Scratch Lesson 1:

Welcome to Scratch

Introduction:

Welcome to the first scratch lesson of this course. By now you should have the Scratch software installed on your laptop. If you do not it can be downloaded from the Scratch website here:

http://scratch.mit.edu

Each class will have a handout like this one. If you miss a class, you can still get the handout from me at a following class, or by asking either Mr. Beacham or Jeremy.   If for some reason you forget your laptop, you can still attend. You can just listen or maybe someone will let you join in or look over their shoulder. You can still take the handout and do the work on your own laptop later, if you would like.

Starting Scratch:

Scratch can be started by double-clicking 🐱 on your Desktop. If you do not have the icon, then it can be found by clicking **Start** and then clicking "**All Programs**", "**Scratch**" and lastly clicking the Scratch icon. If you still can't find it, you may need to have the software installed or re-installed.

Using Scratch:

When Scratch starts it begins by loading a default project that contains only a blank background and a single sprite, Scratch the kitten.   This is the starting point for new projects. The kitten does not have to stay there and it can be removed if you want.

Opening and closing projects is done the same way as it is in Word. To save a project you can use either the save icon, 💾, in the top left-hand corner or use the "**File**" menu's "**Save**" option. To open an old project, use the "**Open**" option. To create a blank project, use the "**New**" option.

The building blocks for constructing your programme's code can be found on the left-hand side of the windows. These blocks are grouped according to the things they do. The groups we will use in this lesson are "**Control**", "**Looks**", "**Operators**" and "**Sensing**".

Scratch has some very useful help that can be used to understand what different building blocks do. To get the help right-click on the block you would like to know more about and click the "help" option from the pop-up menu. The image below shows how to get help for the "if" block.
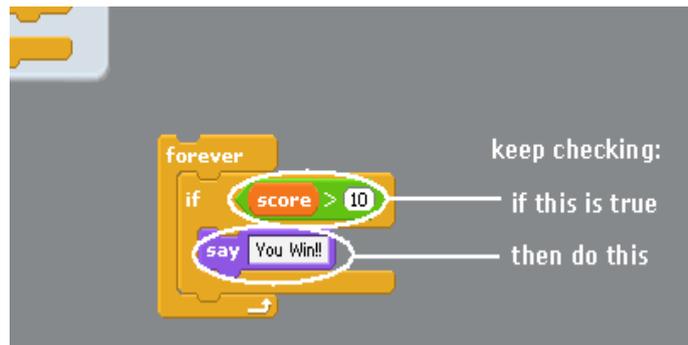
The characters or actors in your programmes are called sprites.   All the sprites in the programme are shown in the bottom right-hand side. You can create new sprites using the icons. The first will allow you to paint your own sprite. The second allows you to open a save sprite from your computer and the last one will pick a random sprite from the library and put it in your programme.

Hello World (your first Scratch programme):

Most programming language courses start with a very simple programme called "Hello, World". It is a simple example that shows what a programme looks like and how to output a message. This is how we will start ours. After starting a new project drag the code blocks from the left into the "Script" panel in the centre to make the following:

You can then click to start your script. You can even change "World" to be your own name and Scratch, the kitten, will say "Hello," to you.

Hello to Anybody:

Now that you have made your first programme, it is time to build on it. At the moment your programme can either say 'Hello World!" or "Hello" to you. Wouldn't it be nice if it could ask you who what your name was and then say "Hello" to you?

This can be done by first adding in an block. This block will cause Scratch to ask you a question and then wait for an answer. You could add to your first programme by dragging it on the "Script" panel and dropping it between the two blocks already there. Your programme would then look like this:

Now your programme asks you a question, but it doesn't do anything with the answer. To use the answer we use the `answer` variable and the `join hello world` operator to build a string. The `join hello world` operator will take the first word and the second word and put them together to create a new word. We can use this in your programme to make Scratch answer you, like this:

Can you get Scratch to answer "Hello <answer>. How are you?" So, if you answered "Mr. Flibble" the answer would read:
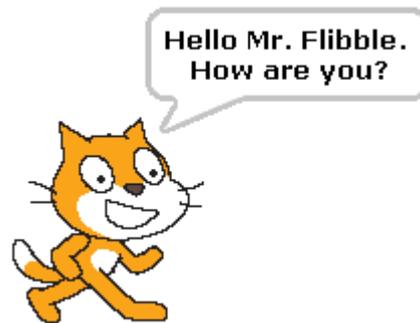
Glossary:

As we go through the course you will learn new computer terms and the glossary is where they will be explained.

- **Concatenate:** Means to join to strings. For example, concatenating the string "Hello " to the string "World" would give me "Hello World".
- **String**: A string is a group of characters. These characters can be anything you can type in on your keyboard. Sometimes they make up words, sometimes they don't. "I went to the shop" is a string and so is "fj234090345;;><>>".
- **Variable:** A variable is a place to store information. In the programmes in this lesson the variable is `answer` and it contains the answer to Scratch's question.