

SEPT / OCT

NOV / DEC

JAN / FEB

MAR / APR

APR / MAY

JUNE

YEAR 7

Unplugged

Students learn to think like a machine, building fluency in the fundamental building blocks of computation.

Sequence, variables, iteration, selection, flowcharts, debugging, decomposition, abstraction

Diorama Design B

Systems help organise resources to reduce risk.

Key: Systems
Related: Resources
Context: Scientific and Technical Innovation

Diorama Engineering & programming C

Identity can be enhanced by functional community projects

Key: Communities
Related: Function
Context: Identities and relationships (Social development, health, wellbeing and lifestyle choices)

Vex IQ robotics

Anatomy of a robot; Construct Clawbot; VexCode introduction (blocks) Linear precision (calibrate distance) Using loops (complete a lap) Distance sensor (wall stop) Conditional logic; Maze solve

YEAR 8

Mission to Mars A

Designers enhance the form of a product to meet the needs of communities

Key: Communities
Related: Form
Context: Identities and relationships (adaptation, form)

Mission briefing; review; plan the mission path; Inertial sensors (Gyro); Optical sensor (green tiles v red tiles); Search patterns (distance sensor search); Variable based scoring; black box challenge (code for unseen elements); Grand rescue

Unplugged

think like a computer scientist, engaging with how data is represented and how algorithmic choices affect performance.

Binary data; compression, searching, sorting, graph theory, algorithmic complexity.

Intro to block programming

Syntax/variables/io Variables/calculations Selection/repetition

Program a game console C

Functional products can be developed and adapted using components.

Key: Development
Related: Form
Context: Scientific and technical innovation (adaption, ingenuity, progress)

YEAR 9

Intro to Python programming A

Syntax/variables/io Variables/calculations Selection/repetition Lists APIs

Smart plant pot Program design B

The development of sustainable systems positively improves the environment.

Key: Systems
Related: Sustainability
Context: Globalisation and sustainability (human impact on the environment)

Smart plant pot Engineering & programming C D

Social entrepreneurs can innovate and influence communities.

Key: Communities
Related: Innovation
Context: Fairness and development (social entrepreneurs)

MicroPython on the ESP32, Wire sensors and actuators, Implement project in code.

Smart plant pot 3d design & printing

Shapr3d, Sketching, Extruding, Other basic tools, Design a 3d pot according to constraints (soil, electronics, water compartments); 3d print on Bambu.