Serene scene

Introduction

What will you make

You will develop a serene (meaning peaceful) scene of a wood, which you can look at, listen to, and relax with.

You will learn to use-

- How to create `variables`
- How to use sliders to change the value of `variables`
- How to use `forever` loops to check variable values

How will you open the project

- **Online:** Open the https://rpf.io/serene-scene-on in Scratch.
- **Offline:** Open the https://rpf.io/p/en/serene-scene-go in the Scratch offline editor. If you need to, you can https://scratch.mit.edu/download .

1. Grow a tree

You should see a forest scene with a tree, flowers, and a grasshopper.
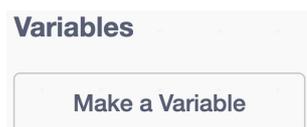
Step 1:
First, you will make the tree change its size.

Step 2:
Create a new `variable` in Scratch, click on the `Variables` blocks menu.
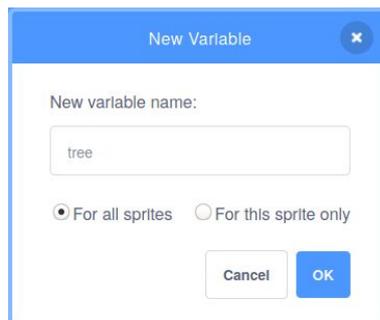
Variables

Step 3:

Then, click the **Make a Variable** button.

A **variable** is a way of storing numbers and/or text.
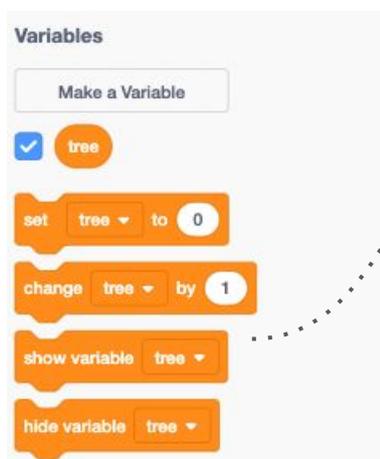
Step 4:

You can give your `variable` a name. Call this variable `tree`.

Step 5:

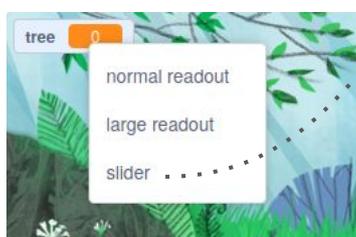You should now see five new blocks that you can use.

You will also see that the `tree` block has a check mark next to it. This makes the variable visible on the Stage.

Step 6:

On the Stage, right-click on the `tree` variable, and a menu will appear.

Step 7:

Select **slider** in the menu.
Move the slider forwards and backwards, and you will see that the value of the `tree` variable changes between `0` and `100` (percent).
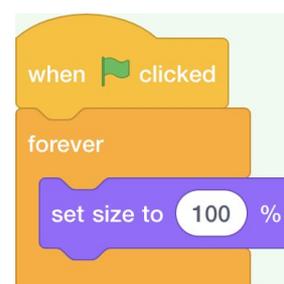

Step 8:

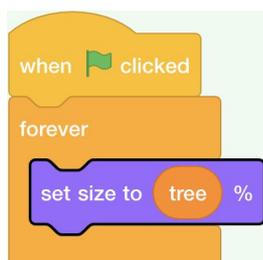Now, you will use the value of the `tree` variable to change the size of the tree.

Step 9:

First, use a `when green flag clicked` block with a `forever` loop. Add a `set size to` block into the loop.
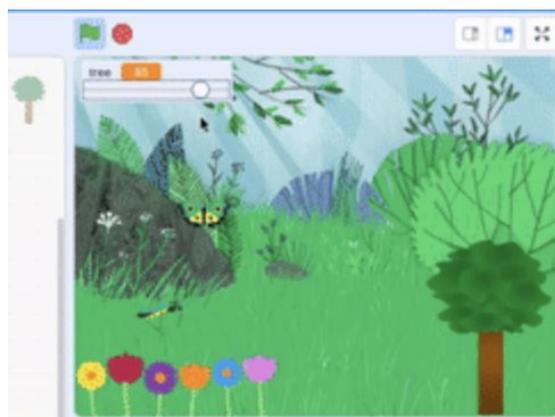
Step 10:

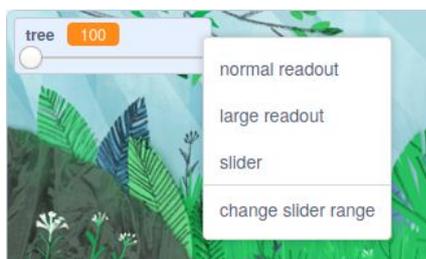Now, add the tree variable into the set size to block.

Step 11:

You can now move the slider to adjust the size of the tree. At the moment, the tree size can only be changed from 0 to 100.
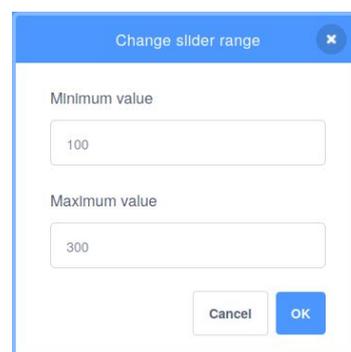

Step 12:

On the Stage, right-click on the tree slider and select **change slider range**.

Step 13:

Change the range to between 100 and 300.

Step 14:

Now, move the slider to watch your tree grow in size from 100% to 300%.

2. Colour the flowers

You used a tree variable to change the size of the tree. Now, you can use a variable to change the colour of the flowers.

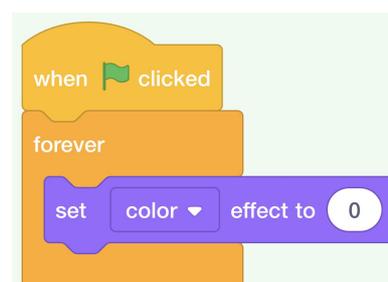**Step 1:**

Click on the **flowers** sprite, then create a new variable called flowers. If you can't remember how to do this, go back to the previous step for a reminder.
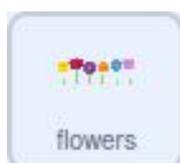
Step 2:

Change the color effect of the flowers, in the same way that you changed the size of the tree.

Variables that store numbers do not always have to have values that are greater than 0. You can use negative numbers as well.
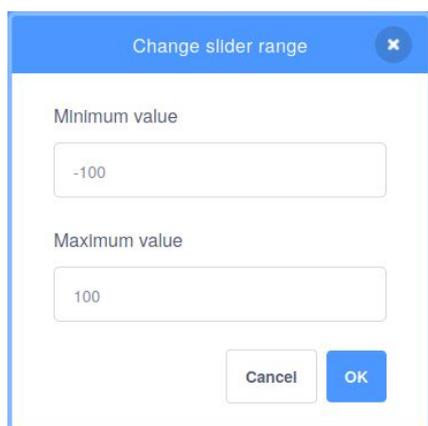
Step 3:
On the Stage, right-click on the `flowers` variable and set it to **slider**.
Now, change the **slider range** to between `-100` and `100`.

Step 4:
Click on the green flag, then adjust your `flowers` slider to see the flowers change colour.

3. Set the scene

In Scratch, you can also add code to the **Stage**, rather than to a sprite. In this step, you will change the brightness of the backdrop and add some soothing sound effects.

Step 1:
Go to the Stage pane and click on the **backdrop**. You will now develop a program for the **backdrop** in the Code area.

Step 2:
In the `Variables` blocks menu, click on **Make a Variable** and call the new variable `light`. Change the variable to a **slider** with a range between `-40` and `40`.

Step 3:
Use the `set color effect to` block, but use the drop-down menu to change `color` to `brightness`.
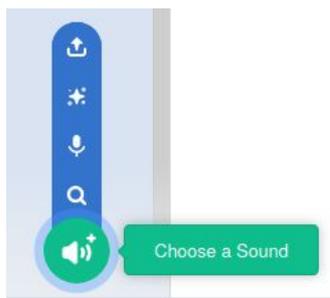
Step 4:
You can also add sound effects to the **Stage**.
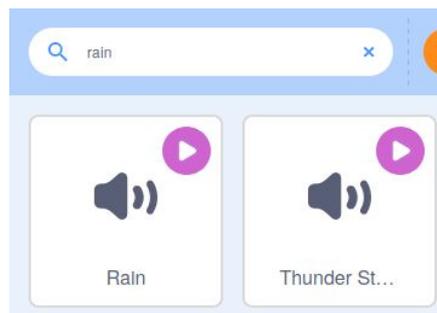To do this, click on the **Sounds** tab.

Step 5:

Click on the **Choose a Sound** icon in the bottom left-hand corner of the screen to select a sound.

Step 6:

You can now search for sounds. In this project, we will use the **Rain** sound, but you can choose anything you like. Click on the **Rain** icon to select the sound.

Step 7:

Create a `rain` variable and make it appear as a **slider**.

Step 8:

Add code to `play` the `Rain` sound `forever`

Step 9:

Add `set` the `volume` of the sound to the value of the `rain` variable.

Step 10:

Click on the green flag to run your code and change the volume of the rain with the slider.

4. Make the fauna move

Fauna means **animals**. In this step, you will add a moving grasshopper to your serene scene.
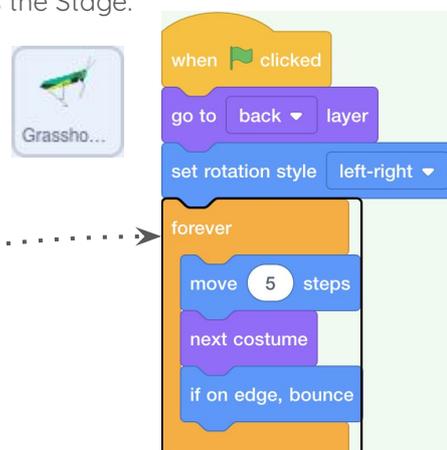
Step 1:

Set up the **Grasshopper** sprite so that it moves from left to right and appears behind the tree and flowers.

Step 2:

Now, make your **Grasshopper** sprite move back and forth across the Stage.

The **Grasshopper** sprite is moving a little quickly at the moment, but you can use a `variable` and a `wait` block to slow it down.

Step 3:
Create a new `variable` called `grasshopper` and switch it to a **slider**.

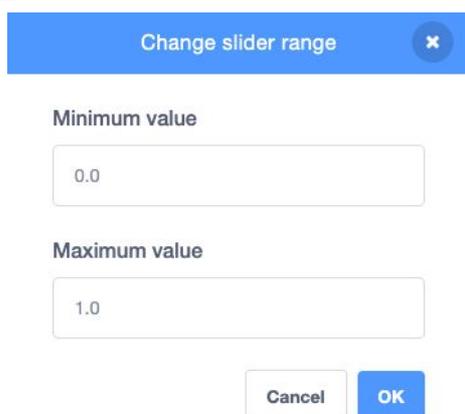If you click on the green flag and move the slider, you will notice that the grasshopper moves very slowly. To fix this, you need to change the range of the `grasshopper` variable to a much smaller range of numbers.

Step 4:
Now, you can use a `wait` block to slow the grasshopper down.

Step 5:
On the Stage, right-click on the `grasshopper` variable and change the slider range to between `0.0` and `1.0`.
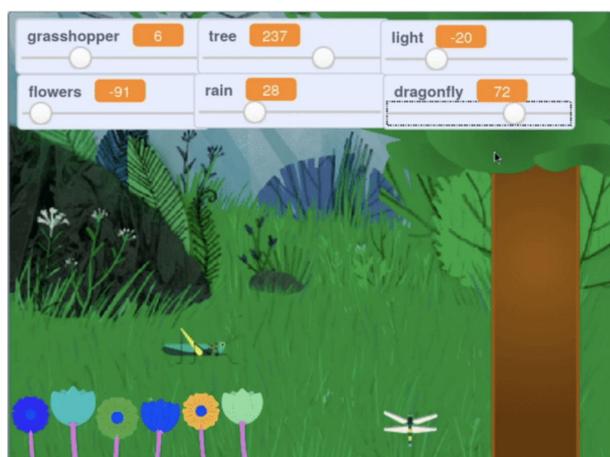

Step 6:
Click on the green flag, then adjust your `grasshopper` slider to see the **Grasshopper** sprite change speed.

5. Add more

Add a **dragonfly** sprite to your project, and use a `variable` slider to control the speed at which the dragonfly moves. The dragonfly could move from side to side, like the grasshopper.