



Lesson insert

Overview

An activity using myworldofwork.co.uk to link the study of Computing Science and the topic of software development to possible careers.

Objectives

As part of a wider lesson, this lesson insert intends to:

- Encourage pupils to research careers related to the study of software development
- Make a link between lessons on programming and how search tools are created by website developers

My World of Work activity (20mins)

- Arrange pupils into groups of three
- Go to myworldofwork.co.uk
- Go to [my career options](#)
- Allocate each pupil in the group one job profile each to research: Software developer, Computer games developer or Computer games tester
- Ask the groups to complete the job research sheet

Connect the learning (in the wider lesson)

- Discuss how software developers and testers might use programming to create search tools on myworldofwork.co.uk and other websites
- Discuss how traditional trades like Electricians, Gas Engineers and Heating Engineers now need to include programming as part of their training because of new electronic systems in modern equipment
- Optional: Ask pupils to enter information from the job research sheet into a scratch program (instructions included)

Review and reflect (5mins)

- Ask pupils to reflect on the jobs covered and if they may be interested in following one of these careers.
- Homework: Ask pupils to research examples of how programming might be used in the following job categories:
 - Banking
 - Healthcare
 - Manufacturing and production

Technologies

Computing Science

Software development

Resources

- Computers or tablets with internet access
- Job research sheet
- Scratch programming environment
- Scratch program instructions

My World of Work links

Job profiles

[Software developer](#)

[Computer games developer](#)

[Computer games tester](#)

Curriculum links

Suitable for S1 to S2 pupils studying:

Experiences and outcomes

TCH 2-03b: Throughout all my learning, I can use search facilities of electronic sources to access and retrieve information, recognising the importance this has in my place of learning, at home and in the workplace.

TCH 4-09a: By learning the basic principles of a programming language or control technology, I can design a solution to a scenario, implement it and evaluate its success.

Career Education Standard (3-18)

Supports entitlements set out in the [Career Education Standard](#) for young people to:

- Experience a curriculum through which they learn about the world of work and job possibilities and which makes clear the **strengths** and **skills** needed to take advantage of these opportunities
- Know where to find information and access support making effective use of online sources such as [My World of Work](#)
- Develop [Career Management Skills](#) as an integral part of their curriculum



**My
World of
Work**

Job research

**Careers linked to:
Computing Science**

Log into the computer and go to myworldofwork.co.uk

Go to [my career options](#) to find out about the job on your card and answer the following:

What is the job title?	
What are the main duties of this job?	
What are the personal qualities required?	
What qualifications do you need?	
What is the average UK salary?	
How many people are currently doing this job in Scotland?	
How many people are currently doing this job full-time in the UK?	
What have you learned in your school subject that might be useful in this job?	



My
World of
Work

Computing Science Software Development Scratch Programming

You are going to write a program using the Scratch Programming Environment.

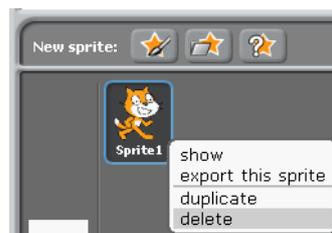
The program should first display a screen containing the My World of Work logo and a Start button. When the start button is selected the program should display a search screen, this should contain a section where the user can input the name of the career they wish to find out about. When the user enters the name of the career the program should display information about that career. The program will hold information about three careers – Software Developer, Computer Games Developer and Computer Games Tester.

Note: Before you begin this task your teacher will show you where the graphics for the task are stored on the network. Your teacher can right click on the images at the end of this document and use the 'save image as' option to save the images to the network.

1. Open the Scratch Programming Environment. <https://scratch.mit.edu/>

2. Firstly you need to delete **Sprite1**:

- Right click Sprite1
- Select delete.



3. Select **Stage** then **Backgrounds**.



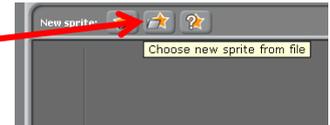
4. Select **Import** and navigate to the 'World of Work Banner.png' graphic.



5. Click on  to delete **background1**.

6. **Save** your program as **World of Work**.

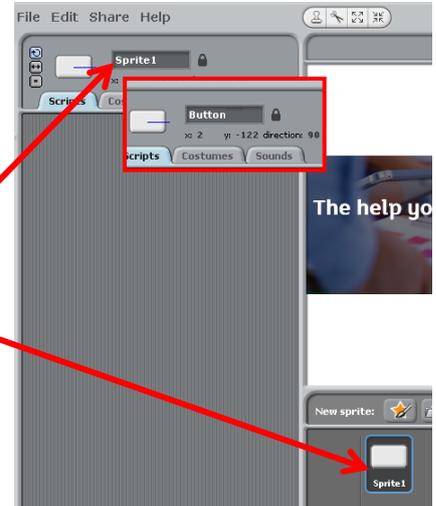
7. You are now going to add a new sprite. Click on the **Choose new sprite from file** button and navigate to the 'button' graphic.



8. Your **sprite** will now be shown on the stage area. Click on the button and drag it to a suitable position.

9. At the moment it is named Sprite1. This needs to be changed to Button (*This makes your sprite list easier to understand as it describes the sprite.*):

- a. Check that Sprite1 is selected.
- b. Go to the current sprite info section and change the name of the sprite to **Button**.

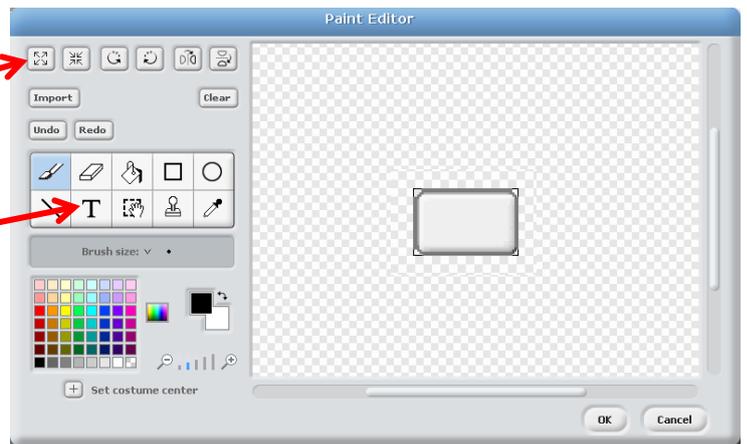


10. Click on the **Costumes** tab for your Button sprite.



11. At the moment the button is quite small and has no text on it. You now need to **Edit** the button.

- a. Click on the **Edit** button.
- b. The **Paint Editor** window should now be open.
- c. Click the **grow** button twice to make the button larger.
- d. Click the **text tool** and type the text **Start**.
- e. Change the size of your text to 12.



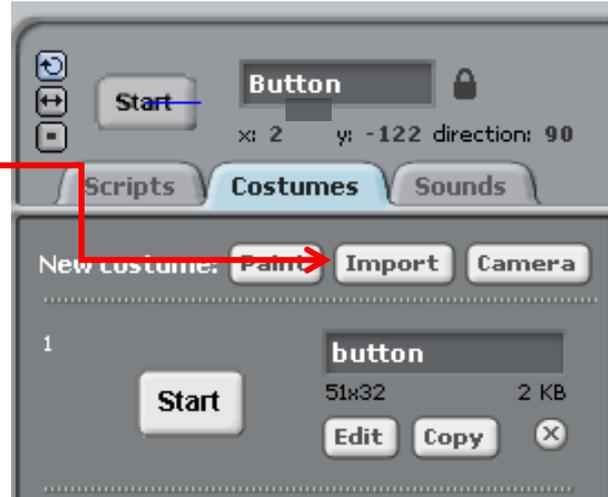
f. **Move the text** onto your button by clicking on the **black square** and dragging the text to the centre of the button.



g. Click the **OK** button.

12. **Save** your work.

13. You are now going to add another costume for your Button – **buttonPressed**. *Make sure that the button sprite is still selected and you are in the Costumes section!* Click the **Import** button then navigate to the **buttonPressed** graphic.



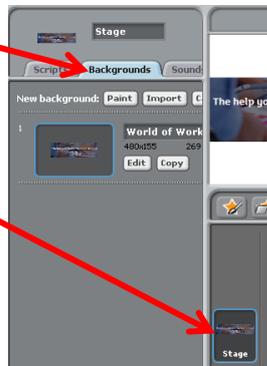
14. You should now have two costumes for the **Button** sprite.



15. **Repeat step 10 a to g** on the previous page to edit **buttonPressed**.

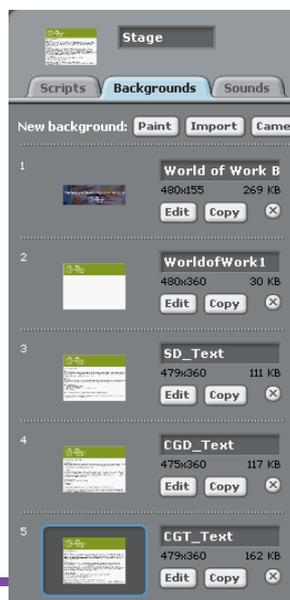
When the Start Button is pressed the program should display a search page and then display information about the input career.

16. Select **Stage** then **Backgrounds**.



17. You already have one background – World of Work Banner. You now need to import the following four backgrounds:

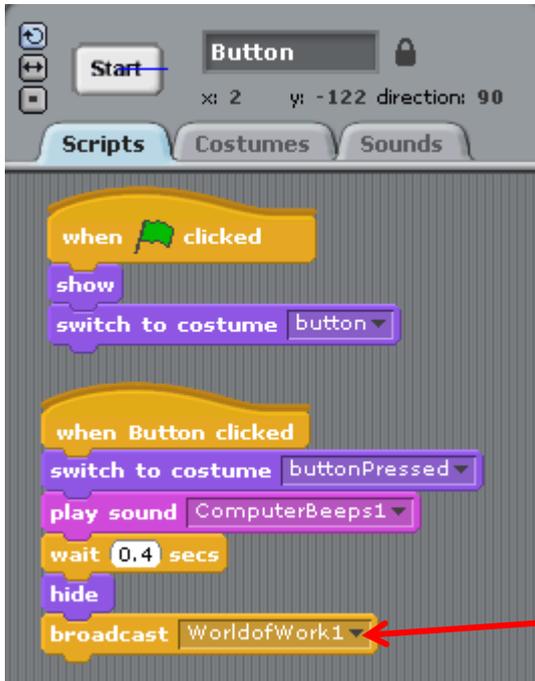
- WorldofWork1
- SD_Text
- CGD_Text
- CGT_Text



18. **Save** your work.

You are now going to add the code for your **Start Button**.

19. Click on the **Button sprite** then the **Scripts Tab** and add the code shown below:



Algorithm
When the program starts
Show the Start button on screen

When the button is clicked
Change to the buttonPressed costume
Play a sound
Wait for 0.4 seconds
Hide the Start button
Display the WorldofWork1 background.

NOTE: In the broadcast command you will need to click on **new...** and type the **Message Name - WorldofWork1**.



20. **Save** your work.

21. Select Stage then Click on:

- a. **Variables**
- b. then **Make a variable**
- c. type **CareerSearch** as your Variable name.



d. Click OK.

The variable **CareerSearch 0** you just created will now appear on the Stage. You don't need to move it because you're going to make it invisible when your program runs!

22. Select **Stage** then click on the **Scripts Tab**. Enter the program code shown below then **Save** work.



Algorithm
When the program starts
Show the World of Work Banner background
Hide the variable CareerSearch

Next you need to add the code to perform the career search and display the results.

23. Select **Stage** then click on the **Scripts Tab**. Enter the program code shown below under the current code. **Note:** Type **Enter career:** in the ask command and the **name of each career** in the **IF statements**.

```

when I receive WorldofWork1
switch to background WorldofWork1
ask Enter career: and wait
set CareerSearch to answer
if CareerSearch = Software Developer
switch to background SD_Text
if CareerSearch = Computer Games Developer
switch to background CGD_Text
if CareerSearch = Computer Games Tester
switch to background CGT_Text
  
```

Algorithm
 When program receives WorldOfWork1 from Start Button
 Display the WordofWork1 background
 Ask the user to input a career
 Set the variable CareerSearch to career the user input
 If CareerSearch is Software Developer
 Display the SD_Text background
 If CareerSearch is Computer Games Developer
 Display the CGD_Text background
 If CareerSearch is Computer Games Tester
 Display the CGT_Text background

24. **Save** your work.

You have now completed your World of Work program. Now you need to check that it works as it should – this is called **testing**.

25. Click on the green flag  to run your program. The **World of Work Banner** background and the **Start button** should be displayed.

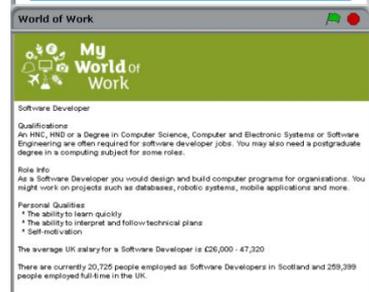
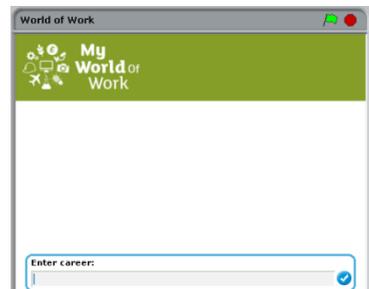
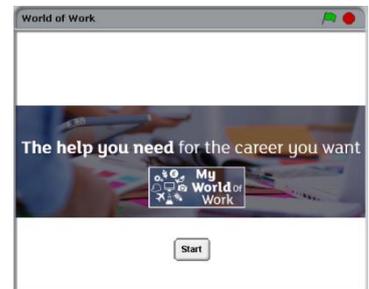
26. *If this does not display – CHECK your code with the code in this booklet!*

27. Click the **Start Button**. If you watch the button you should see it change to the **buttonPressed costume** before displaying WorldofWork1 containing the Enter career **input box**.

28. *If this does not display – CHECK your code with the code in this booklet!*

29. Enter **Software Developer** (Note: make sure you type it **EXACTLY** as shown!) and the press the **Enter key**  on the **keyboard**. The SD_text should now be displayed.

30. *If this does not display – CHECK your code with the code in this booklet!*



31. Run your program another twice to check that it works for Computer Games Developer and Computer Games Tester.

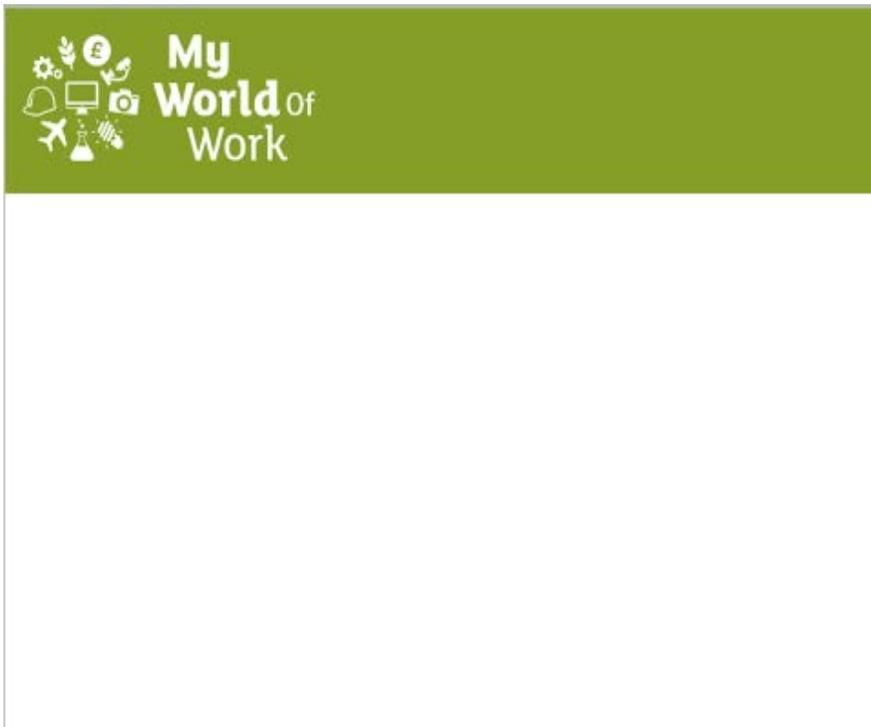


Click on the image/s below and then right click once the image is highlighted and use the 'save image as' option to save the image file to a local computer/network.

My World of Work Banner



WorldofWork1



Click on the image/s below and then right click once the image is highlighted and use the 'save image as' option to save the image file to a local computer/network.

Computer Games Developer text



Computer Games Developer

Qualifications

Most computer games developers have a qualification at HNC, HND or a Degree. The majority of entrants to the computer games industry are graduates with degrees in a maths, physics, computer science or computer games subject.

Role Info

As a Computer Games Developer you would create ideas, characters and stories or work on animations, code and tests for games that might be played by millions of people. You'd help to produce games for PCs, games consoles, the internet and mobile phones. You could develop new games or update existing titles.

Personal Qualities

- * The ability to pay attention to detail
- * Creativity
- * Logical

The average UK salary for a Computer Games Developer is £26,000 - 47,320

There are currently 20,725 people employed as Computer Games Developers in Scotland and 259,399 people employed full-time in the UK.

Computer Games Tester text



Computer Games Tester

Qualifications

There are no formal qualifications required for entry to this job. But entry is increasingly competitive and many applicants have related qualifications. Qualifications that demonstrate knowledge of games, software, programming and databases such as a Computer Games or Digital Media HNC, HND or Degrees may be of value.

Role Info

As a Computer Games Tester you would play computer games many times to spot any bugs and mistakes that need to be fixed before the game goes on sale to the public. Testing is a vital part of producing a computer game. You'd re-play the game over and over again, being persistent and disciplined in choosing all the options to test it from every possible perspective. You'd find and record the programming faults (bugs). You would also play the role of the game's first public user. You'd report on its playability and recommend improvements.

Personal Qualities

- * A passion for playing computer games and an ability to play at high levels
- * Patience and persistence, for repetitive work
- * A methodical and disciplined approach

The average UK salary for a Computer Games Tester is £17,680 - 36,920

There are currently 9,596 people employed as Computer Games Testers in Scotland and 94,885 people employed full-time in the UK.

Click on the image/s below and then right click once the image is highlighted and use the 'save image as' option to save the image file to a local computer/network.

Software developer text



Software Developer

Qualifications
An HNC, HND or a Degree in Computer Science, Computer and Electronic Systems or Software Engineering are often required for software developer jobs. You may also need a postgraduate degree in a computing subject for some roles.

Role Info
As a Software Developer you would design and build computer programs for organisations. You might work on projects such as databases, robotic systems, mobile applications and more.

Personal Qualities

- * The ability to learn quickly
- * The ability to interpret and follow technical plans
- * Self-motivation

The average UK salary for a Software Developer is £26,000 - 47,320

There are currently 20,725 people employed as Software Developers in Scotland and 259,399 people employed full-time in the UK.