Thornleigh
Salesian College

Computer Science KS3 Learning Journey

Top 3 tips for parents and carers during KS3

- ✓ Practise python programming using the code club challenges.
- ✓ Use Apps / Games to learn programming on a mobile phone.
- ✓ Read around the subject and look at how the different parts of computers work such as the CPU, storage and memory.

Places to visit during KS3

Science and Industry Museum
Google Classroom

Online learning during KS3

Code
Scratch
BBC Bitesize
Code Club
Trinket
Hour of Code
Google Classroom

Student development opportunities during KS3

Computer Science Club, E-Safety Week, Hour of Code, Bebras Challenges, Games Club, Robotics Challenges.

Key assessment pieces during KS3

Each topic includes an end of topic assessment. This consists of a series of multiple choice questions follwed by an extended question.

Knowledge, skills and understanding

1. E-Safety
Staying Safe Online, Passwords, Cyber-bullying, Masquerading, Keeping Data Safe Online, Reporting Online Concerns, Reliability Of Data
Year 7

2. Computer Systems
Hardware Software, Inputs, Outputs, Data Representation (Binary, Ascii, Data Sizes), Infographics
Year 7

3. Creating Sequences and Computational Logic
Decomposition, Abstraction, Algorithms, Sequences, Iteration (Loops) Sub-routines, Variables
Year 7

5. Block Based Programming using Scratch
Product Life Cycle: Design, Build, Test, Evaluate, Variables, Sequences Of Instructions, Selection (Computer Choice), Input / Output / Feedback, Physical Computing (Using Makey-makeys) / Artificial Intelligence And Machine Learning.
Year 7

4. Python Programming
Physical Computing & Micro-Controllers - Interpreting Flow-diagrams and Algorithms
Year 7

6. Text Based Programming using Python
Syntax, Computational Thinking, Programming Logic, Levels Of Programming Languages, Inputs / Outputs, Sequence + Selection, Variables
Year 7

1. E-Safety
Digital Footprints, Copyright, Creative Commons, Back-ups, Anti-malware, Data Laws, Reliability Of Data, Keeping Safe Online, Reporting Online Concerns
Year 8

2. Computer Systems
Memory and Storage, CPU, Motherboard Components, Embedded Systems, Website Development
Year 8

3. Computational Thinking Using Robotics
Algorithms, Flow Diagrams, Interpreting Algorithms, Loops, Sub-routines, Variables, Selection And Sequence
Year 8

4. Python Programming
Physical Computing & Micro-Controllers - Interpreting Flow-diagrams and Algorithms
Year 8

5. Graphics
Create, reuse, revise and repurpose digital artefacts for a given audience, with attention to trustworthiness, design and usability.
Year 8

6. Python Programming with Boolean Logic
Boolean Logic (AND, OR, NOT), Arrays and data structures, Binary conversions, addition and shifts
Year 8

1. E-Safety
Cyberbulling, online safety, reporting online concerns.
Year 9

2. Computer Systems
Fetch-Decode-Execute Cycle, Types of Computer Systems, Hardware and Software
Year 9

3. Computational Thinking & Algorithms
Decomposition of problems, Using Sub-Routines (functions and procedures), creating flow charts for algorithms
Year 9

4. HTML and Website Design
Designing basic websites using HTML5 and CSS.
Year 9

5. Python Programming, Physical Computing & Micro-Controllers
Interpreting Flow-diagrams and Algorithms
Year 9