in an automatic streetlight circuit that turns on the LED when the surrounding light level drops.

Walk through the steps of connecting the photoresistor, resistors and LED in the circuit to simulate the automatic streetlight.

Extension

Ask the students some questions based on this chapter.

Q. What is a sensor and how does it work?

Q. How does a photoresistor change its resistance?

Q. How does a PIR sensor detect motion?

Q. What happens when a photoresistor detects darkness?

Q. How can you use a PIR sensor to trigger an action like turning on lights?

Q. How is a photoresistor used in the automatic streetlight circuit?

Q. What is the role of the microcontroller in a sensor-based circuit?

Q. How can Tinkercad help in simulating sensor circuits?

Q. Why is it important to simulate circuits before building them physically?

Q. How can sensors improve the automation of daily life tasks?

Evaluation

Guide the students to complete the sections, such as **Ask AIRO** provided on page **43**.

Encourage students to think ethically and answer the question given in the **ETHICS EDGE** section on page **46**.

Encourage the students to solve the question in the **VISUAL VAULT** section on page **43**.

Ask the students to answer the question in **CHALLENGE CHAIN** section on page **44**.

After explaining the chapter, let the students do the **ROBO CHECK** on pages **49** and **50** in the main course book.

Take the students to the computer lab and let them practice the activity given in the **INNOVATION LAB** section on page **51** in the main course book.

Suggested Activity

Ask students to design a plant watering system using a soil moisture sensor that triggers an irrigation system when the soil is dry. Students can simulate the circuit in Tinkercad and test its functionality.

5 Getting Started with Arduino in Tinkercad

Teaching Objectives

Students will learn about:

- Arduino
- Advantages of Connecting Sensors with Arduino
- Programming Arduino in Tinkercad
- Smart Irrigation System
- Ultrasonic Distance Measurement System

Number of Sessions	
Theory	Practical
2	2

Teaching Plan

Introduce the students with Arduino as a small programmable circuit board that allows users to build interactive electronic projects.

Explain the students about how Arduino helps control devices like sensors and motors.

Discuss with the students about the most common types of Arduino boards, including the Arduino Uno, Arduino Nano, Arduino Mega, Arduino Leonardo, Arduino LilyPad, Arduino Due and Arduino Pro Mini. Explain which one is suitable for different projects based on size, power and capability.

Students will identify the Arduino board they would use for simple projects and for larger, more complex ones.

Explain the students how Arduino helps collect real-time data from sensors and control devices.

Discuss with the students about advantages such as flexibility, automation and the affordable nature of Arduino boards.

Ask the students to give examples of how sensors connected to Arduino can automate tasks, like turning on lights or controlling a fan.

Explain the students about how Tinkercad allows users to simulate circuits and write code to control Arduino boards. Introduce Blocks Mode, Blocks + Text Mode and Text Mode as programming options in Tinkercad.

Discuss the advantages of using Text Mode for more complex code and its application in controlling Arduino boards.

Introduce the concept of Smart Irrigation, where an Arduino uses a soil moisture sensor to automate the watering of plants based on soil moisture levels.

Explain how ultrasonic sensors are used to measure distances by emitting sound waves and calculating the time taken for the wave to return.

Extension

Ask the students some questions based on this chapter.

Q. What is Arduino and how does it help in building electronic projects?

Q. How do you connect sensors to an Arduino board?

Q. What is the purpose of Arduino in the Smart Irrigation System?

Q. How do you write a program for Arduino in Tinkercad?

Q. What are the advantages of using sensors with Arduino in building automated systems?

Q. What types of Arduino boards are available and how do they differ from each other?

Q. What is the role of the soil moisture sensor in the Smart Irrigation System?

Q. How does an ultrasonic sensor measure distance?

Q. What is the difference between Blocks Mode and Text Mode in Tinkercad?

Q. How can you create a system that uses Arduino to control a fan based on temperature?

Evaluation

Guide the students to complete the sections, such as **Ask AIRO** provided on page **55**.

Encourage students to think ethically and answer the question given in the **ETHICS EDGE** section on page **57**.

Ask the students to answer the question in **CHALLENGE CHAIN** section on page **60**.

After explaining the chapter, let the students do the **ROBO CHECK** on pages **65** and **66** in the main course book.

Take the students to the computer lab and let them practice the activity given in the **INNOVATION LAB** section on page **67** in the main course book.

Suggested Activity

Ask students to design a plant watering system using a soil moisture sensor that triggers an irrigation system when the soil is dry. Students can simulate the circuit in Tinkercad and test its functionality.

6 Getting Started with Vexcode VR

Teaching Objectives

Students will learn about:

- Introduction to VEXcode VR
- Exploring the VEXcode VR Interface
- The VEX VR Robot
- Types of Blocks

- Drivetrain Blocks
- Drawing Blocks
- Drawing a Rectangle on the Grid Map
- Hidden Pixel Art

Number of Sessions	
Theory	Practical
2	2

Teaching Plan

Introduce the students with VEXcode VR as a virtual platform where students can code robots to move, draw and solve mazes. Emphasise to the students that it requires no physical hardware.

Ask the students what types of robots or virtual simulations they are familiar with and how they think VEXcode VR can be used for learning.

Show the students the interface of VEXcode VR, having the components as the Workspace, Blocks Category, Blocks Palette, Code, Select Playground, Open Playground, Code Viewer, Monitor, File Menu, UNDO/REDO.

Have students explore the interface in a, ensuring they understand where to find different blocks and tools for coding.

Discuss with the students about the VEX VR robot and tell the students about its components as Pen, Electromagnet, Down eye, 50 mm Diameter Wheels, Front eye + Distance Sensor, Built-in Gyro + Location Sensing, Right Bumper Sensor, Left Bumper Sensor.

Discuss with the students about the various blocks available in VEXcode VR, such as Drivetrain blocks, Magnet blocks, Drawing blocks, Sensing blocks, Console Blocks and Logic blocks.

Ask students to categorise the blocks into their respective types, like Drivetrain, Sensing and Logic.

Teach the students how to draw a rectangle by using the Drivetrain and Drawing blocks. Guide them through the process of moving the robot forward, turning and drawing.

Students will code the robot to draw a rectangle on the grid map. They will use repeat loops, drive forward blocks and turn right blocks.

Explain how the students can use sensors like the DownEye to detect colors and reveal hidden pixel art.

Ask students to refactor the code they used for drawing a rectangle into a custom function that can draw any side of the rectangle. Discuss how the drawing would change if they used 45-degree turns instead of 90-degree turns.

Extension

Ask the students some questions based on this chapter.

Q. What is VEXcode VR and what can you do with it?

Q. How does VEXcode VR help you learn about robot programming?

Q. What types of blocks are used for controlling the robot's movement?

Q. How do you use Drawing blocks to make the robot draw shapes?

Q. How does the DownEye sensor help the robot in the Hidden Pixel Art activity?

Q. What does the repeat block do in your code?

Q. How do Drivetrain blocks control the robot's movement in VEXcode VR?

Q. How can you change the pen color when using the Drawing blocks?

Q. What changes would you make to draw a polygon instead of a rectangle?

Q. How does Tinkercad simulate the behavior of a real robot in VEXcode VR?

Evaluation

Guide the students to complete the sections, such as **Ask AIRO** provided on page **76**.

Encourage students to think ethically and answer the question given in the **ETHICS EDGE** section on page **72**.

Encourage the students to solve the question in the **VISUAL VAULT** section on page **71**.

Ask the students to answer the question in **CHALLENGE CHAIN** section on page **76**.

After explaining the chapter, let the students do the **ROBO CHECK** on pages **78** and **79** in the main course book.

Take the students to the computer lab and let them practice the activity given in the **INNOVATION LAB** section on page **80** in the main course book.

Suggested Activity

Students will design a simple maze-solving robot using Drivetrain blocks to navigate through a virtual maze in VEXcode VR. They can use Sensing blocks to detect walls and plan the robot's route.

7 Introduction to Industry 5.0 in Robotics

Teaching Objectives

Students will learn about:

- Introduction to Industry 5.0
- The Three Pillars of Industry 5.0
- Role of Robots in Industry 5.0
- Real-world Examples of Industry 5.0
- Benefits of Industry 5.0
- Challenges of Industry 5.0

Number of Sessions	
Theory	Practical
2	2

Teaching Plan

Introduce the students with Industry 5.0 as the next phase of industrial evolution, where humans and robots work together as collaborators rather than robots replacing humans.

Ask students how they think robots and humans can work together in industries and what benefits that could have.

Discuss with the students about the three pillars of industry 5.0 as Human-Centric, Sustainable and Resilience which are:

- Human Centric
- Sustainable
- Resilience

Discuss with the students how Industry 5.0 is focused on making technology work for humans, rather than replacing them.

Explain the students about how the robots and AI are used to create sustainable and eco-friendly production systems, including recycled materials and efficient use of energy.

Discuss with the students about how resilience in Industry 5.0 means adapting to disruptions like natural disasters or pandemics.

Explain the students about how robots in Industry 5.0 assist humans in tasks that require precision, speed and strength, like assembly, welding and packaging.

Show the students that cobots (collaborative robots), exoskeletons and augmented reality (AR) glasses as examples of human-robot collaboration.

Discuss with students about the roles of robots in healthcare, automotive manufacturing and food factories, where robots work alongside humans for safety and efficiency.

Discuss with students about the real-world examples of Industry 5.0 such as automotive manufacturing, e-commerce, healthcare, fashion and agriculture.

Students will brainstorm how robots are used in different industries, such as food factories (sorting and packaging), retail (managing inventory) and fashion (customised clothing).

Discuss with the students about the benefits of industry 5.0 like increased efficiency, enhanced customisation, improved safety, sustainability and better collaboration between humans and robots.

Explain the students about the challenges of industry 5.0 technological integration, skills gap, high costs, job displacement and cybersecurity risks that come with adopting Industry 5.0 technologies.

Extension

Ask the students some questions based on this chapter.

Q. What is the main focus of Industry 5.0?

Q. How do robots help in healthcare in Industry 5.0?

Q. How do cobots differ from regular robots?

Q. How can robots improve safety in the workplace?

Q. How does Industry 5.0 promote sustainability?

Q. What is resilience in Industry 5.0 and why is it important?

Q. How do robots help in the fashion industry?

Q. What is the role of augmented reality (AR) in Industry 5.0?

Q. How does robot collaboration with humans lead to better productivity?

Q. What are some challenges of adopting robotics in small businesses?

Evaluation

Guide the students to complete the sections, such as **Ask AIRO** provided on page **87**.

Encourage students to think ethically and answer the question given in the **ETHICS EDGE** section on page **88**.

After explaining the chapter, let the students do the **ROBO CHECK** on pages **89** and **90** in the main course book.

Encourage the students to complete the activity like **CASE STUDY** given on page **91**.

Suggested Activity

Students will design a robot that could assist them in a task at school or home. They will outline how the robot would collaborate with them and create a simple programming simulation to show how it would work.