EDUCATION
We see **genius** in every child

Inspiring excellence, empowering global minds

Course Outline

ICT Year 7

Overview

The Computing Syllabus at GEMS Wesgreen International Secondary School. We aim to support students in becoming confident and responsible young adults with a changing world around them. To prepare young adults in the real world we have developed a stimulating curriculum encouraging students to learn about computers, technology, coding and a wide range of creativity skills. These skills are transferrable as students will have the opportunity to develop logical thinking skills, have a strong ability to problem solve, communicate effectively and work collaboratively to better equip them for the modern world.

Learning Outcomes

The national curriculum for computing aims to ensure that all students:

- Can use technology effectively to create, organize, store, manipulate and retrieve digital content.
- Confident at using a computing device to open programs and index files and folders.
- Understand programming concepts (building blocks)
- Define and identify sprites, scripts, stage, costumes and Libraries.
- Can control a sprite.
- Can change the size and color of different sprites
- Can play music on scratch
- Create variables.
- Use the stamp and clear blocks
- Be able to understand if-then block
- develop an understanding of fixing bugs of a certain code
- use discussion to learn; they should be able to elaborate and explain clearly their understanding and ideas

Ongoing Objectives

- Throughout each unit the students are allowed to build on the objectives below:
- They learn core computational concepts such as iteration and conditionals. They also gain an understanding of important mathematical concepts such as coordinates, variables, and random numbers. Significantly, students learn these concepts in a meaningful and motivating context.
- Learn to think creatively.
- Work collaboratively, and reason systematically.
- Learn essential skills
- Code their interactive their own stories and animations

- To observe closely, using simple equipment.
- To performing simple tests.
- To identify and classifying.
- Students will be able to build on Mathematical concepts while working on coding in Scratch.
- Create games

Students will also be building on their English vocabulary by coming across various technical terms of coding in Scratch

Unit Overviews

Term 1

Unit 1 – Exploring Scratch **Approx length: 1 weeks**

In this first unit of Grade 6, the student will explore how to use scratch to create their own games and animations. They learn what each block color does.

They will be able to understand a basic model of scratch that will provide information relating to scratch projects.

Specific National Curriculum Objectives Covered:

- To review and understand the basic interface
- Click on the different menus
- To learn what each building block does
- To try building scripts.

Unit 2 – Magic slate **Approx length: 2 weeks**

In this unit, the student are ready to build a drawing board using the magic slate template, they will learn how to build simple scripts to make a project and how to control a sprite and to draw in scratch.

How to make sprites change size and color

Specific National Curriculum Objectives Covered:

- To build simple scripts to make a game
- How to use scratch library to add backdrop and sprites, and sounds
- How to control a sprite
- How to make a background interactive.
- To make sprites change size and color

Unit 3 – Ocean Rider **Approximate length: 2 weeks**

In this unit, the student will use scratch's stamp block and shapes to create a maze template. Students will then go ahead and program their shapes to end the game or restart upon contact.

Specific National Curriculum Objectives Covered:

- To understand what variables are
- To discuss how if-then loop work
- To use the stamp and clear blocks
- To learn how to create variables and use them
- To work with sliders for variables
- To create shapes

Unit 4 – E-safety **Approximate length: 2 weeks**

In this unit, the student will learn about E-safety and the potential issues that can be faced using the internet, social media and other online platforms. Students will be looking at risks and how to mitigate these risks.

Specific National Curriculum Objectives Covered:

- To understand what e-saftey is.
- To discuss how to protect yourself online.
- To learn what mis-information is and how to reduce the impact of mis-information
- To learn how to prevent cyber bullying.
- To discuss the dangers of extended screen time.

Unit 5 – Power point maze game **Approximate length: 3 weeks**

In this unit, the student will be using power point to create a maze game. They will be using different presentation skill to create this such as creating hyperlinks, adding animations, transitions and triggers.

Specific National Curriculum Objectives Covered:

- To develop creative thinking
- To create different slides
- To use animations to allow certain aspects to move.
- To learn how to use triggers to end a game and restart a game.
- To add images and edit them

One week will be used for revision week

One week will be used for assessment week

Term 2

Unit 4 – Kodu game design. **Approximate length: 8 weeks**

In this unit, the student learn how to use Kodu game design. This is an animated program developed by Microsoft to introduce students to game design and programming. It will allow students to express their creativity in a 3D world. This world will allow students to develop a 3d world with characters and other objects. The idea behind this is to incorporate modelling and programming concepts to prepare students for year 8.

Specific National Curriculum Objectives Covered:

- Game design and modelling - To use the Kodu interface and understand what features can be used to create a world.
- To be able to create a simple world and add a landscape using different terrains.
- To be able to modify and adjust the terrain by adding objects and other features such as water, volcano and other.
- To be able to save a simple world and load it for later use.
- To be able to add objects and be able to interact with them.
- Programming concepts - I can program the Kodu sprite to move (left, right, faster and slowly. The character should also be able to fire rockets/blips.
- Create a basic game with a layout and structure, this could be a shooting game, eating game or racing game.
- Add a Kodu character that can interact with other characters and be able to eat them.
- Create a simple variable that can be used as a score generator.

One week will be used for revision week

One week will be used for assessment week

Term 3

Unit 5 – Kodu game project **Approximate length: 2-3 weeks**

In this unit, the students will utilize their skills to showcase what they have learned in term 1 & 2. It will allow students to demonstrate design and programming skills by creating a game of their choice which should include a score generator.

Specific National Curriculum Objectives Covered:

- To draw and develop a game area.
- To plan and design and effective game.
- Use a range of 3d modelling.

- To apple a score generator.
- To make game more fun and interactive.

Unit 6 – Game maker **Approximate length: 2 weeks**

In this unit students will see the fundamentals of how games are created using a 3D platform. It will allow students to gain exposure into how developers and designers create games. This will be done through a range of building blocks. The game can be used in correlation with English and literature lessons as it is based on a Macbeth theme.

Specific National Curriculum Objectives Covered:

- To draw and develop a game area.
- To plan and design and effective game.
- Use a range of 3d modelling.

Unit 6 – Shapr3d **Approximate length: 4 weeks**

In this unit students will see how 3d modelling and design is done through an interactive platform where shapes and polygons can be used to create real life projects. Students will be able to use 2d objects and convert them into 3d elements. These objects can then be used to create things such as buildings, tools and other objects.

Specific National Curriculum Objectives Covered:

- To draw and develop a game area.
- To plan and design and effective game.
- Use a range of 3d modelling.
- Sketching shapes and modelling them.
- Using directional points to model shapes and design elements.
- To create real life elements such as Dubai frame/Burj Khalifa.

Assessment

Formative: Throughout the units, the children will complete graded work, quizzes and investigation activities which allows the teacher to assess the students' attainment and inform their planning.
Summative: There will be an end of term (or Unit) Assignment on Teams on each topic which can be graded and used to produce a final year score.

Face to face – in class (Practical)