

# Scratch Tutorial - Ghostbusters

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## Summary

With this activity, you will create the famous game Ghostbusters. You have to make as many ghosts as possible disappear in only 30 seconds, in order to earn as many points as possible. The game is created step-by-step, and allows to reach rapidly the end-result of each step. You will start by animating the ghost, then you will make it disappear, and finally you will program the score counter and the timer. Activity created by Théo Lafage and translated by Soizic Pénicaud.

## Skills developed

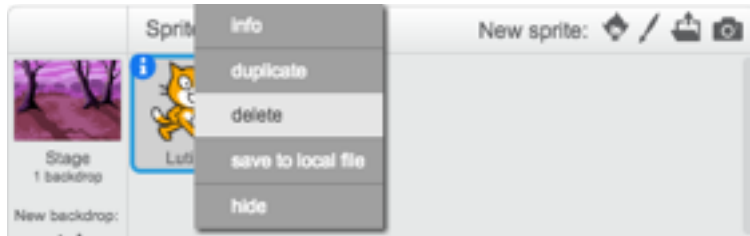
- Build a score counter
- Build a timer
- The concept of variable
- The concept of loop

## Activity



### Step 1: Program a wandering ghost

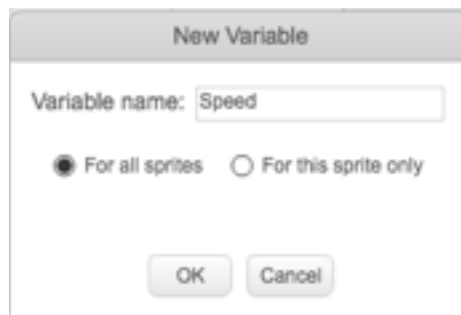
1. Start by creating the fixed image: for this, we need a background and a ghost. Look through the windows on the bottom left corner of the screen to select these elements. For the background, click on “screen” and go to the “background” tab on the right. (For example, import “woods” in “nature”).
2. Create a new sprite (for example, select “Ghost1” in the category “Fantasy”). We will need to delete the cat Sprite (Scratch’s mascot). To do so, right-click on the sprite and click “delete”.



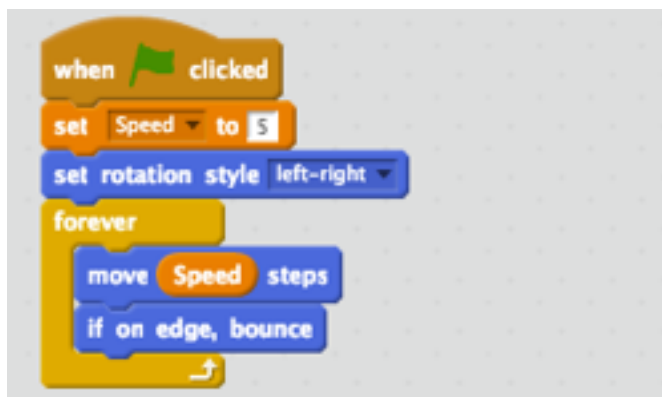
3. Now, we want the ghost to move.

For that, we will need to add a variable. Go to the tab “Data” and select “New Variable” for the sprite “Ghost 1”. Name the variable “Speed”. Select “for all sprites” so that the variable applies to all the sprites. Untick “Speed” in the list of variables so that it doesn’t appear on the stage.

The “Speed” variable will allow us to define the ghost’s speed.



4. To make the ghost move across the screen, build the following script. The block “set rotation style” isn’t mandatory. It makes it so that the ghost can’t be upside down.



5. Now, let’s test our code! To do so, click on the green flag.

## Step 2: Make the ghost appear and disappear randomly

To make the game more fun, we will make the ghost appear and disappear randomly. To do so, we will right another script which will be executed at the same time as the first.

This second script, still in the ghost, will hide it for a random duration of time, then show it for a random duration, and so until the end of the game.

Write the following script:

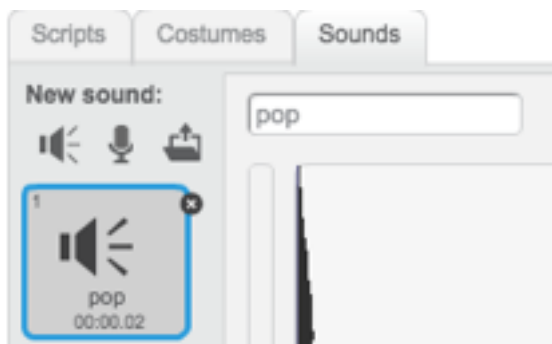


Test the program.

### Step 3: Make the ghost disappear when clicking on it

To turn our program into a game, we need to give the player a task. Here, they need to click on the ghosts to make them disappear. When the player clicks on a ghost, we want it to disappear while making a sound. To do so, first go to the “Sounds” tab:

1. In the “Sounds” tab, choose the existing “pop” sound, or add a new sound by clicking on “import”.



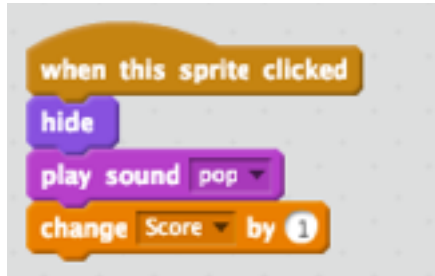
2. Write the following script (if you haven't chosen the sound “pop”, replace it by the one you have chosen):



Test the program.

## Step 4: add a timer and a score counter

We almost have all the elements to make a game; all we miss is a timer and a score counter! The player will earn points every time they click on a ghost. They have a limited amount of time to earn as many points as possible. We will use variables to count points and duration. 1. Create a new variable (see step 1.3) for all the sprites. Call it "Score". Modify the script from step 3.2 to add one point to the score every time the player clicks on a ghost.



2. Create a new variable (see step 1.3). Call it "Timer". We will write a script which sets the timer to 30 seconds and sets the score to 0 when the player clicks on the green flag. We will use the instruction "repeat until" to wait one second and then deduct one to the timer. This operation has to be repeated until the timer reaches 0.



### Bonus :

We can make the game even more fun by adding other ghosts. To do it:

1. Duplicate the ghost by right-clicking on the ghost in the window "Sprites".
2. You can adjust the size of each ghost if you want to.
3. You can also modify their speed.
4. You can move them to the background so they don't all fly at the same height.
5. For the bravest: why not add some difficulty to the game? Try to create ghosts of different speeds. The faster a ghost, the more points the player earns. (Be careful, you need to change the "Speed" variable so it applies to only one ghost at a time).