

Computing

# ICT -Year 8 . 1- Wednesday – 03-03-21- Variables

## Lesson 2 of 6

Follow the link to complete the quiz then start the lesson video

<https://teachers.thenational.academy/lessons/variables-65gpcd#>

Ben Garside



Computing

# Variables

## Lesson 2 of 6

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# In this lesson you will:

**Define what a variable is**

**Learn about Input/Process/Output**

**Trace the value of a variable**

**Code a sequence including a variable**



# Computing

Follow the link to start the lesson video

<https://teachers.thenational.academy/lessons/variables-65gpcd#>

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# Task 1 part 1: Predict

Read the code below.

PREDICT exactly what you think will happen. This is not a test, so don't worry about your prediction being correct.

```
when clicked clicked  
say hello for 2 seconds  
say I'm Big Ed from the year 2182 for 2 seconds  
ask_name
```

```
define ask_name  
ask what is your name and wait  
set name to answer  
say join hello name for 2 seconds
```

Source: Scratch



# Task 1 part 2: Predict

Write down below (in as much detail as you can) what you think the code will do

```
when clicked
say hello for 2 seconds
say I'm Big Ed from the year 2182 for 2 seconds
ask_name
```

```
define ask_name
ask what is your name and wait
set name to answer
say join hello name for 2 seconds
```

Source: Scratch



# Task 1 part 3

Open the following Scratch program and select **See inside**

[ncce.io/biged1](https://ncce.io/biged1)

<b>Were your predictions correct?</b>	
<b>Did anything surprise you about what happened when the code was executed?</b>	
<b>Did you miss anything out? If so, what?</b>	



# Task 2: Investigate - question 1

## Question

How do the following two blocks of code relate to each other?



Source: Scratch

## Answer

A large empty rectangular box intended for the user to provide their answer to the question.

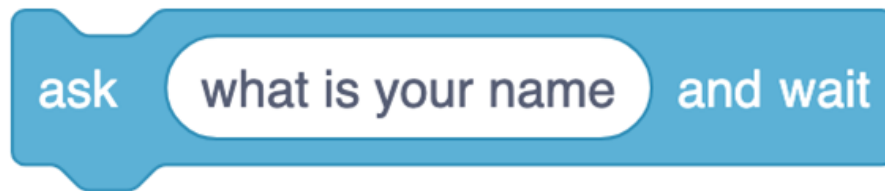




# Task 2: Investigate - question 2

## Question

**Temporarily** remove the following block:



Source: Scratch

What has this changed about the program when you run it?

Why do you think this is?

## Answer

A large empty rectangular box intended for the user to provide their answer to the question.



# Task 2: Investigate - question 3

## Question

Below **define ask\_name**,  
there are two variables  
being used.

What are their names?

## Answer



## Task 2: Investigate - question 4

Now place the **ask what is your name and wait** block back into the code, but place it after the **set name to answer** block:

### Question



```
Source: Scratch
define ask_name
  set name to answer
  ask 'What is your name?' and wait
  say 'join Hello name for 2 seconds'
```

Why do you think it only says “Hello” and not “Hello “ and the name you entered?

What can you learn from this?

### Answer



# Task 3 - part 1

## The music question

All of the code needed to make Big Ed ask about your favourite music has been included in the program. Place the blocks on the right-hand side into the appropriate places in the subroutine.

The image shows a Scratch code editor with a subroutine named 'ask\_music' defined. The code blocks are as follows:

- define ask\_music** (red block)
- ask** 'What music do you like?' and wait (blue block)
- switch costume to** 'frank-d' (purple block)
- set** 'music' to 0 (orange block)
- say** '?' for 2 seconds (purple block)

On the right-hand side, there are several loose blocks to be placed:

- join** 'music' and '?' (green block)
- switch costume to** 'frank-a' (purple block)
- join** 'AWESOME...I love' and '?' (green block)
- answer** (blue block)
- join** 'too' and 'name' (green block)

Source: Scratch



# Task 3 - part 1

## The music question

**When you have completed your code, if you know how, take a screenshot, and place it in the box to the right.**

**Errors in your code are known as 'bugs'. The task of fixing these errors is known as 'debugging'.**

**Did your code work first time?**

- **If anything didn't work:**
- **Explain what didn't work**
- **How did you debug the errors?**



## Task 3 - part 2

### The age question



Source: Scratch

Complete the `ask_age` subroutine. The subroutine has two lines of code provided. The subroutine should use the `age` variable to store the answer. Big Ed should then say the following two lines:

“Wow [age]” for 2 seconds

“You're much older than me in the year 2182” for 2 seconds

**Hint:** Use the same structures from the previous two questions to build this question.



# Task 3 - part 2

## The age question

**When you have completed your code, if you know how, take a screenshot, and place it in the box to the right.**

**Errors in your code are known as 'bugs'. The task of fixing these errors is known as 'debugging'.**

**Did your code work first time?**

- **If anything didn't work:**
- **Explain what didn't work**
- **How did you debug the errors?**



## Task 4: What's the temperature?

Big Ed has just arrived on a new planet and he's measuring the temperature of his new environment.

In the program on the next slide, you will see that there is a variable named 'temperature'.

Each time the variable changes value, Big Ed will say it's new value. Your task is to write down what Big Ed says each time you see the following:



Source: Scratch





# Task 4: What's the temperature?

```
when green flag clicked
  set temperature to 5
  say temperature for 1 seconds
  change temperature by 5
  say temperature for 1 seconds
  change temperature by -2
  say temperature for 1 seconds
  set temperature to 0
  say temperature for 1 seconds
  change temperature by 6
  say temperature for 2 seconds
```

Write in the space below the value of score when you see the **Say** block