



In partnership with



## **SHELL STREAM AND TECH CLUBS LEARNING OBJECTIVES**

By participating in the clubs for the term (April-June 2023), students will cover the following topics and objectives in the specified subject areas:

### **TECH CLUB LEARNING OBJECTIVES**

#### **Art and Technology**

*Topic: Fundamentals of Coding*

Students should be able to:

- Use While Loop Block
- Use if/Else Conditional Block
- Follow coding instructions to solve puzzles without usual visual Minecraft support
- Use operators, conditionals, and while loops in their programs
- Test and debug their code
- Use an effective debugging process
- Use an effective debugging process
- Evaluate the code and testing it to determine which coding snippet is correct
- Create coding solutions that include sequences, loops, while loops and nested loops
- Decompose (break down) the steps needed to solve a problem into a precise sequence of instructions
- Iterate on solutions to complete a task

## **STREAM CLUB LEARNING OBJECTIVES**

### **Mathematics**

*Topics:*

#### *1. Venn Diagrams*

Students should be able to:

- 1) display, using Venn diagrams, the relationship among the subsets of real numbers.
- 2) solve problems involving set notation for subsets of the universal set in the Venn diagram.
- 3) solve problems involving two subsets of the universal set using Venn diagrams, to reflect:
  - a) intersection of sets
  - b) subsets of a set
  - c) disjoint sets

#### *2. Introduction to Probability*

Students should be able to:

- 1) Investigate the outcome of an experiment
- 2) Explain the concept of probability
- 3) Explain basic terminology associated with probability
  - event
  - certainty
  - chance
  - fairness
  - possibility
  - risk
- 4) Apply the probability formula
- 5) Calculate the probability of an event

#### *3. Laws of Indices*

Students should be able to:

- 1) identify the base and the exponent of a number written in index form,  $b^a$

- 2) evaluate expressions of the form  $ba$ , where  $b \in \mathbb{N}$  and  $a \in \mathbb{W}$
- 3) interpret the laws of indices
- 4) apply the laws of indices to solve problems

### **Integrated Science**

*Topics:*

- Environmental Impact of Human Activity
- Magnetism
- Electrolysis

Students should be able to:

- 1) Understand the role of greenhouse gases
- 2) Explain how magnets work and the theory of magnetism
- 3) Understand how energy is created by chemical reactions