Year 5 - Lesson 2: If-then

Learning Intention

- I can use the *if-then* instruction.

Introduction

What did we learn to do last week? (use the *current* operator) This week we will start with another task which uses *current* but we will combine this with another new piece of code, the *if-then* instruction. What does if mean? Can you put if into a sentence? Collect the best ideas on a class working wall. Where can we find the *if-then* instruction? (**Control** palette). What does the *if-then* instruction look like? *if-then* is a conditional instruction, this means the condition has to go in the empty hexagon and the result goes in the middle of the two arms.

Teacher Input 1

Ohbot can say the correct response for the time of day. If it is before 12 noon Ohbot can say good morning and if it is after 12 noon Ohbot can say good afternoon. We will now work together to write the code for these two if instructions. We need to start our program with a *when green flag clicked*. We will then need two *if* instructions - one for if it is before 12 noon and one for if it is after 12 noon.

We need to go to the **Operators** palette to find a hexagonal shaped operator to help us build the condition. In this example we need a greater than (**>**) operator and a less than (**<**) operator. If the hour is less than 12 the result is that we *say* 'good morning' and if the hour is greater than 12 the result is we say 'good afternoon'. *File*, *Save As* – 'if hour'.

We can take this further because Ohbot can ask you a question. You can type an answer and then in turn Ohbot can respond to your answer. For example, Ohbot can ask you your name and respond to the answer you type.
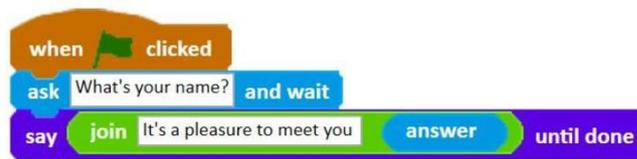
To ask a question we need to go to the **Sensing** palette and use an *ask and wait* instruction. Ohbot can reply by saying hello and using the response you typed in. You need a *join* operator from the **Operators** palette and an *answer* variable from the **Sensing** palette. *File*, *Save As* – 'ask name'.

We can take this even further by using the *if-then* instruction. Ohbot can respond to your question with different answers depending on your response to the question. For example, Ohbot can ask the question 'are you a boy or a girl?' Ohbot can respond appropriately depending on the answer you typed. What would be an appropriate response if you typed girl? (You are female). What would be an appropriate response if you typed boy? (You are male.)

Activities

1. Can you write some code to ask the question are you a boy or girl and respond appropriately?
2. Can you write your own question for Ohbot to ask and respond to?

Extension 1

You will need a dice. Can you write a program to make Ohbot ask the score when you throw it, and respond appropriately to each possible score? Top tip - How many possible outcomes can you have with a dice? (6) Therefore, how many if instructions will you need?

Extension 2

Can you edit your code?
Can you make Ohbot randomly generate an dice score between 1 and 6?
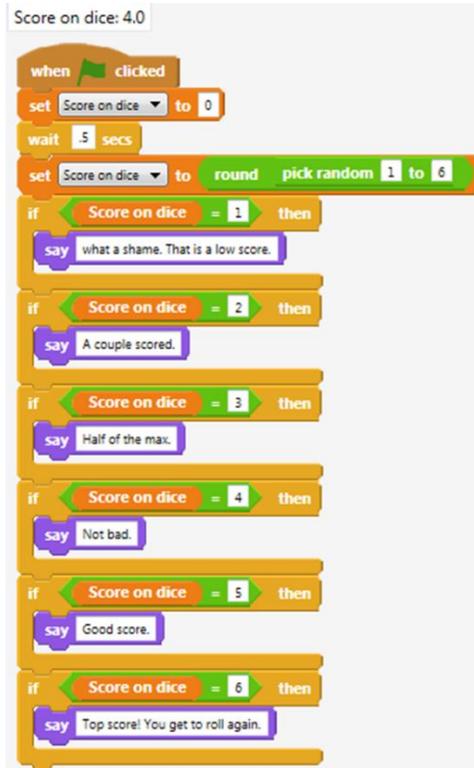
Score on dice: 4.0

```
when [flag] clicked
set [Score on dice ▼] to [0]
wait [.5] secs
set [Score on dice ▼] to (round (pick random [1] to [6]))
if <(Score on dice) = [1]> then
  say [what a shame. That is a low score.]
if <(Score on dice) = [2]> then
  say [A couple scored.]
if <(Score on dice) = [3]> then
  say [Half of the max.]
if <(Score on dice) = [4]> then
  say [Not bad.]
if <(Score on dice) = [5]> then
  say [Good score.]
if <(Score on dice) = [6]> then
  say [Top score! You get to roll again.]
```

```
when [flag] clicked
ask [What score did you roll on your dice?] and wait
wait [2] secs
if <(answer) = [1]> then
  say [what a shame. That is a low score.]
if <(answer) = [2]> then
  say [A couple scored.]
if <(answer) = [3]> then
  say [Half of the max.]
if <(answer) = [4]> then
  say [Not bad.]
if <(answer) = [5]> then
  say [Good score.]
if <(answer) = [6]> then
  say [Top score! You get to roll again.]
```

Plenary

Which tasks were you successful at? Show examples of children's coding. Which activity did you enjoy the most?