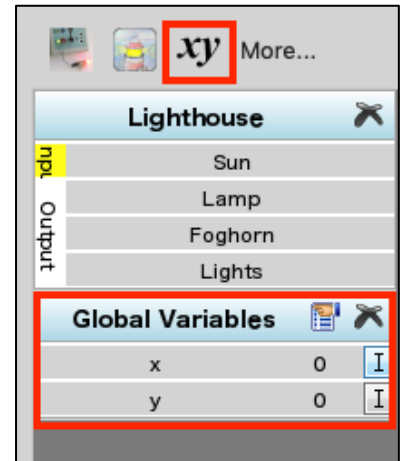# Using Variables in Flowol 4

Variables are used to store data in computer programs.

In Flowol they can be used to count how many times something has happened.

1. Open a new **Flowol 4** program. Use the **Lighthouse mimic**

2. At the **top right**, find the **xy** button and click it
   This open a section called **Global Variables**

Setup a variable

Flowol already has two variables set up, x and y. Both of these start with a value of 0

The names x and y aren't very helpful in computing, so we'll change x to give it a more helpful name

3. Click the little **I** shape next to the name **x** – use the screenshot to help

4. Change the name to **counter**
   The variable counter has a starting value of 0 – there's a 0 next to the name at the top right
   We're going to use this variable as a counter to count flashes

Write the program

5. Add a **START** block

6. Now add a **SELECTION** block – the diamond shape
   a. At the **bottom**, click **counter**
   b. Choose the **<** (the less than symbol)
   c. Click the **Number button** and choose **3**
   d. Click **OK**
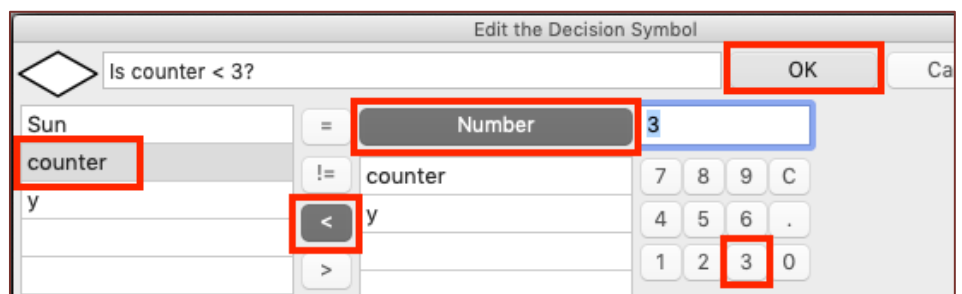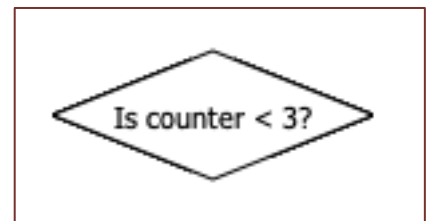
7. **Add blocks** to code a 3 second flash with a 1 second **DELAY** after it

8. **After** the 1 second DELAY, add a **LET box** – this is a new symbol that appeared on the left after you clicked the Global Variables button

9. Use the **LET** box to set: **counter = counter + 1** (hint: use the Number button)

   This adds one to counter, so Flowol knows that the light has flashed once
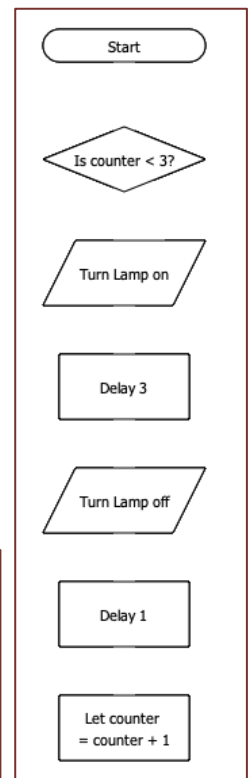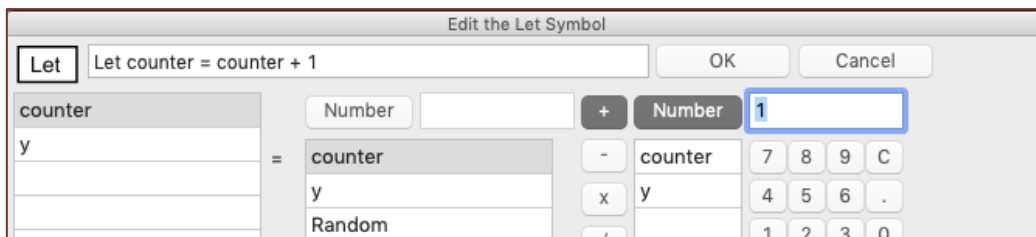
Join the boxes

10. Now, **join the boxes** together:
    a. join the **YES** selection to the start of the flash
    b. at the end, join the **LET** box back to the **SELECTION** diamond

11. **Run** the program. You can watch the value of counter change at the top right

   The light will flash three times and then the program will crash because it doesn't know what to do once counter gets to 3

Fixing the program

12. Finish the program by adding a 10 second delay from the **NO** part of the SELECTION diamond

13. Run it again. It works better this time, but only does the set of flashes once. That's a problem

   The reason is that counter is still set to the value of 3

14. After the 10 second delay box, you need to add a new **LET** box which sets counter to 0 (**counter = 0**). This will restart the count and the program should now work