YEAR 9 LP2

SUBJECT: Computer Science

**Knowledge Focus:** Create a computer game using the Greenfoot programming environment.

Ysgol Uwchradd Prestatyn High School

**This half term : Skills, Knowledge and Understanding to be developed:**

Practical:

- Students will use Greenfoot to create a game. They will learn the difference between classes and objects.

Theory

- Students will learn about different file formats such as vector and bitmap.
- They wil use binary and hexadecimal numbers and find out how data is stored and transmitted.
- Resources: https://www.advanced-ict.info/theory/NC/scheme_1.html

**Key Terms to be learned this half term:**

Stage, Animal, IF, Move, Turn, canSee, AtWorldEdge, Eat, isKeyDown, getRandomNumber, bitmap, vector, hexadecimal, binary, serial and parallel transmission.

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| **Week 1 & 2 Learning Objectives etc:**<br><br>**Practical:**<br>• Introduce Greenfoot<br>• Set up a'World' as a background with appropriate dimensions<br>• Add players to the environment, with appropriate names and positioning<br><br>**Theory:**<br>• LP2.1 - What is the difference between **bitmap and vector images** | **Objective assessments:**<br><br>Evidence of objects added to the World.<br><br>Class questions answered | **Homework:**<br><br>**LP2.1 –**<br>**Proof reading exercise** |
| **Weeks 3 & 4 Learning Objectives etc:**<br><br>**Practical:**<br>• Facilitate the control and movement of players using keyboard controls<br>• Create automated movement<br>• 'Sense' the presence of other objects and react accordingly<br>**Theory**:<br>• LP2.2 - What is binary and why is it used in computers?<br>**Number bases**<br>**DCF: 4.1 detect and correct simple errors in algorithms** | **Objective assessments:**<br><br>Evidence of movement of objects.<br><br>Class questions on binary/hexadecimal | **Homework:**<br><br>**LP2.2 – Number bases homework** |
| **Weeks 5 & 6 Learning Objectives etc:**<br><br>**Practical:**<br>• Eat objects using the if(CanSee…) command<br>• Create message displays to display win or lose<br>• Use a counter variable to add up any food eaten<br>• Increment variables<br>• Use conditional statements to display appropriate messages<br><br>SA1<br>End of topic test | **Objective assessments:**<br><br>Evidence of message displays working and use of a counter.<br><br>Class questions on transmission and error correction. | **Homework:**<br><br>**LP2.3 - Transmission homework** |

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| **Theory**:<br>• LP1.3 – What is serial and parallel transmission?<br>• **Transmission and error correction.** | |
| **Weeks 7 and 8 Learning Objectives etc:**<br><br>Practical:<br>• Ensure the game works correctly, evaluate code used.<br>Theory:<br>• Complete all theory tasks.<br><br>**Objective assessments:**<br><br>Assessment of final Greenfoot program. | |