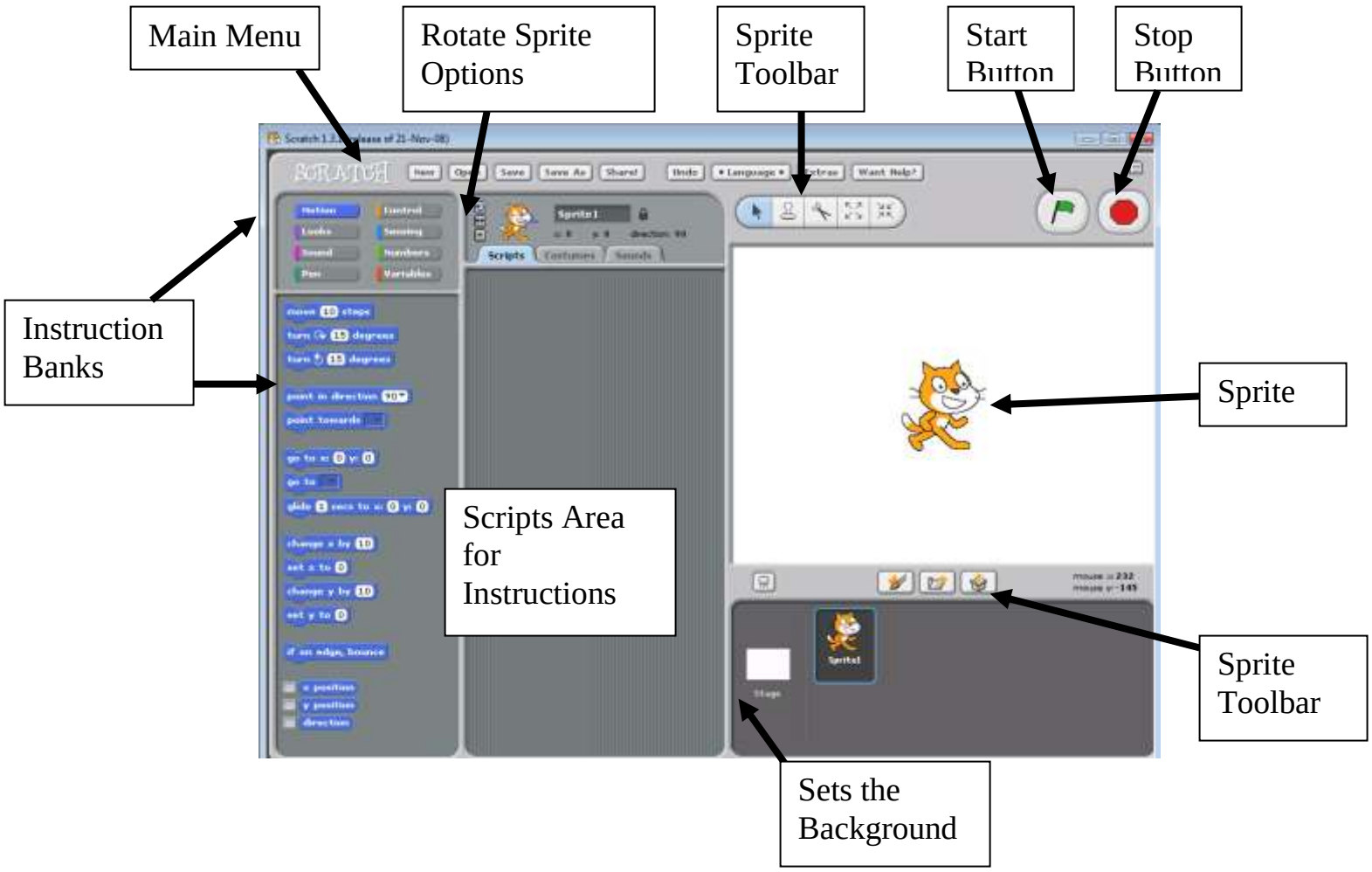
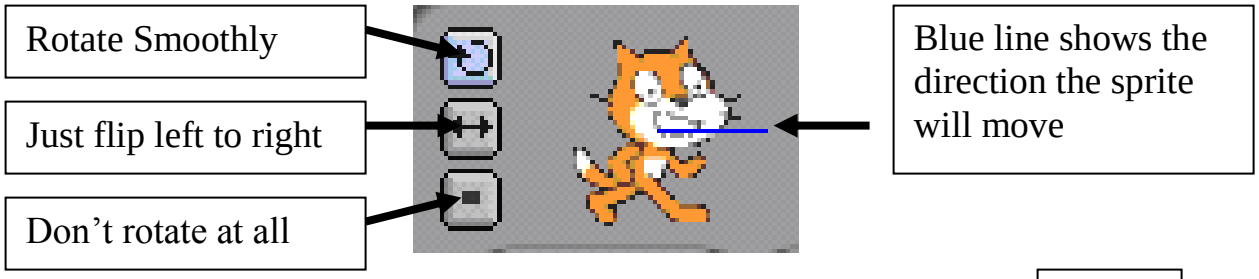
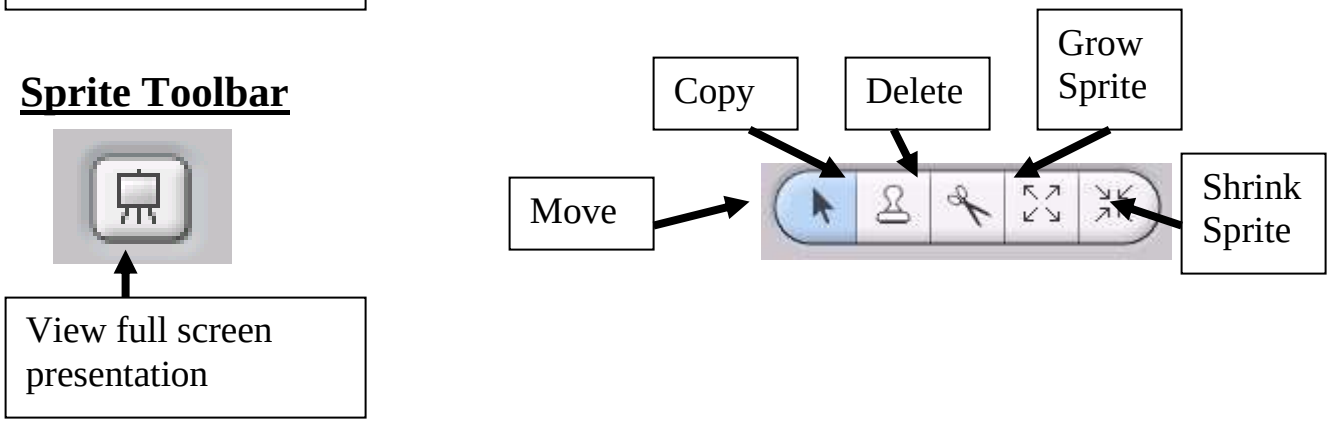
Main Screen



Rotate Sprite Options



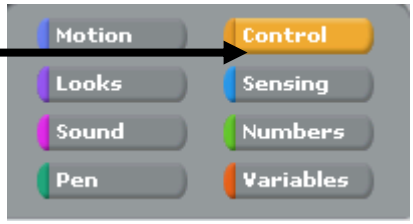
Sprite Toolbar



My First Program

- Start a new Scratch project.
- Set the **Rotate Sprite Option** to just flip right-left.

- Click on the **Yellow Control Button**.



- Drag the instruction 

to the Scripts area.
- Drag the shape 

onto the scripts area and change the **value to 11**.

  Link it <u>under</u> the when clicked shape.

- Click on the **Blue Motion Button**

- Drag the shape 

onto the scripts area and change the **value to 20**.

  Link it <u>inside</u> the Repeat shape.

- Click on the **Yellow Control Button**
- Drag the shape 

onto the scripts area and change the **value to 0.2.**

  Link it <u>inside</u> the Repeat shape

- Click on the **Blue Motion Button**
- Drag the shape 

onto the scripts area and change the **value to 180.**

  Link it <u>inside</u> the Repeat shape.

- Click on the **Yellow Control Button**

- Drag the shape 

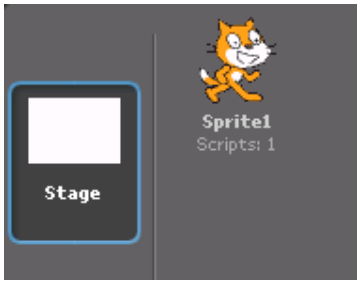
onto the scripts area and change the **value to 0.2.**

  Link it <u>inside</u> the Repeat shape.

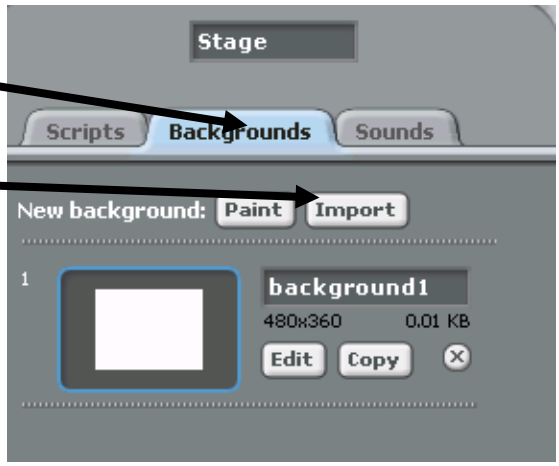
- Now **RUN** the program by clicking on the **START** button. 

<u>Now let's make the program more interesting</u>

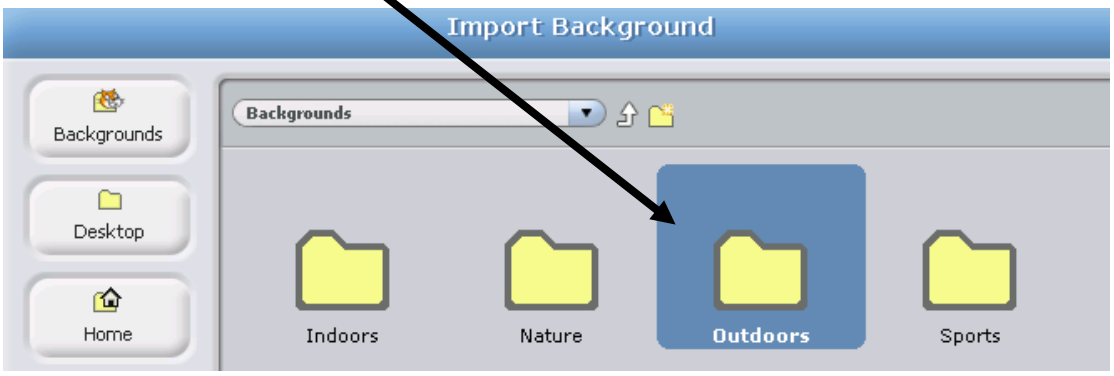
- Click on the **Stage** button



- Click on the **Backgrounds** tab
- Click on **Import**



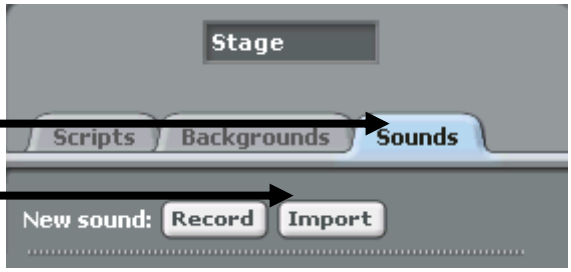
- Double click on the **Outdoors** folder



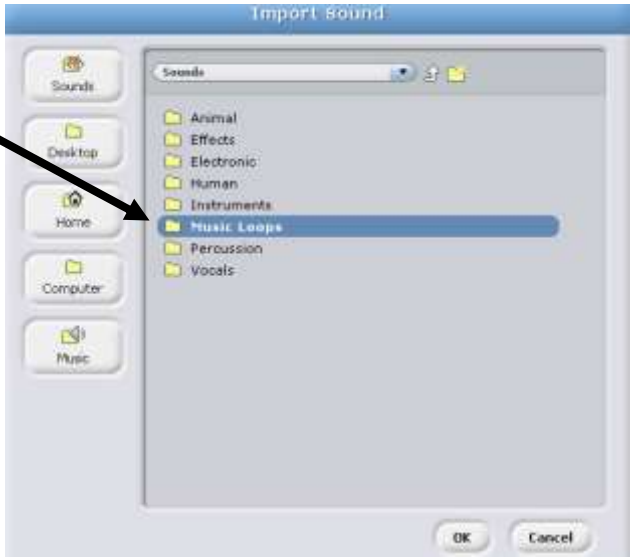
- Click on the **all-sports mural** and then click on **ok**

Let's add some music!

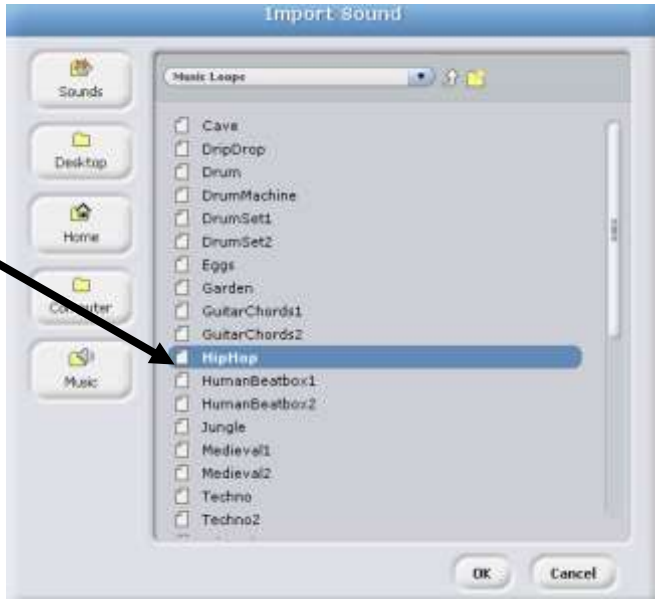
- Click on the **Sounds** tab
- Click on **Import**



- Double Click on **Music Loops**



- Click on **HipHop** and then click **OK**



- Click on **Sprite 1**

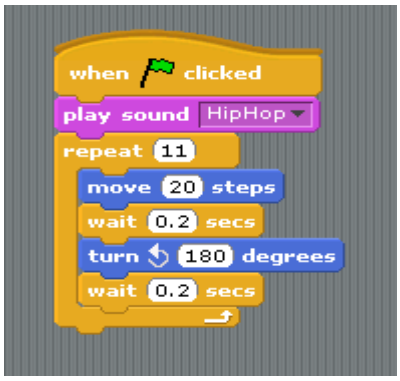
- Then click on the **Scripts Tab**

- Click on the **Pink Sound Button**
- Drag the shape 

onto the scripts area and change the value to **HipHop.**

  Link it <u>above</u> the Repeat shape.

- Your program should now look like this:

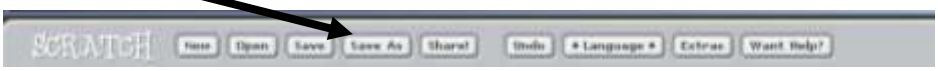


- **Run the program again.**

Now pick your own sprite and background and see if you can get it to move.

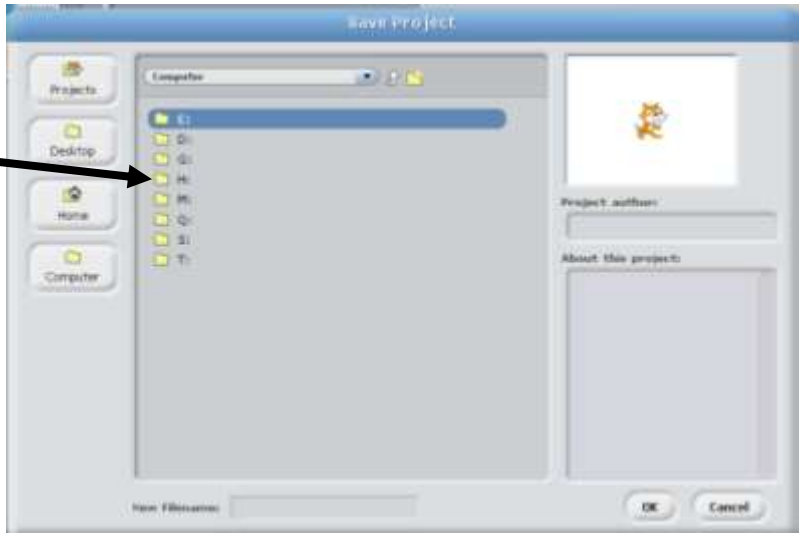
Saving Your Programs

- Click on **Save As** from the Main Menu at the top of the screen



- Then click on **Computer**

- Double Click on the **H: drive**



- You are now in your **My Documents**
- Double click your Computing folder and create a **New Folder** called

  My Scratch Programs
- Double click this folder
- Type a suitable **Filename** at the bottom and click **OK** to save

Program 2 – Drawing Shapes Programs

- Open up a new Scratch project
- Click on the **Costumes tab**

- Click on **import**
- Double click on the **Animals** folder
- Select **starfish1-a**

- Click on **Shrink Sprite** from the sprite tool bar

- Place the **shrink cursor** over the star fish and click **10 times.**
- Set the **Rotate Sprite Option** to just flip right-left.

The next program will move the starfish in a **SQUARE** pattern, where each side of the square is a different colour.

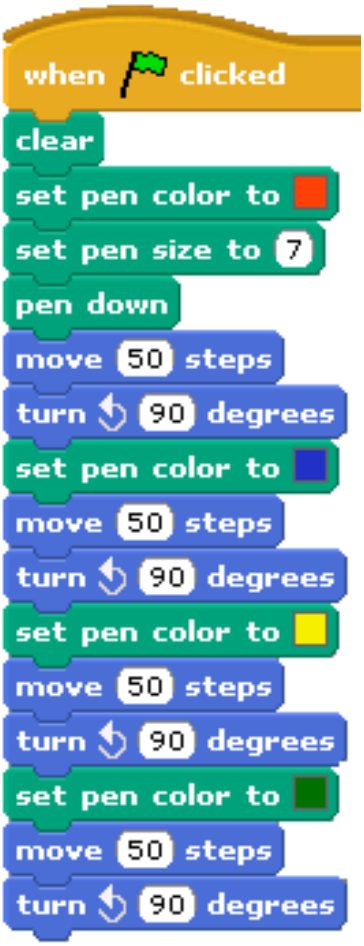
a) Copy this program carefully and see if it will draw a square.

b) Now change the program so that it will draw a **rectangle** with sides of **100** and **200.**

c) Delete the program instructions and write a program to draw a **triangle** with sides of **200.**
{Remember – triangles have **3** sides}

To calculate the angle in the sprite has to turn to make each shape:

Angle = 360/number of sides.



d) Copy down the following table and complete the blank boxes. The make up programs for the Octagon and the Decagon.

Shape	Number of Sides	Angle
Square	4	90
Triangle	3	
Octagon		
Decagon		

Program 2 – Drawing Shapes Programs

The instructions for the last set of programs were quite long because the same instructions were used over and over again. We have seen in the Dancing Cat program that instructions can be repeated inside a **LOOP.**

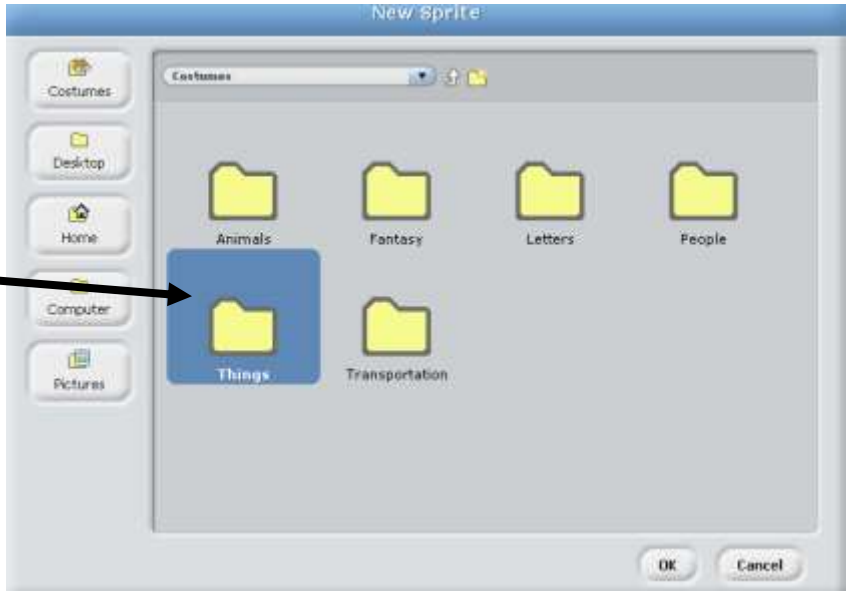
Create programs using a **Repeat Loop** which could be used to draw each of the shapes in the table above.

{Hint – The following instructions might be useful}

Program 3 – Bouncing Ball Game

- Start a **NEW** Scratch program
- Click on Choose a New Sprite from file

- Double click on **Things**



- Select **Beachball1** and click OK.

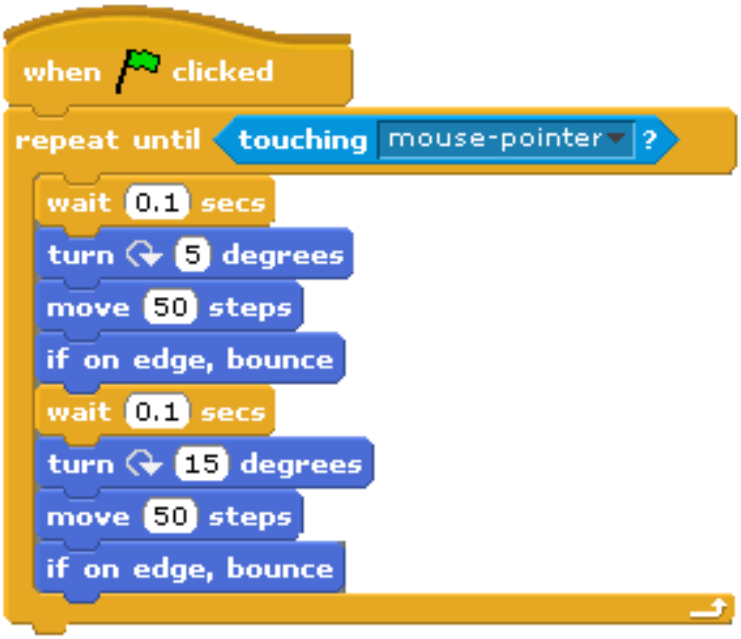
You have to delete the Cat sprite by clicking on the scissors and then on the Cat.

The instructions for the program are shown below.

These instructions are carried out on the bouncy ball sprite you have chosen.

The yellow **Repeat until loop** will carry out all the instructions inside it until the mouse pointer touches the bouncy ball Sprite.

The instructions **if on edge bounce** will stop the ball from staying on the edge of the screen.



How long does it take you to click on the ball.

Run the program by clicking on the start button.

Save your game as **Bouncing Ball** in your **My Scratch Programs Folder.**

Program 4 – Editing a Sprite

Sprites can be changed to create animations. This is done in a 'Paint' type screen.

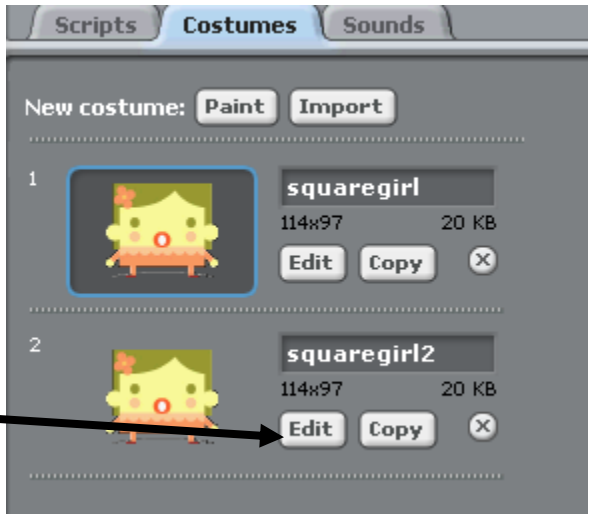
- Choose the sprite called 'Squaregirl' or 'Squareguy' from the People folder.

- Delete the Cat Sprite.

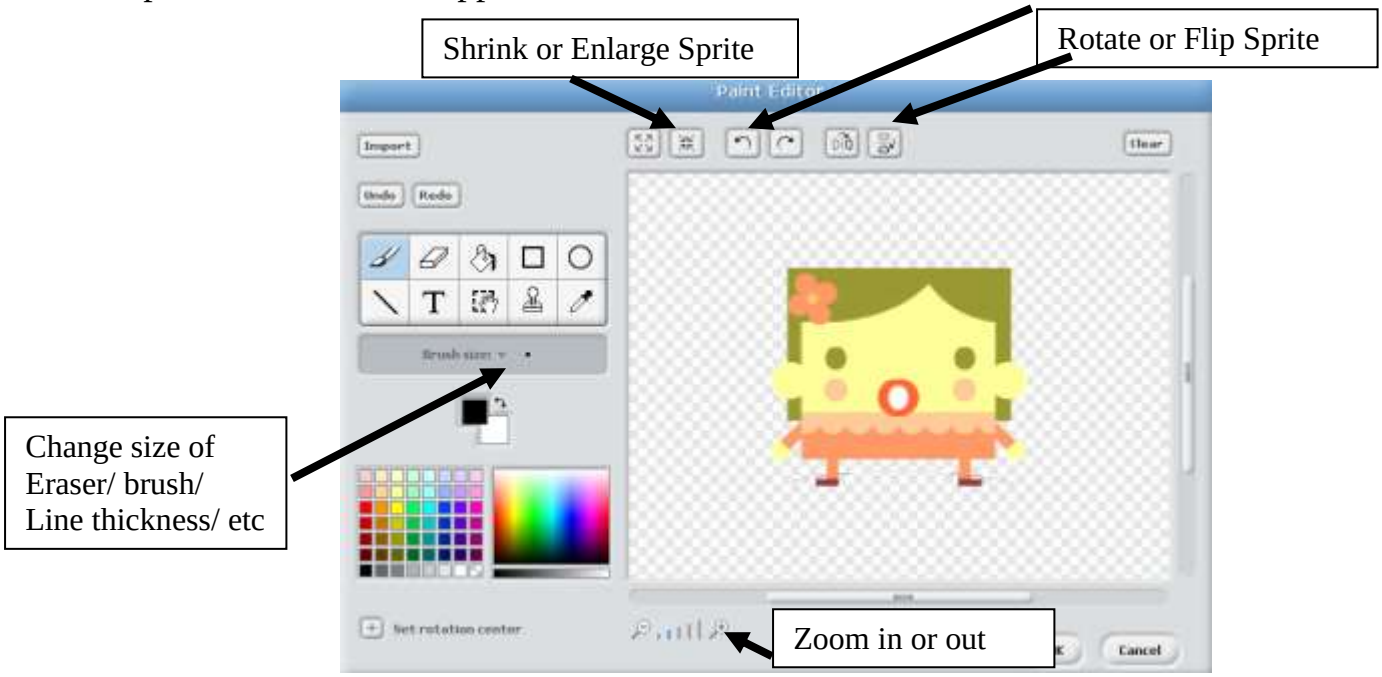
- Click on **Costumes**

- Choose **Copy**

- And then **Edit** from squaregirl2



The paint screen should appear. Some of the tools are described below.



- Change the mouth slightly as if the sprite was trying to say something and click on OK.

- Repeat the Copy and Edit instructions a few more times until the sprite seems to 'talk' to you when you run the program.

- Use the **purple Look** instructions to create a program to make the sprite talk, pay particular attention to the **"switch costume instructions"**

- Save your program as **Chat** in your **My Scratch Programs Folder.**

- Try drawing or importing a different sprite and animate it in a suitable way.

- E.g. A person kicking a ball, a bird flapping its wings etc.

- **REMEMBER to COPY and then EDIT the Sprite.**

Save your program in your **My Scratch Programs Folder.**

Program 5 – Moving to a new Stage

Some games that you play at home have different levels, each with a different background or level of difficulty. In the exercise you will play a simple Maze game which has 2 levels and then you can add another level by yourself.

Instructions

- Start Scratch and open up the program **Maze Game** from S1 on Grove/Computing/Scratch/Maze Game.

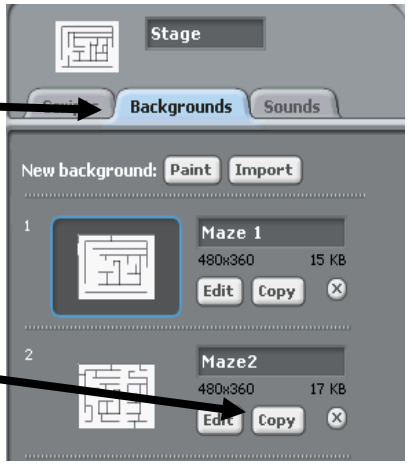
- Try to complete both levels of the maze.

Creating Another Stage

- Click on **Stage**

- Click on **Backgrounds**

- Use **Copy** at **Maze 2** then **Edit Maze 3** to draw another maze.



THE SCRIPT FOR THE PROGRAM NEEDS TO BE CHANGED.

Script

- Look at the code for Sprite1 (the ball)

What the Instructions Mean

Start at position x: -215 y: 96

If the ball touches a black line
Display the message
Stop the program

If the ball touches a red line
Display the message
Send the program the message Yippee
Go to position x: 2 and y: 14

This instruction operates the down arrow key. When the down arrow key is pressed the sprite points down and moves down the Y Axis

- You should add in 3 more sets of instructions like this one which operate the:
  - Up Arrow Key
  - Left Arrow Key
  - Down Arrow Key

REMEMBER

X Axis is horizontal (across the way)
Y Axis is vertical (up and down the way)

- Each If statement controls a level.
  - The colour to finish each level should be different
  - so should the message in the speech bubble
  - and the word broadcast.

- To see the code for the broadcast message, click on **Stage** and then **Scripts.**

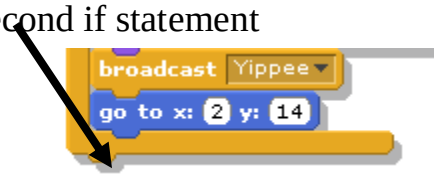
When the program starts Maze 1 will be displayed.

When the program receives the message Yippee, the background Maze 2 will be shown.

- To create another level, Click on **Stage** then **Backgrounds.**
- Copy Maze 2 and edit Maze 3 to create a different Maze.
- **REMEMBER** to make the finishing line a different colour.

You can now add the code to make it play the next level.

- Click on **Sprite1** (the ball) to see the Scripts.
- Add another **If** statement after the end of the second if statement so that if the ball touches the BLUE line:
  - A message will be displayed
  - A message is broadcast
  - The ball is moved to the Start position in the next level.



- Make sure that your new section of code is **inside** the **forever loop!**
- Now click on **Stage** and then **Scripts.** Add code to show maze 3
- HINT – Look at the code that is already there.
- Save your program in your **My Scratch Programs Folder.**
- You can add as many levels to this program as you like.

Scratch Challenge

Write a program to draw this picture on the screen.