

# M2 Computers

## Course Syllabus - 2024 Term 2

**Teacher:** Allan McDonald

**Department:** Science

**Subject Code:** SC22104

**Periods per week:** 1

**Credits:** 0.5

### Course Description

#### Digital Citizenship

Students will learn about the core concept of digital citizenship. They will further examine specific elements of digital citizenship

#### Design a Computer

Students will build upon knowledge gained about computer components and peripheral devices during semester 1. They will use online computer stores to select the parts needed to build the ultimate gaming computer

#### Computer Programming

Students will build on their coding experience as they program animations, interactive art, and games in Game Lab, on the Code.org platform. The unit starts off with simple shapes and builds up to more sophisticated sprite-based games, using the same programming concepts and the design process computer scientists use daily.

#### Exams Review Journal

In the final classes of the semester, students will learn how to use the document view feature of Google Docs to create a journal of all of the subject topics and content they have studied throughout the semester.

### Course Content

1. Digital Citizenship
  - 1.1. Digital Citizenship 2
  - 1.2. Digital Citizenship 3

2. Canva Poster Making
3. Design a computer
  - 3.1. Computer components and peripheral devices
  - 3.2. Computer cost
4. Computer Programming
  - 4.1. Drawing in Game Lab
  - 4.2. Shapes and Parameters
  - 4.3. Variables
  - 4.4. Random Numbers
  - 4.5. Sprites
5. Exams Review Journal

## Learning Outcomes

### 1. Digital Citizenship

- Understand the general concept of Digital Citizenship
- Be aware there are 9 individual elements to Digital Citizenship
- Understand in detail 3 of the 9 elements and how they relate to life online
- Understand that the 9 elements in Digital Citizenship are shared among three principles (Respect, Educate, and Protect)

### 2. Canva

- Understand how to design an effective poster
- Understand the causes of air pollution
- Know the effects of air pollution
- Become familiar with methods to prevent air pollution

### 3. Design a computer

- Learn about computer components and peripheral devices
- Research the cost of building a computer

### 4. Computer Programming

- Drawing
- Using the Grid
- Debugging
- Use RGB to change colours

- Change parameters of shapes
- Change the background
- Understand how variables are used
- Give variables correct names
- Reuse variables
- Use the random number block as arguments to shape parameters
- Use random numbers as variable values
- Use random number variables to change drawings
- Create sprites
- Change sprite values
- Debug code to the correct order to make it run
- Change the order of sprites

## 5. Exams Review Journal

- Understand the extent of the coursework review needed to prepare for the final exams
- Know which topics for each subject need to be reviewed
- Basic formatting of headings in Google Docs
- Understand the document outline feature in Google Docs
- Become familiarized with content for each subject topic

## Learning Resources

- Chromebook
- Google Classroom
- Google search
- Google Docs
- Canva
- Code.org

## Assessment Methods

Students will be assessed on the extent to which they have achieved mastery of the learning outcomes. Assessment will be by way of evaluating assignments produced by students at the end of each topic. A final assessment will be based on the level of completion of the Interactive Animations and Games course.

## Homework Policy

Any late assignments may receive a maximum score of 50% of the total possible points.

Two weeks after the due date, assignments may not be accepted and a grade of 0 may be given.

If students are absent when assignments are assigned or on an assignment due date it is the responsibility of the student to contact the teacher to make arrangements for submission.

## Evaluation Breakdown

Assessments 80%

- One assignment per topic will be assessed

Project

- Interactive Animations and Games course 20%

## Thai National Curriculum Standards

### Strand 3: Information and Communication Technology (ICT)

Standard OT3.1: Understanding, appreciation and efficient, effective and ethical application of information technology in searching for data, communicating, problem-solving, working and livelihood.

OT 3.1 Gr7/1: Explain the principles of function, the roles and the benefits of a computer.

OT 3.1 Gr7/2: Discuss the main characteristics and the effects of information technologies.

OT 3.1 Gr7/3: Process the data so as to serve as information.

[Total 3 indicators]