

YEAR 9 LP2

SUBJECT: Computer Science

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



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**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 will 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](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.

**Week 1 & 2 Learning Objectives etc:**

**Practical:**

- Introduce Greenfoot
- Set up a 'World' as a background with appropriate dimensions
- Add players to the environment, with appropriate names and positioning

**Theory:**

- LP2.1 - What is the difference between **bitmap and vector images**



**Objective assessments:**

Evidence of objects added to the World.

Class questions answered

**Homework:**

**LP2.1 – Proof reading exercise**

**Weeks 3 & 4 Learning Objectives etc:**

**Practical:**

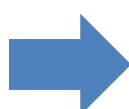
- Facilitate the control and movement of players using keyboard controls
- Create automated movement
- 'Sense' the presence of other objects and react accordingly

**Theory:**

- LP2.2 - What is binary and why is it used in computers?

**Number bases**

DCF: 4.1 detect and correct simple errors in algorithms



**Objective assessments:**

Evidence of movement of objects.

Class questions on binary/hexadecimal

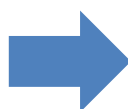
**Homework:**

**LP2.2 – Number bases homework**

**Weeks 5 & 6 Learning Objectives etc:**

**Practical:**

- Eat objects using the if(CanSee...) command
- Create message displays to display win or lose
- Use a counter variable to add up any food eaten
- Increment variables
- Use conditional statements to display appropriate messages



**Objective assessments:**

Evidence of message displays working and use of a counter.

Class questions on transmission and error correction.

**Homework:**

**LP2.3 - Transmission homework**

SA1  
End of topic  
test

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**Theory:**

- LP1.3 – What is serial and parallel transmission?
- **Transmission and error correction.**

**Weeks 7 and 8 Learning Objectives etc:**

Practical:

- Ensure the game works correctly, evaluate code used.

Theory:

- Complete all theory tasks.



**Objective assessments:**

Assessment of final Greenfoot program.