Lesson Plan – Micro:bit

# Introduction to Conditionals

Code Playground

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# Learning objectives

"Using my knowledge of variables and conditionals, I can create a game of Rock, Paper, Scissors with my micro:bit"

Pupils should be taught to design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts

"I understand the operation of a process and its outcome. I can structure related items of information."

"I can demonstrate a range of basic problem solving skills by building simple programs to carry out a given task, using an appropriate language."

# Resources

- Laptops or desktop computers
- BBC micro:bits (one per computer)
- https://microbit.org

# Main activity

Ask the children what a 'condition' is.

A condition is a bit like a rule that needs to be met BEFORE something else can happen, for example:
- IF you eat all of your dinner, THEN you can have dessert
- IF it doesn't rain tomorrow, THEN I will clean the car
- IF you study hard, THEN you will get good grades

Can the children think of any other examples?

Ask the children to stand up. They are going to simulate a computer programme responding to conditional statements. If children should sit down if they hear a statement that isn't true about themselves. Some examples can include:
- If you walked to school today, then sit down
- If you have a packed lunch, then sit down
- If you have brown hair, then sit down

Repeat this activity until there is only one child still standing. The child that meets all of the conditions is able to make it all of the way through the computer programme.

The children will now be using the micro:bit MakeCode editor to create a game that uses conditional statements and variables. Ask the children if they can find a block that might help them create conditional statements.

The children will now create the classic game Rock, Paper, Scissors using the micro:bit. Can they think of any conditionals that they might use

The game will be created so that the micro:bit makes a random 'choice' of rock, paper or scissors when the input is selected.

It might help to set up the variable together as a class

The class should work in pairs to create their code

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# Differentiation

## Lower Ability/ASN

Build a skeleton code, that requires the children only to complete the conditional statements

## Higher Ability/Extension

Think of other games or activities that could use conditional statements, especially ones that use more than three conditions. For example, a magic 8 ball

Can the children use the existing programme and change it to create the new project

# Plenary

Have the children play the game against each other, or play themselves against the micro:bit

# Assessment Questions

Can you explain what a condition is?

What is a conditional statement? Give examples