

Question: How can you design a game?

Programming A- variables in games

National Curriculum Link:

-Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts

-Use sequence, selection, and repetition in programs; work with variables and various forms of input and output

-Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs

-Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information

International Baccalaureate Learner

Profile Link:

Communicators.

How do we express and present ourselves to others?

How can we communicate with others?

We can be clear in both written and oral form?

Principled.

To take my time and think before acting.

To remain calm, thoughtful and deliberate in my actions.

Caring

What does it mean to be caring?

What people, actions and ideas do I care most about?

How do I show that I care through my actions and words?

Prior Skills: Year 5	New Skills: Year 6	Future Skills: KS3
<p>To explain that a condition can only be true or false .</p> <p>To relate that a count-controlled loop contains a condition.</p> <p>To compare a count-controlled loop with a condition-controlled loop.</p> <p>To explain that a condition-controlled loop will stop when a condition is met.</p> <p>To explain that when a condition is met, a loop will complete a cycle before it stops.</p> <p>To create a condition-controlled loop.</p> <p>To use a condition in an 'if...then...' statement to start an action.</p> <p>To explain that selection can be used to branch the flow of a program.</p> <p>To explain that a loop can be used to repeatedly check whether a condition has been met.</p> <p>To use selection to switch the program flow in one of two ways.</p> <p>To use a condition in an 'if...then...else...' statement to produce given outcomes.</p> <p>To explain the importance of instruction order in 'if...then...else...' statements.</p>	<p>To identify a variable in an existing program.</p> <p>To experiment with the value of an existing variable.</p> <p>To choose a name that identifies the role of a variable to make it more usable (to humans).</p> <p>To decide where in a program to set a variable.</p> <p>To update a variable with a user input.</p> <p>To use an event in a program to update a variable.</p> <p>To use a variable in a conditional statement to control the flow of a program.</p> <p>To use the same variable in more than one location in a program.</p>	<p>To understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems</p> <p>To understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems</p> <p>To understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits</p> <p>To understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits</p>

Year 6 Spring 1

Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.

To test the program and recognising when it needs to be debugged.

To attempt to debug their own programs and corrects/ debugs errors in code.

To recognise an error in an existing program and attempt to debug/ fix the program.

Resources:

Hardware: iPads,
Computers.

Websites or Apps: Apps: Book creator.

<https://www.schoolsofkingedwardvi.co.uk/ks2-computing-computer-programming-6-variables/>

<https://www.theschoolrun.com/what-is-a-variable-in-computing>

<https://www.computingunlocked.org.uk/uploads/1/0/7/8/1/07896963/37680-ks2-variables-unplugged-activity-barefoot-computing-project.pdf>

Extended Writing Opportunities:

To extend the game, using more variables.

Vocabulary:

Variables, modify,
Scratch, real-world,
programs, unplugged
task, algorithmic,
code, game.

Numeracy skills:

Directional language.

Suggested Quality

Texts:

See selection in
library.

WOW Experience:

NCCE link.

Cross Curricular Links:

Science: game related to current science topic.