Camborne Science & International Academy
Year 7 Curriculum Semester 2 2017

Subject: Computing

Algorithmic thinking in scratch

In this topic, students will create a fully functioning computer game. Through completing this topic, students will develop problem solving skills and learn the fundamentals of computational thinking.
The topic is split in two parts. In the first half students will learn about different programming constructs that can be used in Scratch. Each lesson will model how to decompose problems, constructing algorithms for computer systems to follow. In later lessons, students will be planning, producing, and evaluating their own games

Key Performance Indicators

Students will be assessed to see if they can:

- Use diagrams to design solutions (algorithms) that use repetition and two-way selection i.e. if, then and else.
- Use logical reasoning to predict outputs, showing an awareness of inputs.
- Know that users can develop their own programs, and can demonstrate this by creating a simple program in an environment that does not rely on text e.g. programmable robots etc.
- Use arithmetic operators, if statements, and loops, within programs.
- Can detects and corrects simple semantic errors i.e. debugging, in programs.

Suggested Resources

https://sites.google.com/a/cambornescience.co.uk/year-7-computing/topic-3

Subject: Computing

Ai-Kea

In this Unit of work students will be introduced to the computer science constructs and will program algorithms using a syntax based language. Students will be designing algorithms that create isometric CAD drawings for Ai-Kea, a furniture designing and manufacturing company.

Key Performance Indicators

Students will be assessed to see if they:

- Are able to design solutions by decomposing a problem and creates a sub-solution for each of these parts.
- Can declare and assign variables. I have done this using high-level textual language, using standard libraries when programming.
- Appropriately uses if and if, then and else statements as well as relational operators within a loop to govern termination.
- Are able to design, write and debug modular programs using procedures. Understanding that that a procedure can be used to hide the detail with sub-solution.
- Understand that programs execute by following precise instructions.

Suggested Resources

https://sites.google.com/a/cambornescience.co.uk/year-8-computing/topic-5---ai-kea