



# Bolt Club

AN AWESOME WORLD  
OF ENGINEERING & SCIENCE

## ABOUT BOLT CLUB

The Bolt Club is an after-school programme designed to expand the educational experience of learners.

It provides curriculum enrichment to STEAM (Science, Technology, Engineering, liberal Arts and Mathematics) education by employing age-appropriate hands-on, inquiry-based activities aimed at inspiring learning and promoting personal development.

The club offers a broad range of educational opportunities in its K-U suite (Kindergarten-to-University) activities that range from fun science activities for early childhood learning to mentorship and professional skills programmes for tertiary-level students.

## PURPOSE OF THE CLUB

The Bolt Club has been setup to provide learners with expanded learning opportunities that support the development of appropriate cognitive, social, physical, and emotional outcomes. Learners are able to acquire basic to advanced science knowledge and develop awareness of how they relate with science in their personal, social, environmental and technological areas in their daily lives.

Our objectives are

1. Using fun methods and demonstrations to cultivate interest in science and engineering.
2. Adopting individualized learning styles to optimize learning and develop scientific problem-solving techniques

## TARGET AUDIENCE

The Bolt Club is structured to serve two broad target audiences

1. Explorers: Primary school children - ages 6 –12 years
2. Innovators: Secondary school students - ages 12 –18 years

## OUR PROGRAMMES

Our expanded learning programmes are split into STEAM and Computing courses

### STEAM PROGRAMME

Our experiential learning programme introduces learners to the world of innovation, teaches them to think critically and use science, technology, engineering and mathematics in imaginative approaches to their environments and real-world problems. We further use the liberal arts to draw on their reasoning, ethics, and design principles while encouraging creative solutions.

We integrate all subjects as a way to teach across the disciplines using exploration, discovery and inspiration through active learning. We deploy scientific enquiry as a foundation of learning and we develop the essential (hard and soft) skills necessary for working scientifically.

All our activities supplement and boost both the national and international curriculum as we are guided by the learner's cognitive ability.

### COMPUTING COURSE

This is designed to equip learners with knowledge and skills for computational thinking and creativity so as to understand and change their world.

Our Computing Course is divided in three inter-related stands of Computer Science, Information Technology, and Digital Literacy & E-Safety

1. Foundations of Computer Science: Basic principles of information and computation, how digital systems work and basic computer programming
2. Foundations of Information Technology: Use of computers for functional purposes, storage & organisation of files and content and understanding of devices and their purposeful use
3. Digital Literacy: E-Hygiene, handling information and E-Safety

Learners will gain knowledge and skills in:

1. Computational logic including decomposition, abstraction and algorithms
2. Creating, manipulating and editing digital material
3. Being safe and responsible online

## LEARNING PATHS

The learner will steadily follow this learning path for full completion

1. Foundational creative computing
2. Fundamentals of physical computing
3. Applied physical computing
4. Mobile app development
5. Artificial intelligence & machine learning
6. Communication and internet working.

Each of the mentioned stages along the learning path is a 6 weeks programme.

