

# Computing Outcomes Portfolio



Year 5 - Spring 1  
Block Coding (2Code - Gibbon 2)

## Intent

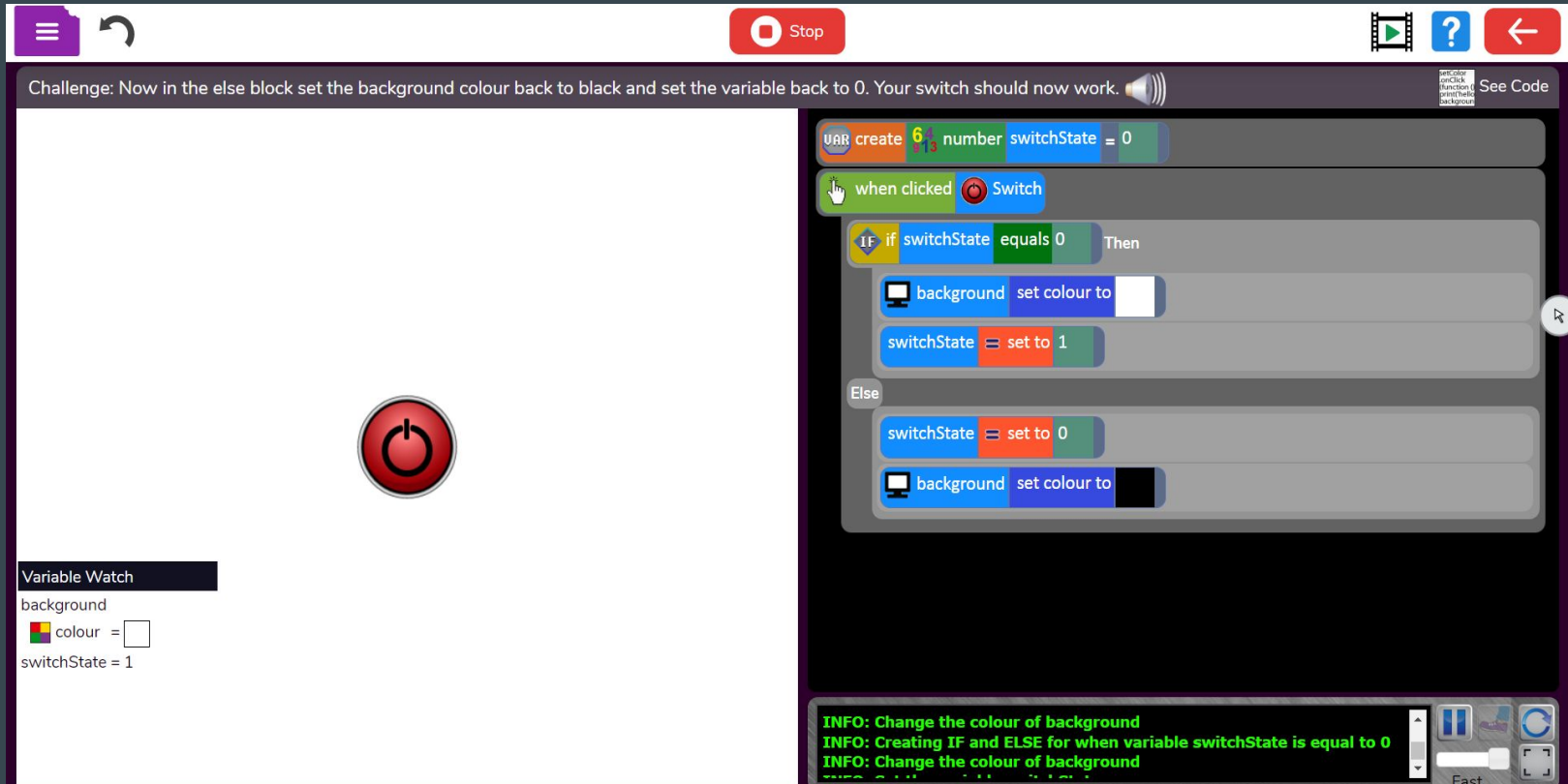
This unit consists of lessons that continue on from Years 1, 2, 3 and 4. The lessons will be based on the Gibbon activities in Purple Mash's 2Code.

The Gibbon guided activities provide further practice of the concepts that the children will be learning and can be used as extension activities. More able children can be encouraged to explore other things that they can change in their programs and experiment with the options available, such as variables and If statements.

Children will often be able to solve their own problems when they get stuck, either by reading through their code again or by asking their peers; this models the way that coding work is really done. More able children can be encouraged to support their peers, if necessary, helping them to understand but without doing the work for them.

# Lesson 1: L.Q. How do If/Else statements help create power on/power off switches?

Challenge: Now in the else block set the background colour back to black and set the variable back to 0. Your switch should now work.



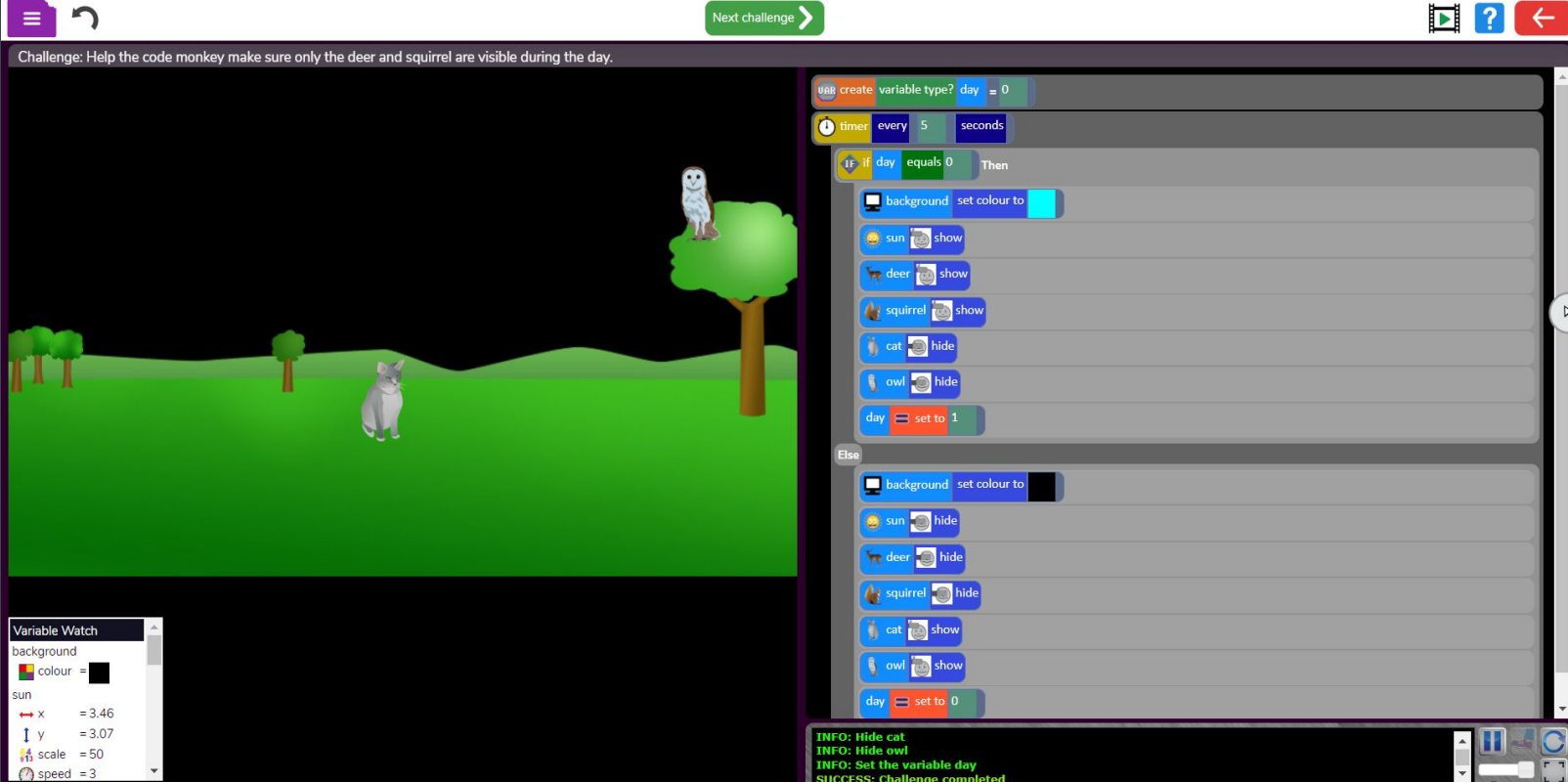
The image shows a Scratch code editor interface. On the left, a red power button icon is centered on a white background. Below it, a 'Variable Watch' panel shows 'background' with a color swatch, 'colour =', and 'switchState = 1'. On the right, the script area contains the following code:

- VAR create 6 number switchState = 0
- when clicked Switch
- If switchState equals 0 Then
  - background set colour to white
  - switchState = set to 1
- Else
  - switchState = set to 0
  - background set colour to black

INFO: Change the colour of background  
INFO: Creating IF and ELSE for when variable switchState is equal to 0  
INFO: Change the colour of background

# Lesson 2: L.Q. How could a timer variable contribute to the “sun” rising and setting repeatedly?

Challenge: Help the code monkey make sure only the deer and squirrel are visible during the day.



The image shows a Scratch code editor interface. On the left is a stage with a green field, a tree, a cat, and an owl. On the right is the code editor with the following blocks:


- create variable type? day = 0
- timer every 5 seconds
- if day equals 0 Then
  - background set colour to blue
  - sun show
  - deer show
  - squirrel show
  - cat hide
  - owl hide
  - day set to 1
- Else
  - background set colour to black
  - sun hide
  - deer hide
  - squirrel hide
  - cat show
  - owl show
  - day set to 0

**Variable Watch**

Variable	Value
background colour	black
sun x	3.46
sun y	3.07
sun scale	50
sun speed	3

**INFO:** Hide cat  
**INFO:** Hide owl  
**INFO:** Set the variable day  
**SUCCESS:** Challenge completed

# Lesson 3: L.Q. What are 2Code functions and how can they be used with?

Challenge: Using functions you can call the same code again and again, without having to repeat yourself.  [See Code](#)

This is a function

```
VAR create block function myFunction1
Print print to screen 'This is a function'
sound 1 times
myFunction1 call
myFunction1 call
```

Variable Watch

INFO: Create a function called myFunction1  
INFO: Call the function myFunction1  
INFO: Run print to screen command

Slow

# Lesson 4: L.Q. What code is required to create a simple game in 2Code?

The screenshot displays the 2Code programming environment. On the left, a game scene shows a forest with trees and several spiders. A white alert box is overlaid on the scene with the text: "Alert", "Click the bugs to splat them. You have ten seconds!", and an "Ok" button. Below the scene, a "Variable Watch" panel shows the following variables: background, colour, bug1 (with x=17, y=9, scale=50, speed=4), Time left: 10, and Score: 0. On the right, the code editor contains the following blocks: a "set to" block for myTime (10), an "alert" block with the message "Click the bugs to splat them. You have ten seconds!", a "timer" block set to "every 1 seconds", an "if" block with the condition "myTime greater 0". The "Then" branch contains a "subtract 1" block for myTime. The "Else" branch contains an "alert" block with the message "Time up! Your score is:" followed by a "+" block and a "myScore" block, and a "restart" block. Below the timer block is a "when clicked" block for "Any bug", which contains a "Clicked bug" block with a "hide" block and a "myScore" block with an "add 1" block. At the bottom right, an "INFO" panel displays: "INFO: Set the value of the variable myTime" and "INFO: Create an alert box".

Challenge: Add a when clicked event. If any bug is clicked, hide it and increase the score by 1. You will need to use the change variable command to hide it.

123 myTime = set to 10

! alert 'Click the bugs to splat them. You have ten seconds!'

timer every 1 seconds

if myTime greater 0 Then

123 myTime subtract 1

Else

! alert 'Time up! Your score is:' + myScore

restart

when clicked Any bug

Clicked bug hide

123 myScore add 1

INFO: Set the value of the variable myTime  
INFO: Create an alert box

See Code

# Lesson 5: L.Q. What are the requirements of a program to convert from ounces to grams and vice versa?

The image shows a Scratch challenge interface. At the top, there are navigation buttons: a menu icon, a refresh icon, a red 'Stop' button, a green 'Next challenge' button, a filmstrip icon, a blue question mark icon, and a red back arrow icon. The challenge text reads: "Challenge: Now make the convertGramsToOunces button work. Remember that '/' means divide." To the right of the challenge text is a "See Code" button. The main workspace contains two input fields: "Ounces" with the value 25 and "Grams" with the value 1. Below these are two buttons: "Ounces to Grams" and "Grams to Ounces". A "Variable Watch" panel in the bottom left shows "ounces = 25" and "grams = 1". The script area on the right contains two event-driven scripts. The first script, for the "Ounces to Grams" button, starts with "when clicked" and then "convertOuncesToGrams", followed by a block "1.0 grams" set to "ounces" multiplied by 25. The second script, for the "Grams to Ounces" button, starts with "when clicked" and then "convertGramsToOunces", followed by a block "1.0 ounces" set to "grams" divided by 25. At the bottom, a console shows the following messages: "INFO: Create a when clicked block for convertGramsToOunces", "INFO: Set the value of the variable ounces", and "SUCCESS: Challenge completed". A "Fast" slider is also visible in the bottom right corner.

Challenge: Now make the convertGramsToOunces button work. Remember that '/' means divide.

Ounces

Grams

Ounces to Grams    Grams to Ounces

Variable Watch

ounces = 25  
grams = 1

when clicked    convertOuncesToGrams

1.0 grams    set to    ounces    x    25

when clicked    convertGramsToOunces

1.0 ounces    set to    grams    /    25

INFO: Create a when clicked block for convertGramsToOunces  
INFO: Set the value of the variable ounces  
SUCCESS: Challenge completed

Fast