

| Area of Study                                |                                                  | Worksheet | Homework | Lesson Notes in Book | RAG |
|----------------------------------------------|--------------------------------------------------|-----------|----------|----------------------|-----|
| Unit 1 - Fundamentals of Programming         | L1 - Programming Basics                          |           |          |                      |     |
|                                              | L2 - Selection                                   |           |          |                      | N   |
|                                              | L3 - Iteration                                   |           |          |                      | N   |
|                                              | L4 - Arrays                                      |           |          |                      | N   |
|                                              | L5 - Subroutines                                 |           |          |                      | N   |
|                                              | L6 - Files and Exception Handling                |           |          |                      | N   |
| Unit 2 - Problem Solving                     | L1 - Computational Thinking                      |           |          |                      | N   |
|                                              | L2 - Structured Programming                      |           |          |                      | N   |
|                                              | L3 - Writing and Interpreting Algorithms         |           |          |                      | N   |
|                                              | L4 - Testing                                     |           |          |                      | N   |
|                                              | L5 - Abstraction and Automation                  |           |          |                      | N   |
|                                              | L6 - Finite State Machines                       |           |          |                      | N   |
| Unit 3 - Data Representation                 | L1 - Number Systems                              |           |          |                      | N   |
|                                              | L2 - Bits, Bytes and Binary                      |           |          |                      | N   |
|                                              | L3 - Binary Arithmetic                           |           |          |                      | N   |
|                                              | L4 - Representing Images                         |           |          |                      | N   |
|                                              | L5 - Representing Sound                          |           |          |                      | N   |
|                                              | L6 - Data Compression and Encryption             |           |          |                      | N   |
| Unit 4 - Hardware and Software               | L1 - Hardware and Software                       |           |          |                      | N   |
|                                              | L2 - Role of an Operating System                 |           |          |                      | N   |
|                                              | L3 - Programming Language Classification         |           |          |                      | N   |
|                                              | L4 - Programming Language Translators            |           |          |                      | N   |
|                                              | L5 - Logic Gates                                 |           |          |                      | N   |
|                                              | L6 - Boolean Algebra                             |           |          |                      | N   |
| Unit 5 - Computer Organisation               | L1 - Internal Computer Hardware                  |           |          |                      | N   |
|                                              | L2 - The Processor                               |           |          |                      | N   |
|                                              | L3 - Processor Instruction Set                   |           |          |                      | N   |
|                                              | L4 - Assembly Language                           |           |          |                      | N   |
|                                              | L5 - Input and Output Devices                    |           |          |                      | N   |
|                                              | L6 - Secondary Storage Devices                   |           |          |                      | N   |
| Unit 6 - Communications                      | L1 - Communication Methods                       |           |          |                      | N   |
|                                              | L2 - Network Topology                            |           |          |                      | N   |
|                                              | L3 - Client-to-Server and Peer-to-Peer           |           |          |                      | N   |
|                                              | L4 - Wireless Networking                         |           |          |                      | N   |
|                                              | L5 - Communication and Privacy                   |           |          |                      | N   |
|                                              | L6 - Social, Legal and Cultural Issues           |           |          |                      | N   |
| Unit 7 - Data Structures                     | L1 - Queues                                      |           |          |                      | N   |
|                                              | L2 - Lists                                       |           |          |                      | N   |
|                                              | L3 - Stacks                                      |           |          |                      | N   |
|                                              | L4 - Hash Tables                                 |           |          |                      | N   |
|                                              | L5 - Graphs                                      |           |          |                      | N   |
|                                              | L6 - Trees                                       |           |          |                      | N   |
|                                              | L7 - Vectors                                     |           |          |                      | N   |
| Unit 8 - Algorithms                          | L1 - Recursive Algorithms                        |           |          |                      | N   |
|                                              | L2 - Big-O Notation                              |           |          |                      | N   |
|                                              | L3 - Searching and Sorting                       |           |          |                      | N   |
|                                              | L4 - Graph Traversal Algorithms                  |           |          |                      | N   |
|                                              | L5 - Optimisation Algorithms                     |           |          |                      | N   |
|                                              | L6 - Limits of Computation                       |           |          |                      | N   |
| Unit 9 - Regular Languages                   | L1 - Mealy Machines                              |           |          |                      | N   |
|                                              | L2 - Sets                                        |           |          |                      | N   |
|                                              | L3 - Regular Expressions                         |           |          |                      | N   |
|                                              | L4 - Turing Machine                              |           |          |                      | N   |
|                                              | L5 - Backus-Naur Form                            |           |          |                      | N   |
|                                              | L6 - Reverse Polish Notation                     |           |          |                      | N   |
| Unit 10 - The Internet                       | L1 - Structure of the Internet                   |           |          |                      | N   |
|                                              | L2 - Packet Switching and Routers                |           |          |                      | N   |
|                                              | L3 - Internet Security                           |           |          |                      | N   |
|                                              | L4 - TCP/IP Standard Application Layer Protocols |           |          |                      | N   |
|                                              | L5 - IP Addresses                                |           |          |                      | N   |
|                                              | L6 - Client-Server Model                         |           |          |                      | N   |
| Unit 11 - Databases and Software Development | L1 - Entity Relationship Modelling               |           |          |                      | N   |
|                                              | L2 - Relational Databases and Normalisation      |           |          |                      | N   |
|                                              | L3 - Introduction to SQL                         |           |          |                      | N   |
|                                              | L4 - Defining and Updating Tables using SQL      |           |          |                      | N   |
|                                              | L5 - Systematic Approach to Problem Solving      |           |          |                      | N   |
| Unit 12 - OOP and Functional Programming     | L1 - Basic Concepts of OOP                       |           |          |                      | N   |
|                                              | L2 - OOP Design Principles                       |           |          |                      | N   |
|                                              | L3 - Functional Programming                      |           |          |                      | N   |
|                                              | L4 - Function Application                        |           |          |                      | N   |
|                                              | L5 - Lists in Functional Programming             |           |          |                      | N   |
|                                              | L6 - Big Data                                    |           |          |                      | N   |

#### Worksheet, Homework & Notes Columns

Y = Complete

Blank = Not Complete

N/A = Not Applicable

#### RAG Column

R = Red

A = Amber

G = Green

N = Not Learned