

North Star International Academy

STEM Update - April' 25



STEM Update - April 2025

Grade: I

Course: Early Mechanics

- This month, students were introduced to the exciting world of robotics through the **Early Mechanics course** using the **Zephyr kit**.
- Throughout the month, they explored the **three fundamental branches of robotics** — **mechanical**, **electrical**, and **programming** — building a strong foundation for how robots work in the real world.

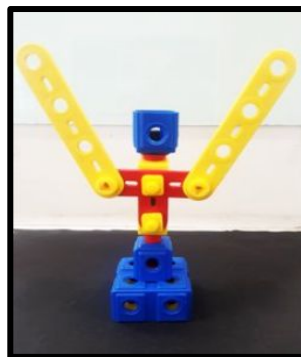
Key Learning Points:

Scarecrow Activity – Basic Assembly & Stability:

1. Students practiced following clear instructions to build their scarecrow model.
2. While building the scarecrow, students observed that **placing parts evenly** (like the arms at the same height) helped the model stand upright.



Scarecrow



STEM Update - April 2025

Grade: II & III

Course: Simple Motorized Structures

- This month, students explored the world of **simple machines and motorized structures** using the **BLIX kit**.
- Throughout the month, they explored the **three fundamental branches of robotics** — **mechanical, electrical, and programming** — building a strong foundation for how robots work in the real world.

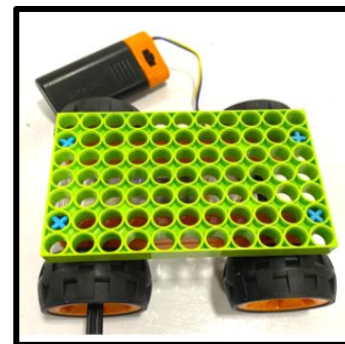
Key Learning Points:

Basic Car Activity – Basic Motorized Movement:

1. Students learned how a motor generates movement and how connecting it to wheels creates motion.
2. While building the Basic Car, students understood the structure of a simple car also practiced assembling parts accurately to ensure the car moved in a straight and stable manner.



Basic Car



STEM Update - April 2025

Grade: IV

Course: Click Drag Design – 2

- This month, students engaged in **3D modeling** using design software- **TINKERCAD** to bring creative ideas to life through digital tools.
- They learned to manipulate objects in **3D space** by adjusting dimensions, scale, and orientation — giving them confidence in basic design thinking and spatial awareness.

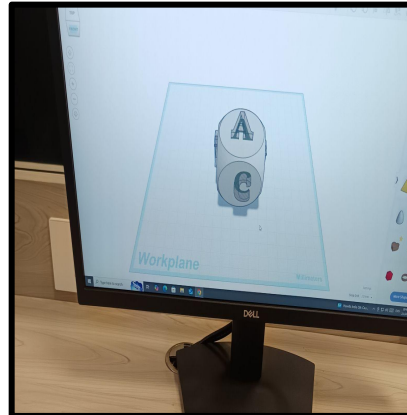
Key Learning Points:

Activity 1 – Name Keychain (Introduction to Custom Design):

Students explored how to design personalized objects by creating their own **name keychains**, learning to type, size, and align letters in a 3D space.

Activity 2 – Alphabet Dice (3D Modeling Basics):

Students learned to use design commands to create a **cube** and then placed letters on its faces to model a 3D **Alphabet Dice**.



STEM Update - April 2025

Grade: V-VI

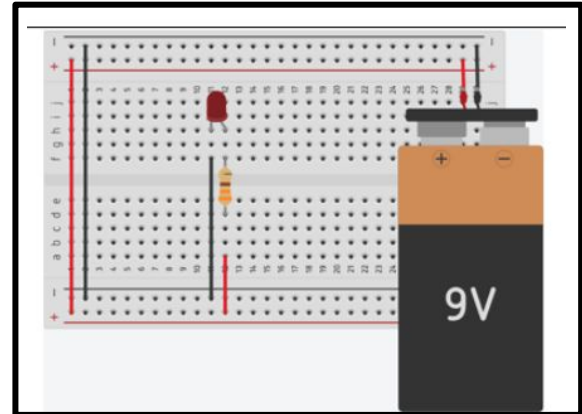
Course: OMOTOOLS Electronics

- This month, students were introduced to the fundamentals of electronics through hands-on exploration of basic components, using the **OMOTOOLS Electronics Kit** to build simple circuits.
- They developed an understanding of how electronic circuits work, focusing on **LEDs, resistors**, and key electrical terms, while also learning the correct component placement and polarity.

Key Learning Points:

Activity – Lighting of LED(Learning Anode, Cathode):

1. Students learned about **LEDs and their polarity**, understanding how direction matters in electronic circuits.
2. They explored the role of **resistors** and were introduced to terms like **voltage, current**, and **power**, laying the foundation for safe and functional circuit design.



STEM Update - April 2025

Grade: VII-VIII

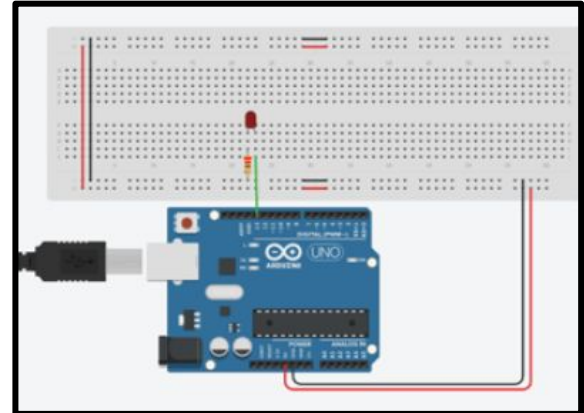
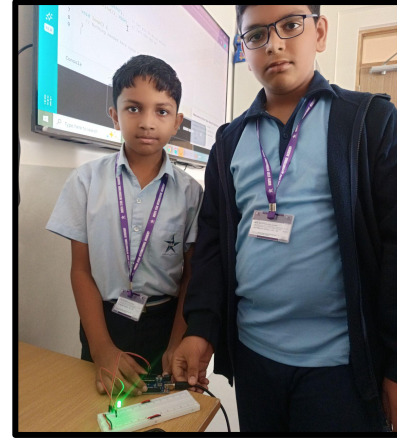
Course: OMOTOOLS Arduino

- This month, students were introduced to the world of **physical computing** using the **OMOTOOLS Arduino Kit**, exploring how hardware and software work together.
- They installed and worked with the **Arduino IDE**, learning how to write and upload code to automate circuits using basic components.

Key Learning Points:

Activity – Introduction to Arduino & LED Blinking:

1. Students installed the **Arduino IDE**, understood its interface, and wrote their first C-based code to **blink an LED**, gaining confidence in coding and uploading programs to the Arduino board.
2. They also learned to **interface components like LEDs and resistors**, gaining hands-on experience in building and automating simple circuits.



Star Of The Class

SR.NO	GRADE	DIVISION	NAME OF THE STUDENT'S
1.	I	B	SHIVANSH
2.	II	C	ATHARVA P PATIL
3.	III	A	KIARA OSCAR FERNANDES
4.	IV	B	SABHYATA SATPATHY

Star Of The Class

SR.NO	GRADE	DIVISION	NAME OF THE STUDENT'S
5.	V	A	AKSHIT VIVEKANAND MAMDIKAR
6.	VI	A	AADITYA SHINDE
7.	VII	A	SAISWARUP NANDA
8.	VIII	A	VEDANT RAHUL PAIGUDE

DID YOU KNOW?

The rise of Robotics and AI

Fueled by advances in computing power and connectivity, the fields of robotics and artificial intelligence have grown rapidly

1941

Isaac Asimov formulates the

Three Laws of Robotics:



A robot may not injure a human being or, through inaction, allow a human being to be harmed

A robot must obey orders given it by human beings except where such orders would conflict with the First Law

A robot must protect its own existence as long as such protection does not conflict with the First or Second Law

1954

George Devol invents the first digitally operated and programmable robot

1956

Field of AI research founded at a conference at Dartmouth

1968

Mobile robot "Shakey" is introduced, it's controlled by a computer the size of a room

1960

Frank Rosenblatt constructs Mark I Perceptron, a computer that learned new skills by trial and error

1979

SCARA, an articulated robot arm, is developed for assembly lines

1984

Doug Lenat and his team start Cyc, to codify millions of pieces of knowledge that compose human common sense

1985

Jaron Lanier's VPL Research, Inc., sells first VR glasses and gloves; Lanier coins the phrase

virtual reality

1988

Nope, I'm human.

Researchers launch Jabberwocky, an AI chatbot designed to learn through conversation

1984

The RHex, developed by General Robotics Corp., includes software enabling it to learn from its environment

1986

Honda creates the EO, the first of a series of humanoid robots that walk on two feet

1988

The first HelpMate service robot begins work at Danbury Hospital

1921

The term robot is first used by Czech writer Karel Capek



1939

Elektro, a humanoid robot, debuts at the World's Fair, smoking cigarettes and blowing up balloons

1948

William Grey Walter creates the first autonomous robot with complex behavior



1950

Alan Turing publishes paper about the possibility of machines that think; idea known as the

Turing's Test.

It tests a machine's ability to "think" by answering a series of questions. In essence, the tester must think the machine's answers are coming from a human

1951

Marvin Minsky builds the first neurocomputer, SNARC

1961

GM installs Unimate robot to lift and stack hot pieces of metal

1972

Stanford researcher develops PARRY, designed to simulate a paranoid schizophrenic.

1974

Intel produces its second-generation 8080 general-purpose chips

1968

IBM 305, the first hard disk drive 5MB

1970

IBM 1330 100MB per pack

1986

IBM 0606, a 6.25" disk with 20-40MB



Minimize and maximize

Shrinking disk sizes and exponentially growing capacity help fuel robotics and AI



PLAY TIME - ROLL A DICE





S



T



E



A



M