# Reading Code For Writing Scratch

It would be very cumbersome if we had to use the building block graphics from Scratch to write the code. Instead we can write it out as words and symbols.

## Script Tag – *identifies what language the code is written in*

<scratch>

</scratch>

**Example**

```
<scratch>
        // Your code goes in here
</scratch>
```

## Threads

```
function {

}
```

## Iteration (Looping)

```
while (expression){
      statements;
}
```

or

```
for (init, condition, increment){

}
```

*init*

The initial state of the variable to be tested.

*condition*

The condition to be tested for. The statement keeps processing as long as it remains true.

*increment*

The increment by which the variable being tested changes.

## Conditional Statements

### if statement

```
if (conditional statement) {
        Statement block;
}
```

### else statement

```
if (conditional statement) {
        Statement block;
}

else {
        Statement block;
}
```

else if

```
if (conditional statement) {
        Statement block;
}

else if (conditional statement) {
        Statement block;
}
```

## Variables

**Defining variables:**

```
Var my_variable;       //my_variable is undefined (has no value)

var  my_variable  =  'Hello Everybody';     //my_variable is now a string – NOTE the use of ' '

var my_variable = 10;     //my_variable is now a integer  NOTE no ' '
```

**Using Variables**

```
my_variable
```

## Event Handling

**Takes input from keyboard.**

onkeypress = “p”;

**Click On Sprite**

Onclick(spriteId) {

}

## Boolean Logic

**And**

&&

(x < 10 && y > 1) is true

### Or

||

(x==5 || y==5) is false

### Not

!

!(x==y) is true

## Relational Operators

| | | | |
|---|---|---|---|
| == | is equal to | x==8 | *false* |
| | | x==5 | *true* |
| === | is exactly equal to (value and type) | x==="5" | *false* |
| | | x===5 | *true* |
| != | is not equal | x!=8 | *true* |
| !== | is not equal (neither value nor type) | x!=="5" | *true* |
| | | x!==5 | *false* |
| > | is greater than | x>8 | *false* |
| < | is less than | x<8 | *true* |
| >= | is greater than or equal to | x>=8 | *false* |
| <= | is less than or equal to | x<=8 | *true* |