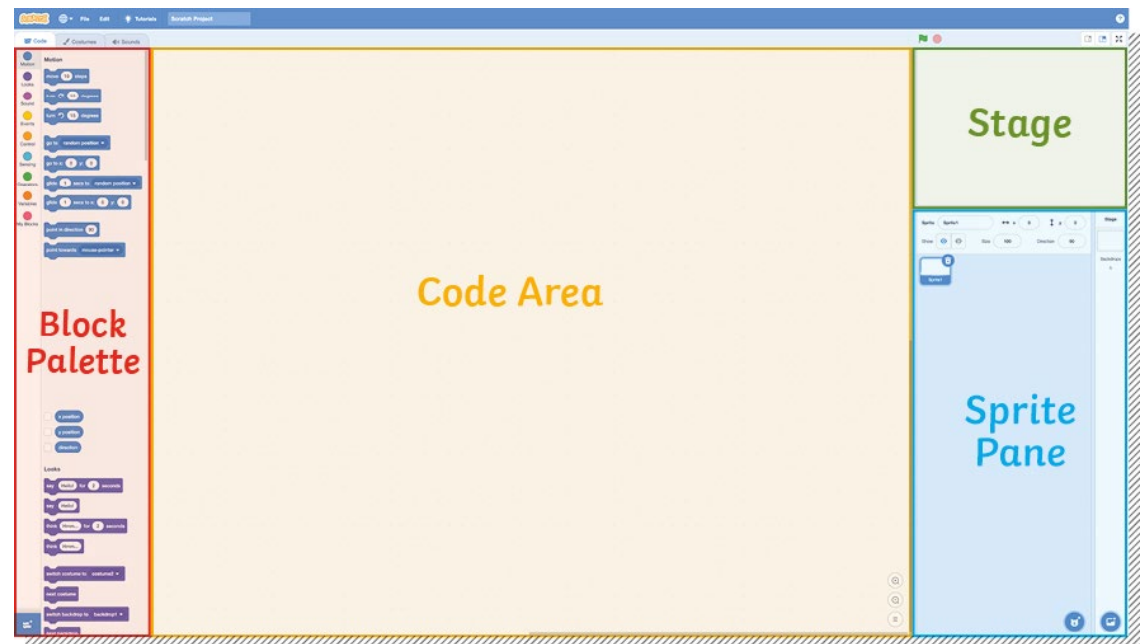


Key Vocabulary	
<b>algorithm</b>	A sequence of ordered instructions. In Scratch, <b>algorithms</b> are referred to as scripts.
<b>block</b>	A puzzle-shaped piece of <b>code</b> . They can connect to other <b>blocks</b> to create <b>algorithms</b> .
<b>code</b>	A set of instructions written in a programming language that a computer can understand.
<b>condition</b>	A <b>block</b> of <b>code</b> that will only run if a certain event is true or false.
<b>loop</b>	A way to repeat a set of instructions over and over again.
<b>sprite</b>	An image that can be created and programmed in Scratch.
<b>variable</b>	A value that can be recorded in the memory of Scratch. A <b>variable</b> can be edited.

### What Is Scratch?

Scratch is a free, online program where you can use a **coding** language to create digital stories, games and animations using characters known as **sprites**. Scratch uses a visual **block**-based coding language. **Blocks** are joined together to create **algorithms**.

### Scratch Interface



### Why Are Loops Useful?

**Loops** are a useful way of telling the computer to repeat instructions. They can be used in computer programs to make certain things happen repeatedly. Using **loops** saves programmers from having to write hundreds or even thousands of lines of **code**. **Loops** save time and reduce errors.

### Decomposition

Decomposition means breaking something down into smaller steps. Decomposing a problem into smaller steps or stages makes it easier to solve the big problem. Computer programmers and games designers use decomposition all the time in their work.

### Debugging

Debugging is the process of testing **code** and removing any errors or bugs from the program. The term 'computer bug' was first used in 1947 by computer scientist Grace Hopper, who discovered that a dead moth in the computer was causing an error.



### Loops in Scratch

There are three different types of **loop blocks** in Scratch. They can all be used to repeat a set of instructions but they work in slightly different ways.

The **repeat block** is a count-controlled **block**. It can be used to repeat a set of instructions a specific number of times.

The **repeat forever block** will repeat the instructions inside it without end or until the program is stopped.

The **repeat until block** is a **condition**-controlled **block**. It will repeat the instructions inside it until a certain **condition** is met.

