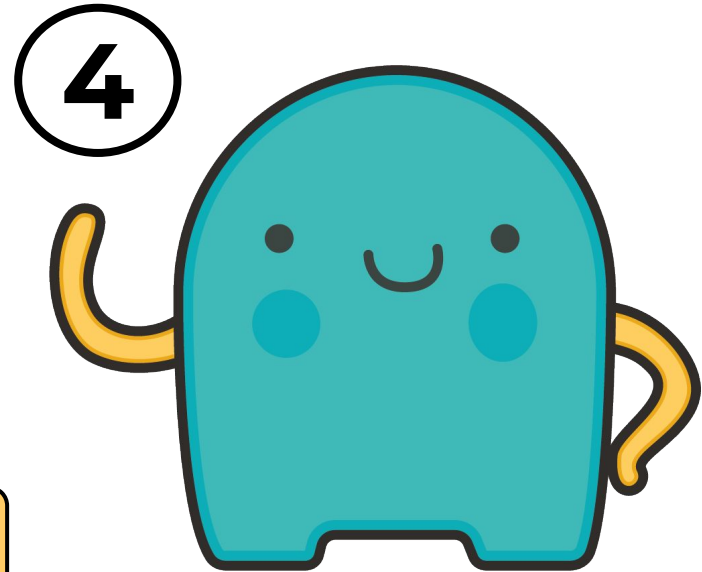


Starter Lesson 4:

Storm Simulation

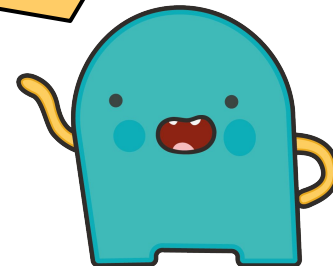
An Introduction to New Behaviors

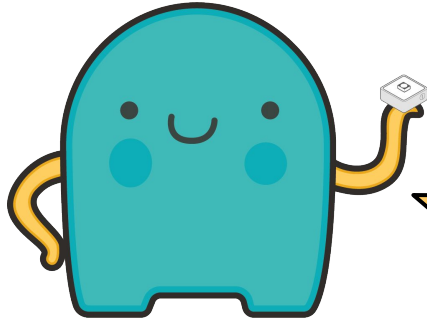


What are the key features of a storm?

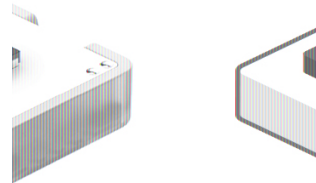


How could SAM Space be used to simulate the effect of a storm?





Which parts of a storm could these blocks represent?



**Sound
Player**

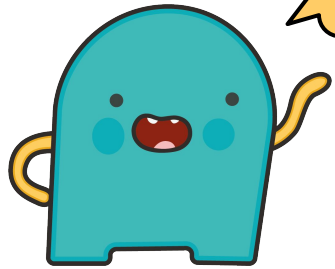
RGB LED

lightning

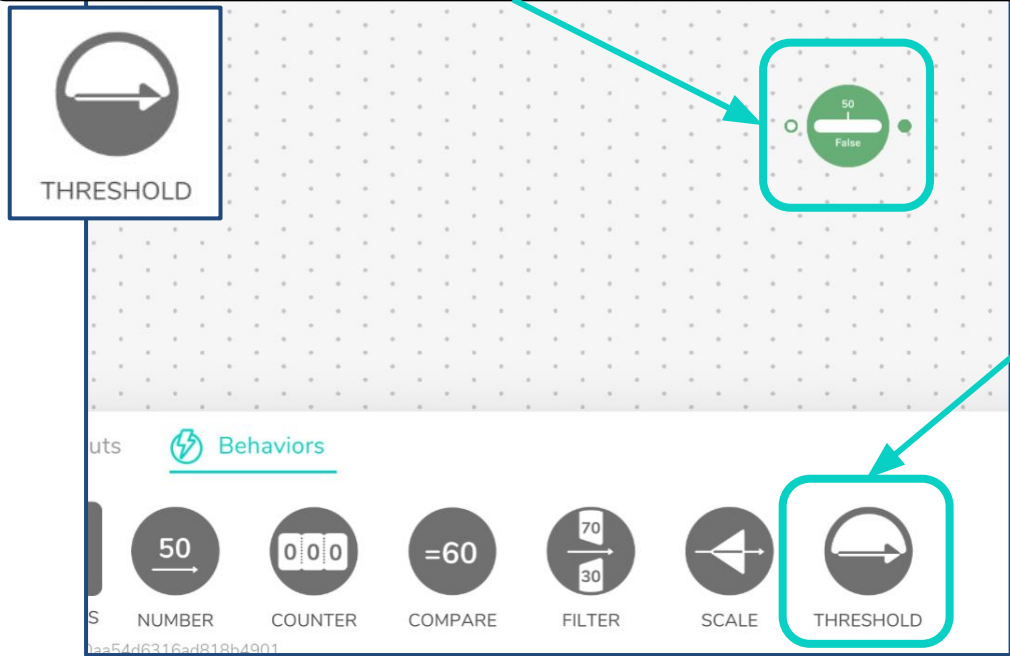
rain

wind

Create a system to represent the sound of a storm



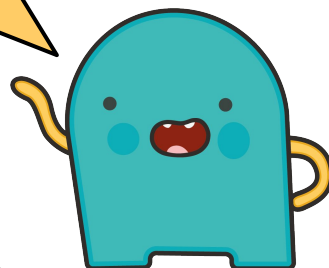
We're going to be using a **Threshold** block



You can find it in the **Behaviors** tab

You can set the **Threshold** to a value between '0' and '100'.

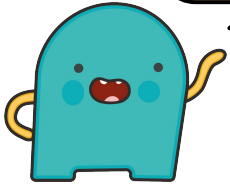
Values above the threshold become **'true'**; values below are 'false'.



Create a system to represent the sound of a storm

1

Find each of these blocks and drag them onto the workspace:



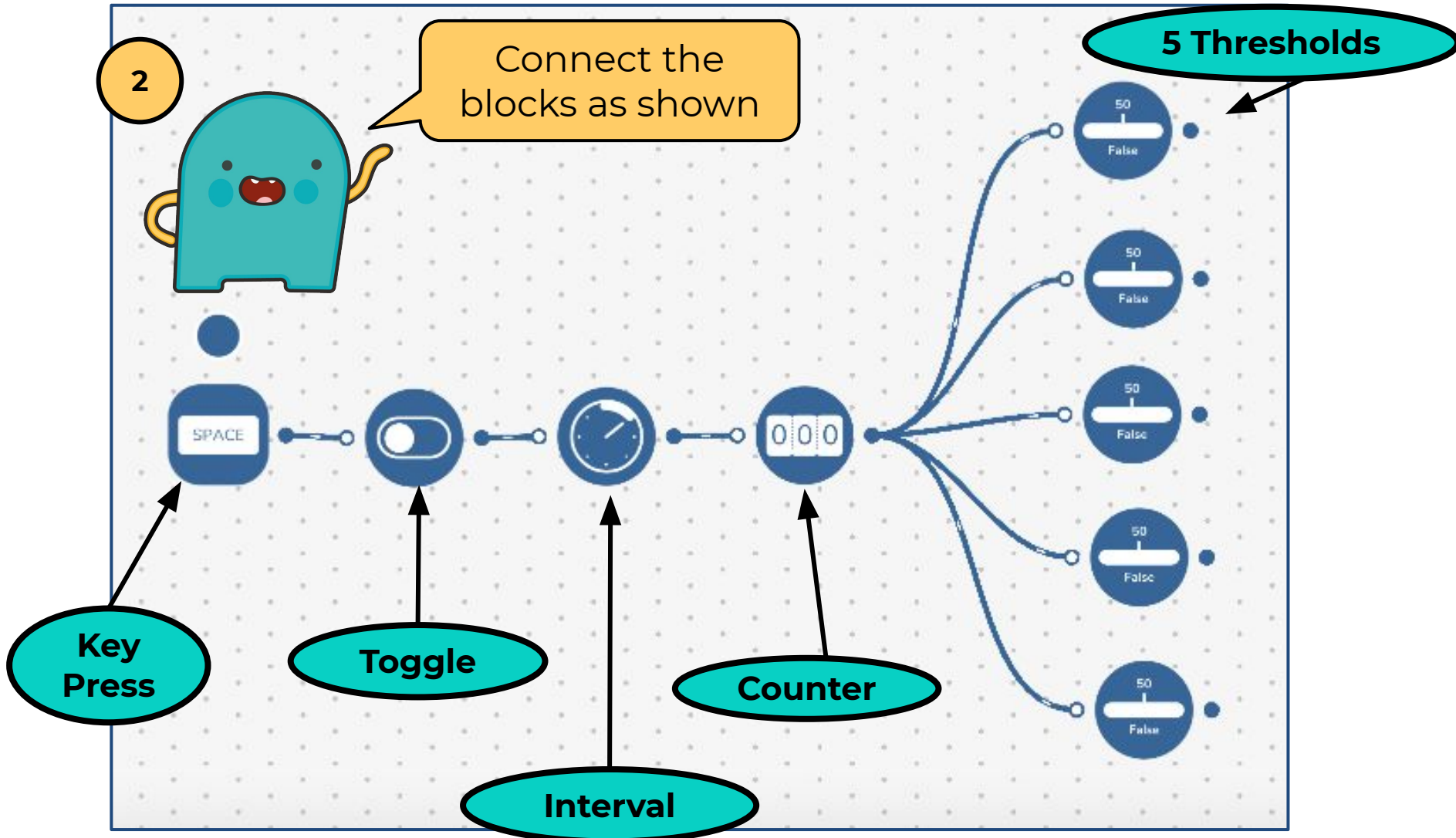
Inputs
tab



Behaviors
tab



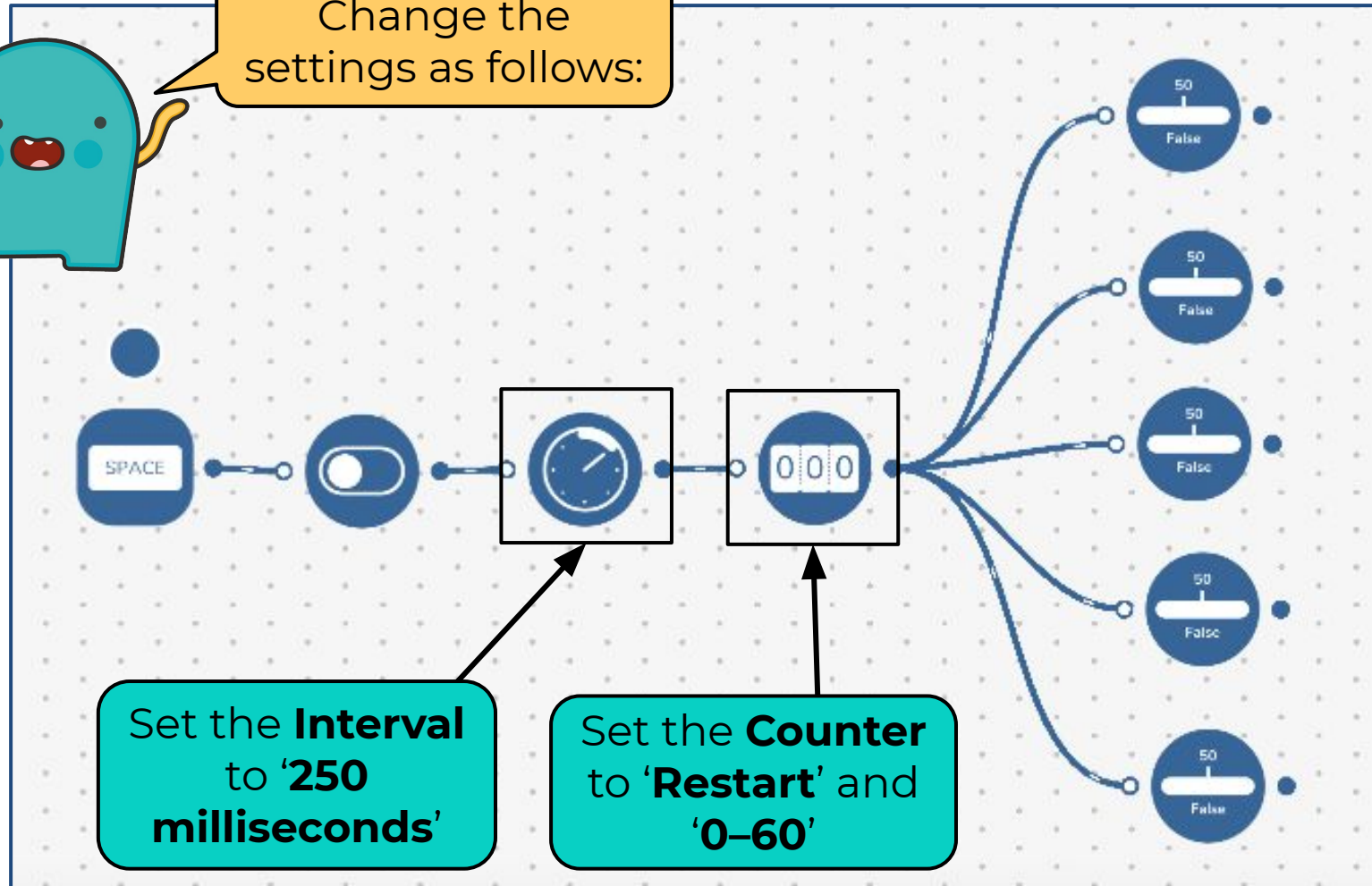
Create a system to represent the sound of a storm



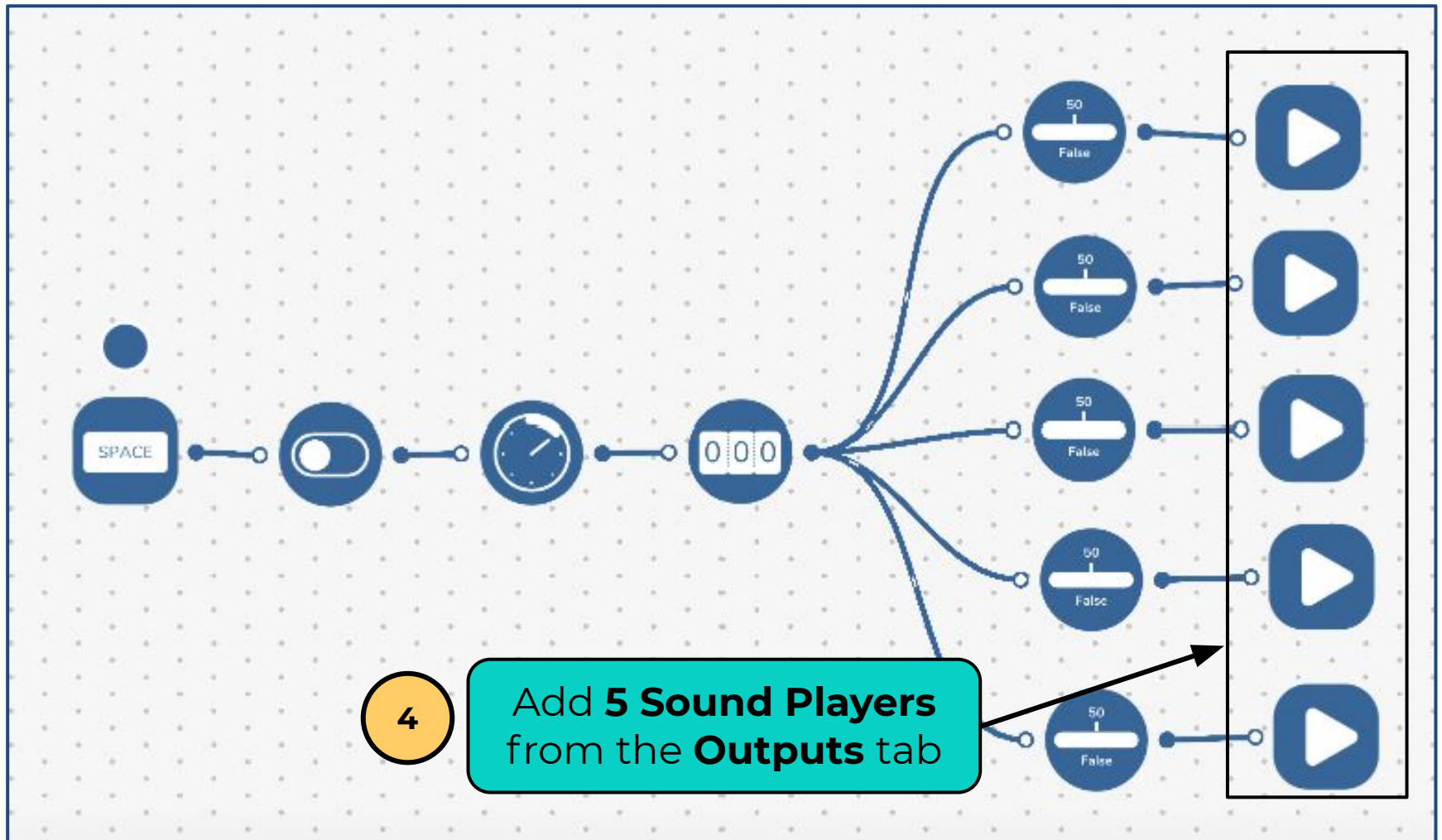
Create a system to represent the sound of a storm

3

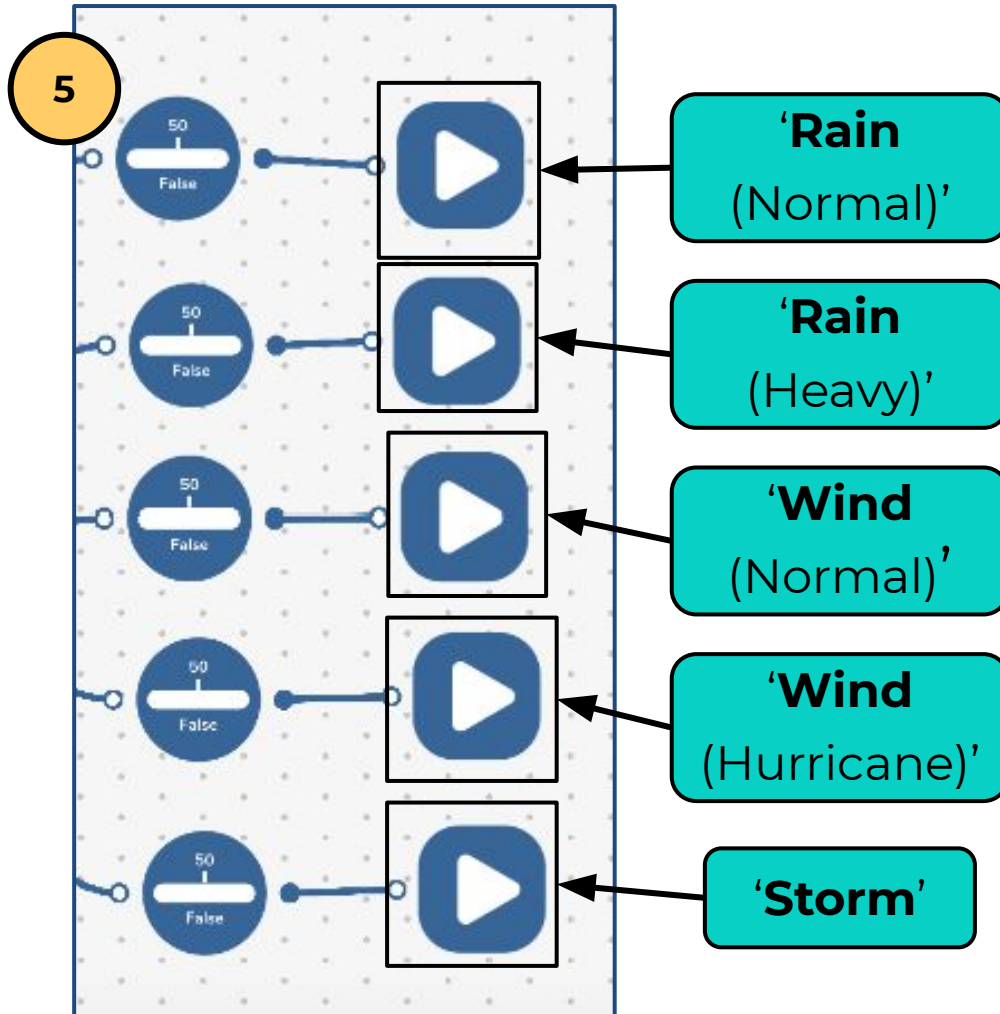
Change the settings as follows:



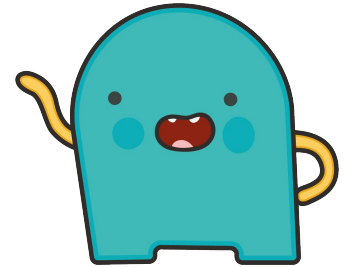
Create a system to represent the sound of a storm



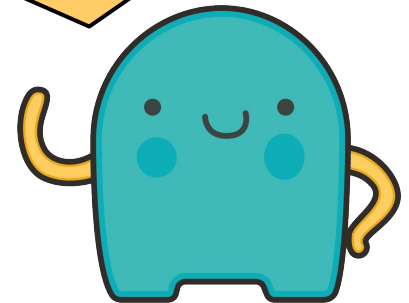
Create a system to represent the sound of a storm



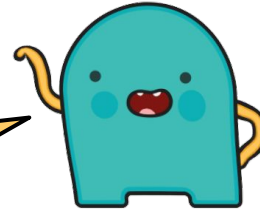
In the settings of the **Sound Players**, set to ...



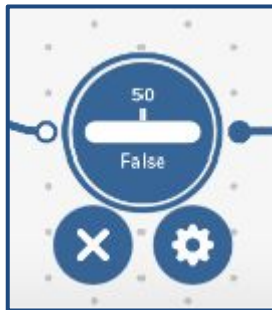
Test your system!



How do I stop all 5 Sound Players starting at the same time?



Set the 'true' values of the **Threshold** blocks as follows:



Select threshold value.
Numbers above and including the value will become true, while those below will become false.



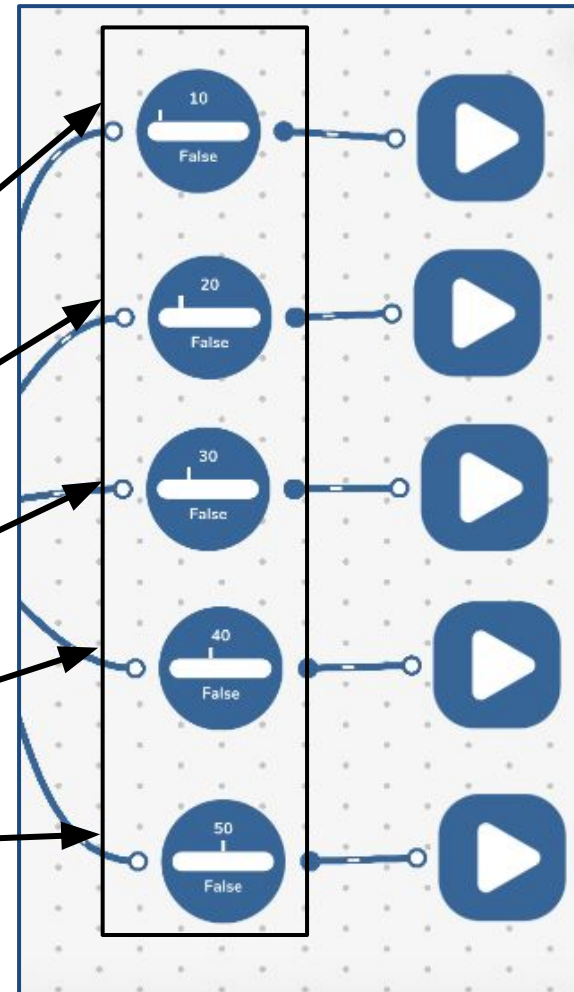
'10-100'

'20-100'

'30-100'

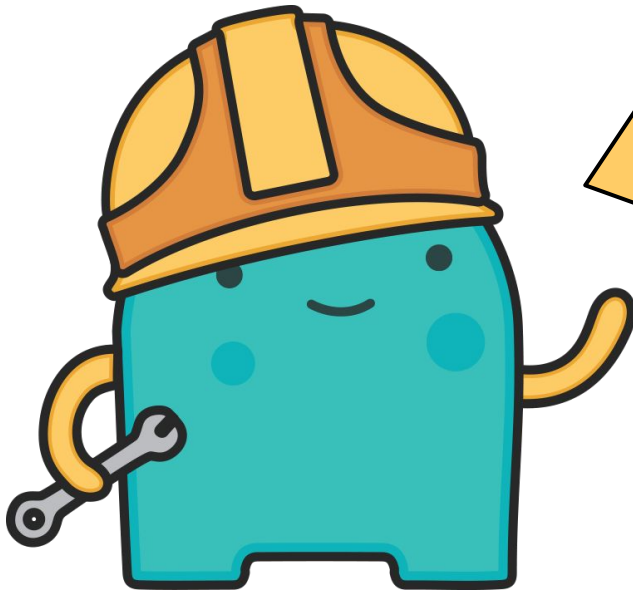
'40-100'

'50-100'



Challenge:

Create a flash of lightning using an RGB LED

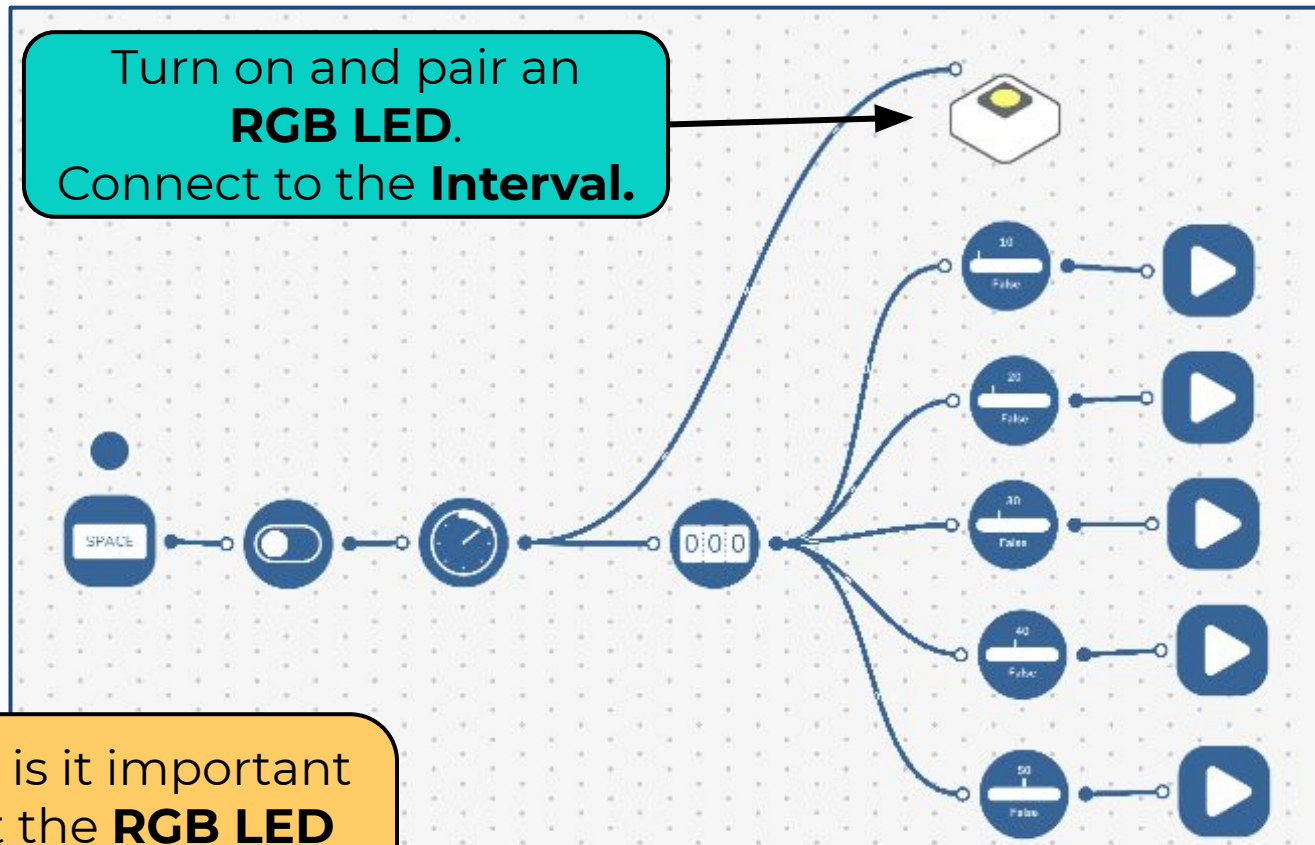


Think:

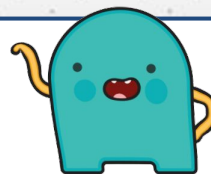
- What other blocks might you need?
- What behaviors will help create the “flash” effect of lightning?

Take some time to tinker on your own. Then, let's come together to see what you created!

Create a flash of lightning using an RGB LED

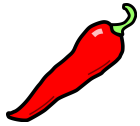


Why is it important that the **RGB LED** flashes before the storm is heard?

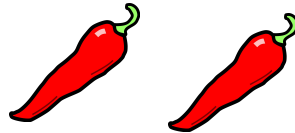


Play your storm, maybe you could draw a picture to go with it!

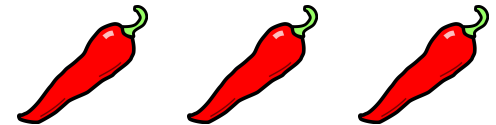
Choose an extension challenge!



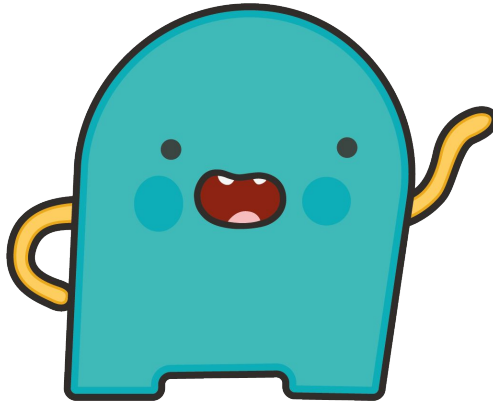
Experiment with the **RGB LED**. Can you make the light cycle through different colors?



Experiment with the settings of the **Counter** and **Interval** blocks. Can you make the storm last longer?



Experiment with a second **RGB LED** to the system. Can you make it flash a different color to represent the ending of the storm?



**What have
you learned
today?**

**Can you
draw your
system?**

