# **Variables**

## **Creating Variables**

Variables are the very core of any programming language. The commands of the language manipulate the data and this data happens to be stored in these variables.

**Naming Variables**

There are some rules you have to follow when naming your variables:

**All letters and numbers** can be used.

**You can’t start** with a number.

**Symbols** such as -, /, #, or @ can’t be used.

**Spaces** can’t be used.

**An underscore** ( \_ ) can be used instead of a space.

**Uppercase and lowercase** letters are different eg “Dogs” and “dogs” are treated as two different variables.

**Don’t use** words that are used as commands, such as trace, string etc.

When declaring a variable in ActionScript 3, you must use the keyword var. Right after the var keyword you type the name of the variable you want to use followed by a colon and the type of variable it will be ie String, integer, double etc.

Examples of local variables:

var numApples:int = 4;

var guestName:String = “John”;

var livesLeft:int = 3;

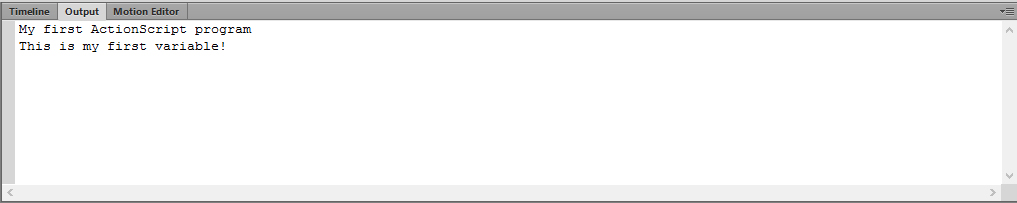
### Activity 1:

Add the following code under your trace function.

var myVar:String = “This is my first variable”;

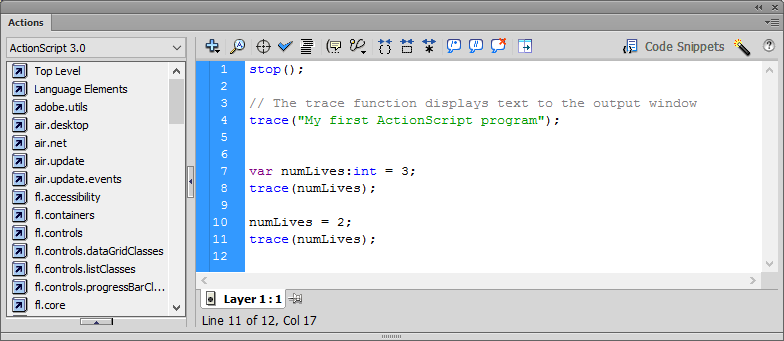
trace(myVar);

Your output should look like the following:



**Changing the Contents of a Variable**

To change the value of a variable simply assign a new value to it. Here, the variable livesLeft is created and is given the value 3. It changes to 2 when it’s assigned a new value. (Note that you only need to use the var keyword when you are creating a variable for the first time. After that you just refer to it by name).



**Using Variables**

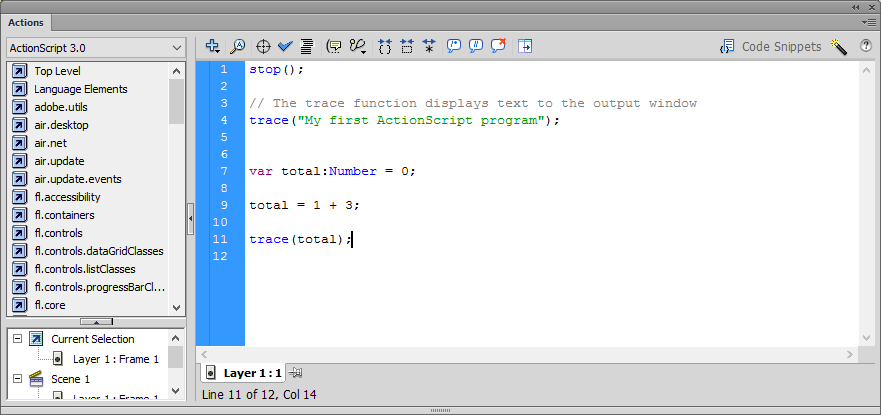
The value of one variable can be assigned to another one using the “=” sign. For example, if the variable “rabbits” contains the number of rabbits, we can use it to assign the same value to the variable “hats”, so that each rabbit has a hat.

Eg: rabbits = 5;

hats = rabbits;

**Simple Calculations**

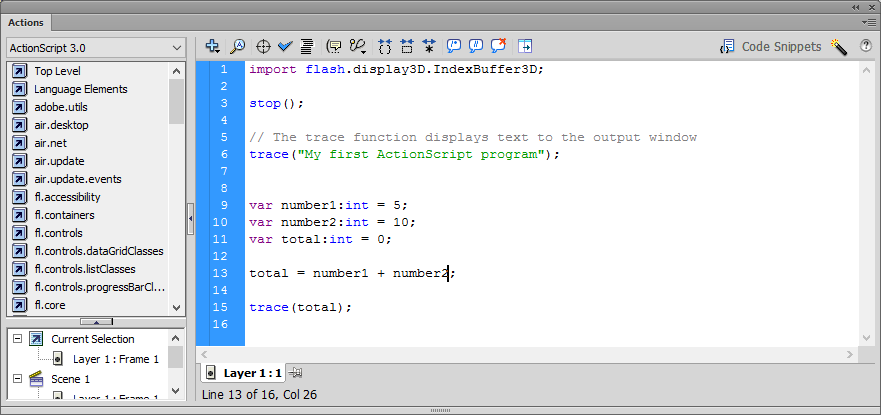
You can do simple calculations using numbers as well as variables. The following example simply adds two numbers together and stores the answer in a variable called “total” and then displays the total to the output window.



The following Mathematical symbols can be used in Flash:

|  |  |
| --- | --- |
| Addition | + |
| Subtraction | - |
| Multiplication | \* |
| Division | / |

You can also add variables together (as long as they are of the same type eg you can’t add a string and a number together). The example below adds two integers togethers.



**Random Numbers**

You can randomly generate a number which is very useful when creating games. You do this by using the Math.random() function which generates a number between 0 and 1.0. So, to get a number between 0 and 10 you would multiply the result by 10 as shown below.

