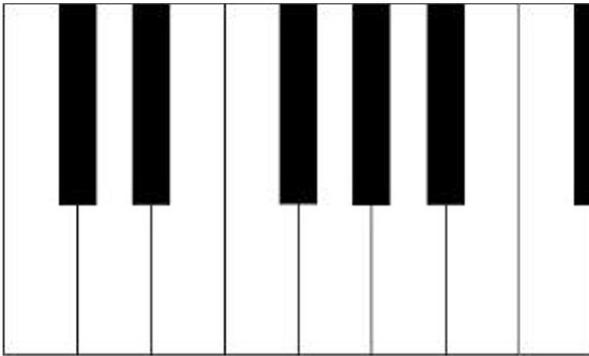


# Create a simple piano

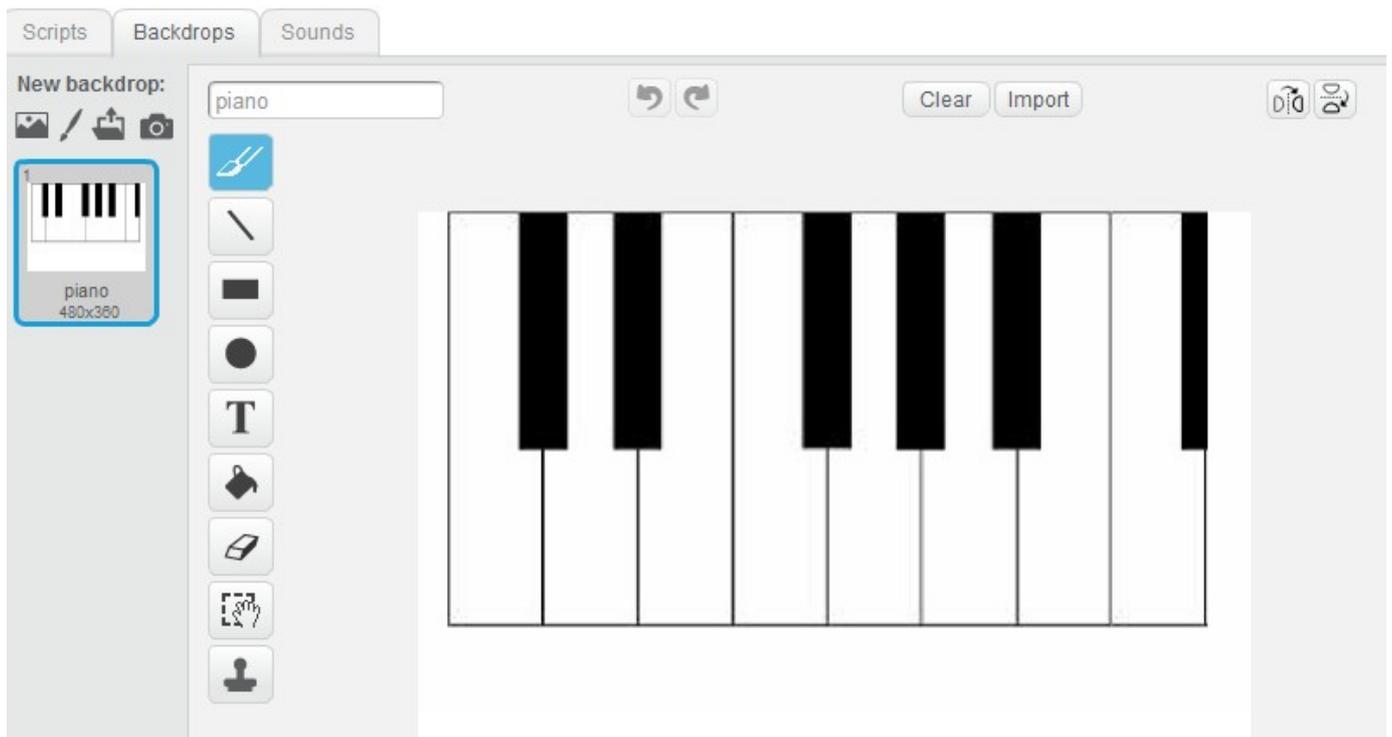
Use a search engine like Google to find 2 images: piano and finger.



Save images then upload into Scratch.

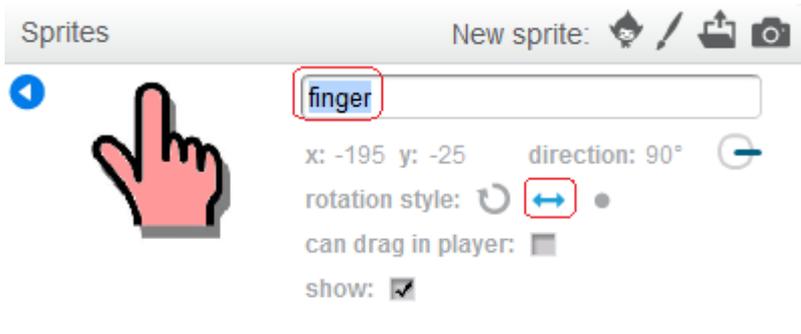
Piano is a new Stage. Finger is a new Sprite.

You might have to Edit the Piano stage so that it is in the correct position and there are 8 white notes.

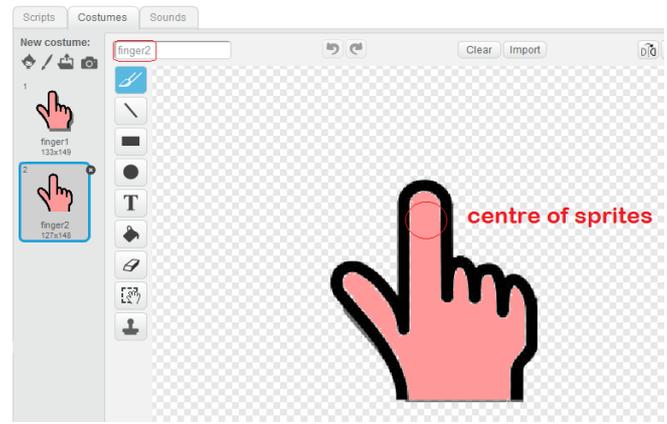
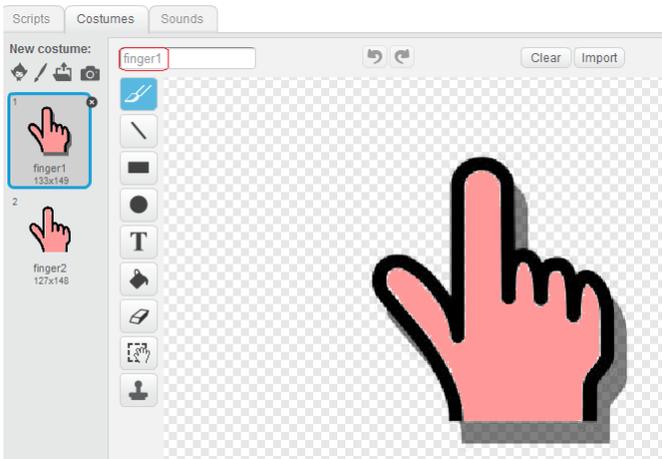


Rename Sprite to **finger** and change

↔ rotation

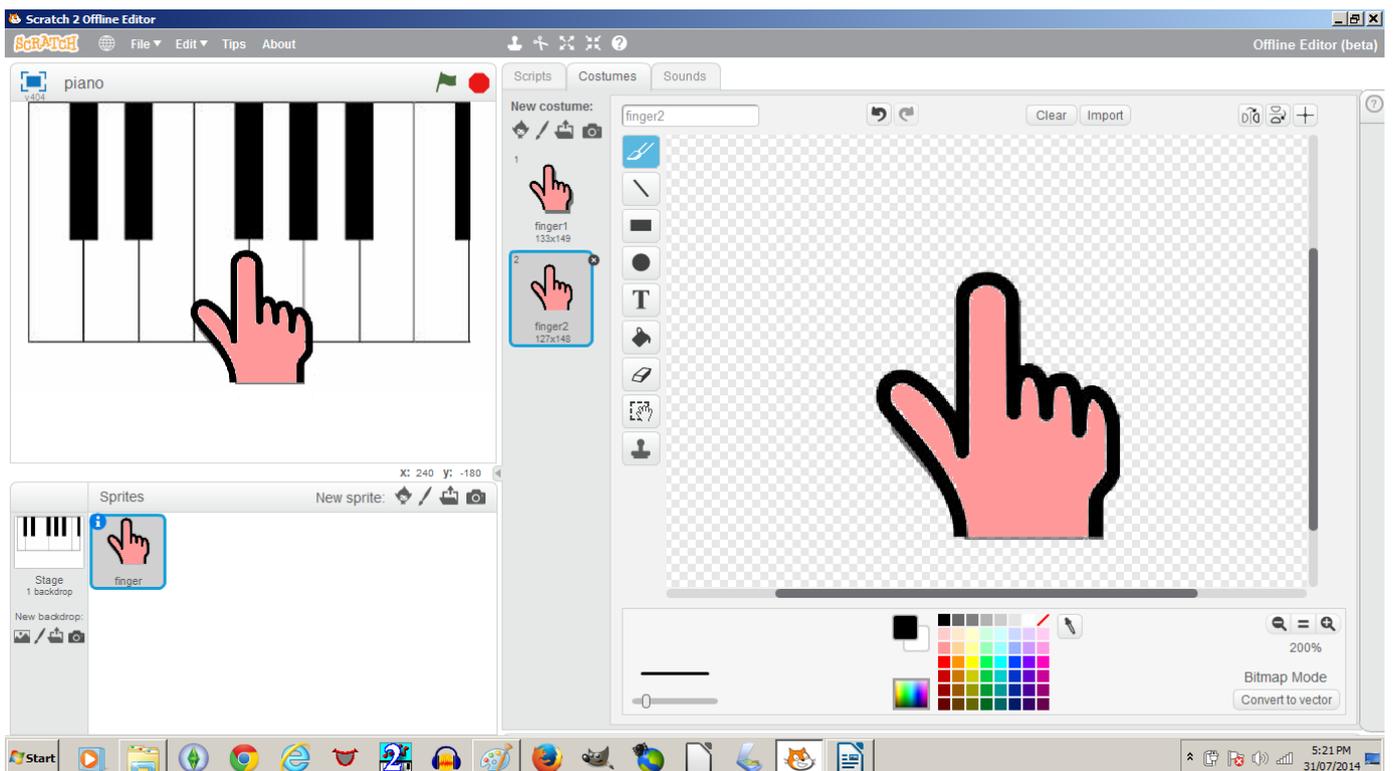


Go to Costumes, duplicate then position and edit each costume.



*Note: the centre of the finger sprites is on the pointing finger.*

Project should look something like this so far.

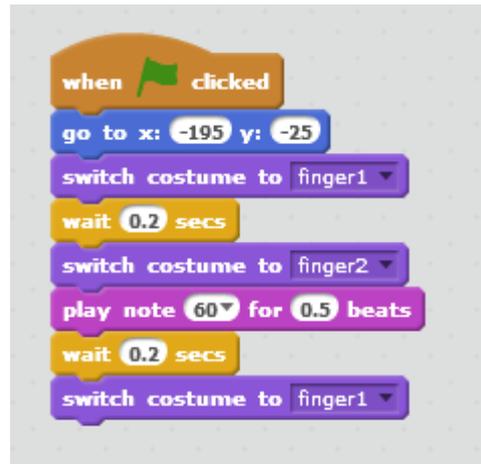


# Create Scripts

Drag finger to first white note on piano then create this script.

Your x and y values might be different which is okay.

Click on Green Flag.



Drag finger to second white note on piano.

Separate script from Green flag, right click and duplicate.

Change second script.

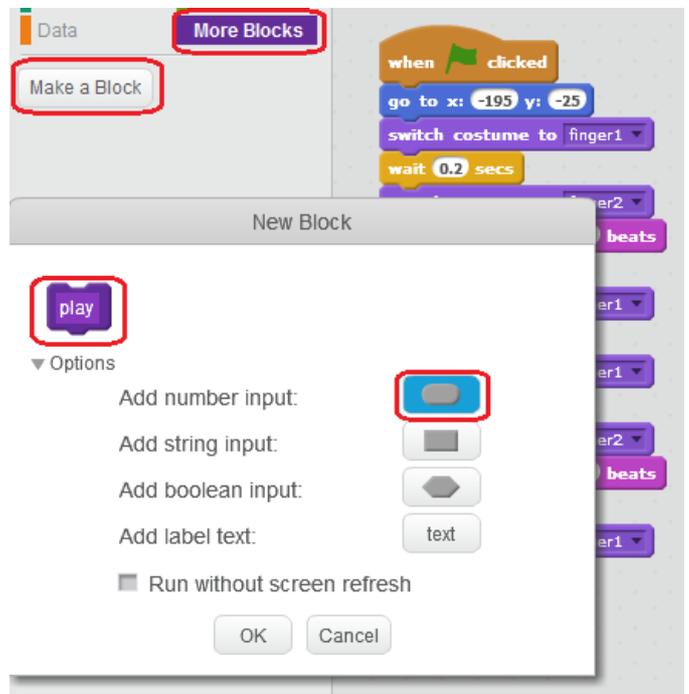
Click on Green Flag.

We could keep duplicating to play a scale but there's a better way using [More Blocks](#)



Click on **More Blocks** then **Make a Block**.

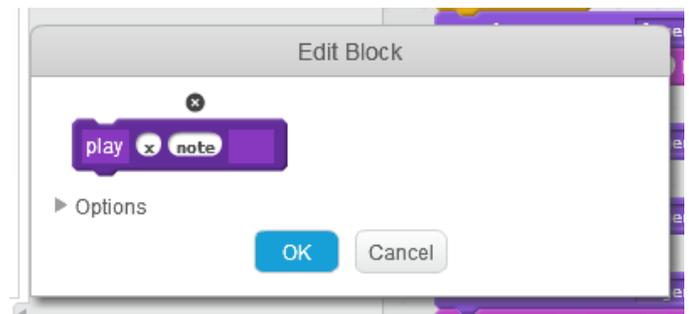
Call the new Block **Play** then open up Options and Add 2 number inputs.



Right click on and Edit



Instead of number1, number2 the 2 values are x and note



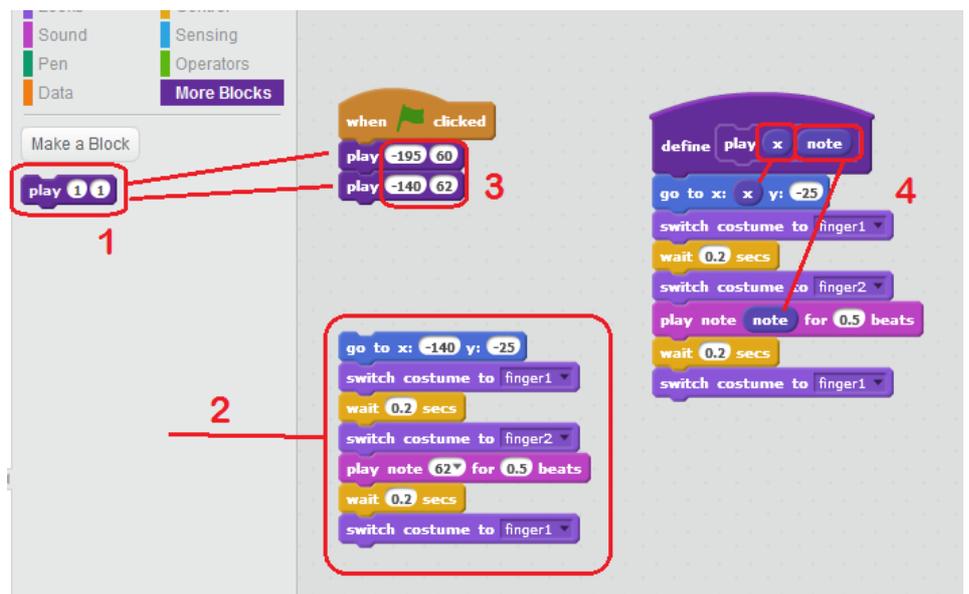
Follow the steps

Each

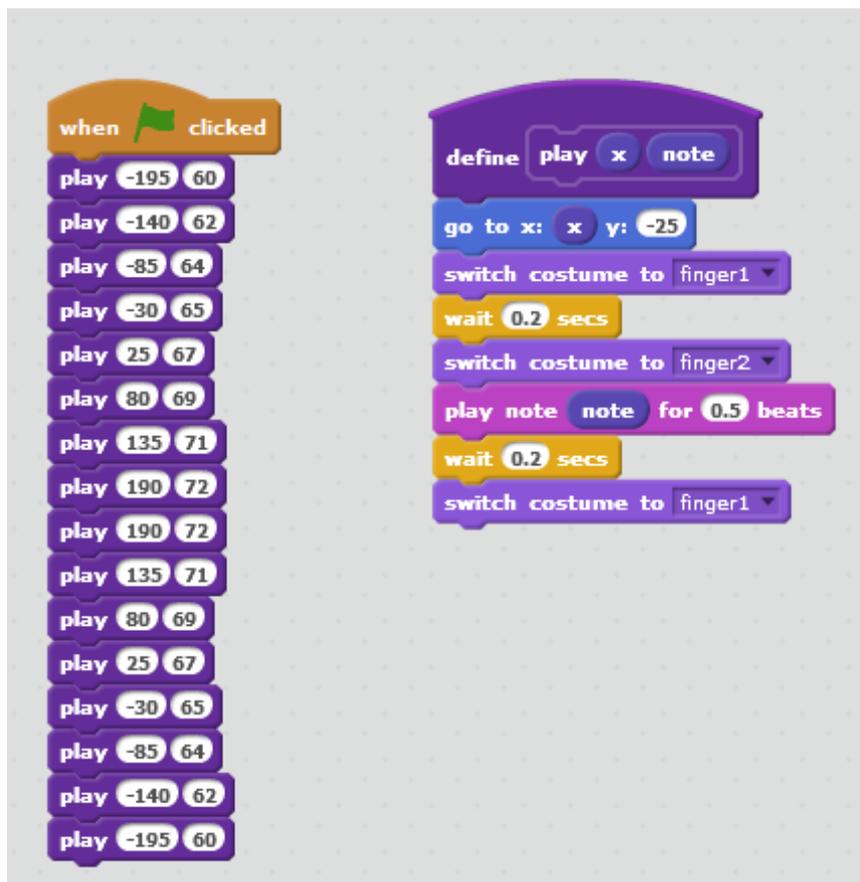


attached to Green Flag plays **note** in **x** position. **y** doesn't need to change.

Try adding more white notes.



This script plays a scale of C up and down 1 octave



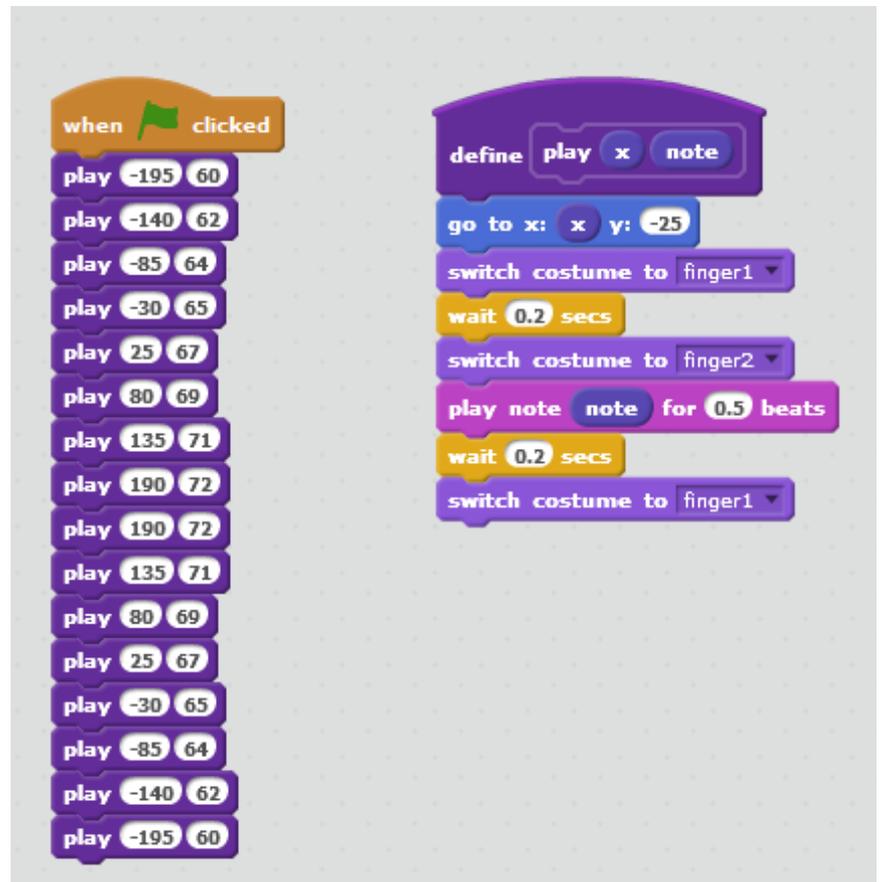
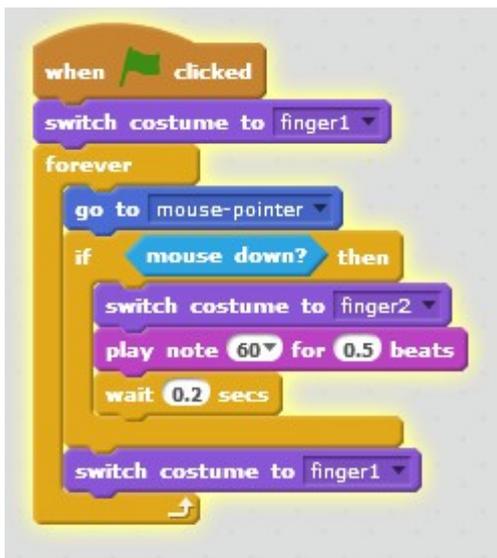
## Create New Project

Use the piano project to create a new project.

Piano project looks something like this ==>

The new project will allow user to move finger over a note and play it.

Replace piano script with this but keep the play block:



Click on Green Flag. Notice that C is played no matter where you click.

Next we need to detect where the mouse is so the correct note is played.

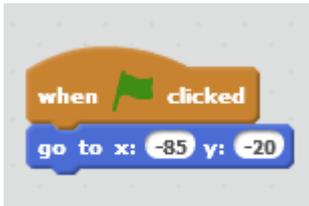
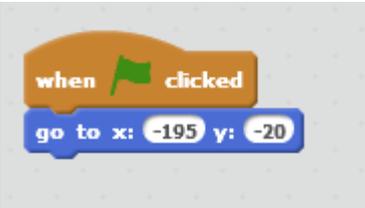
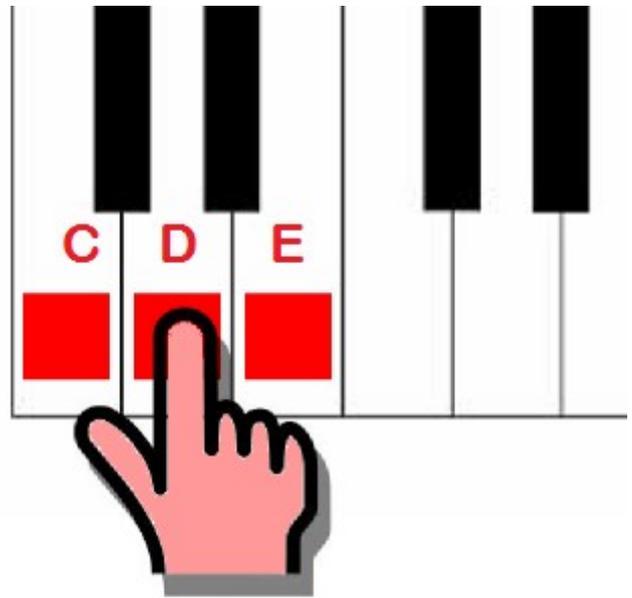
To do this we need new sprites. Draw new Sprite and call it C. Duplicate it and call the new Sprite D. Duplicate again and call the new Sprite E. They can be red for now.



## Save project as Play Piano

Next position the new sprites as shown.

The Green Flag scripts for C D E are nearly the same for now apart from the x and y values.



Your x and y values might be slightly different to the ones used in Piano or the ones shown here.

Now change the finger script.

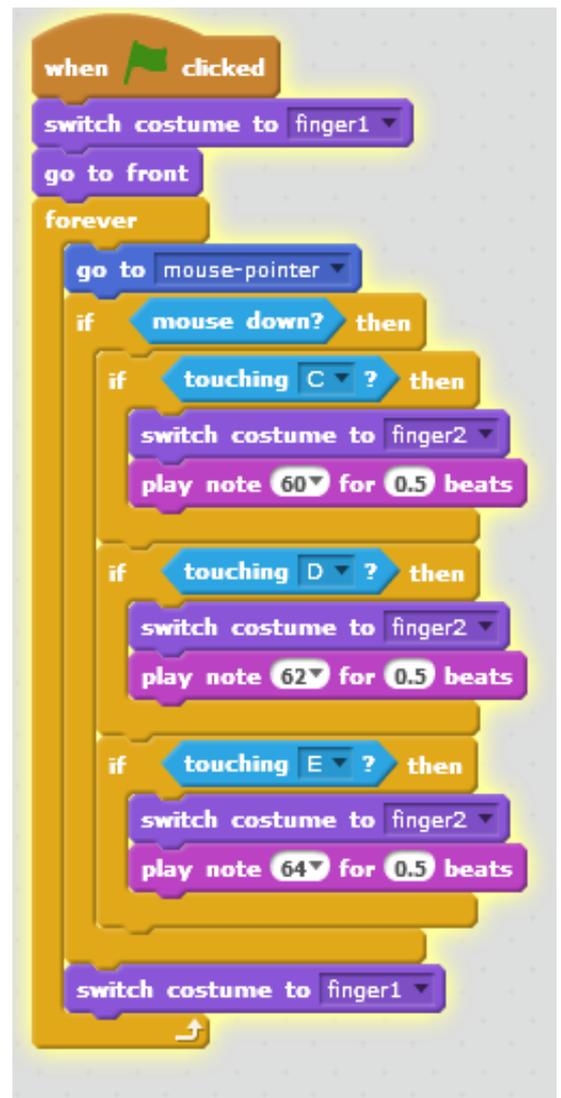
Can you see how **if touching** statements are duplicated with a couple of changes for each note?

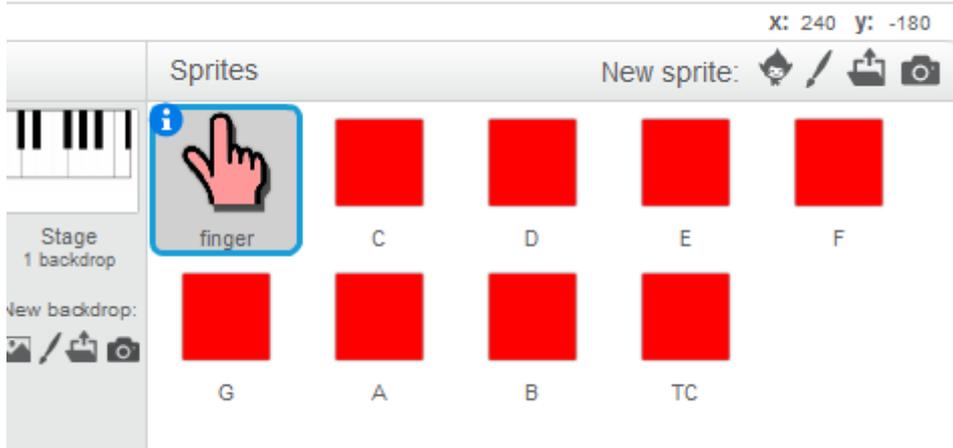
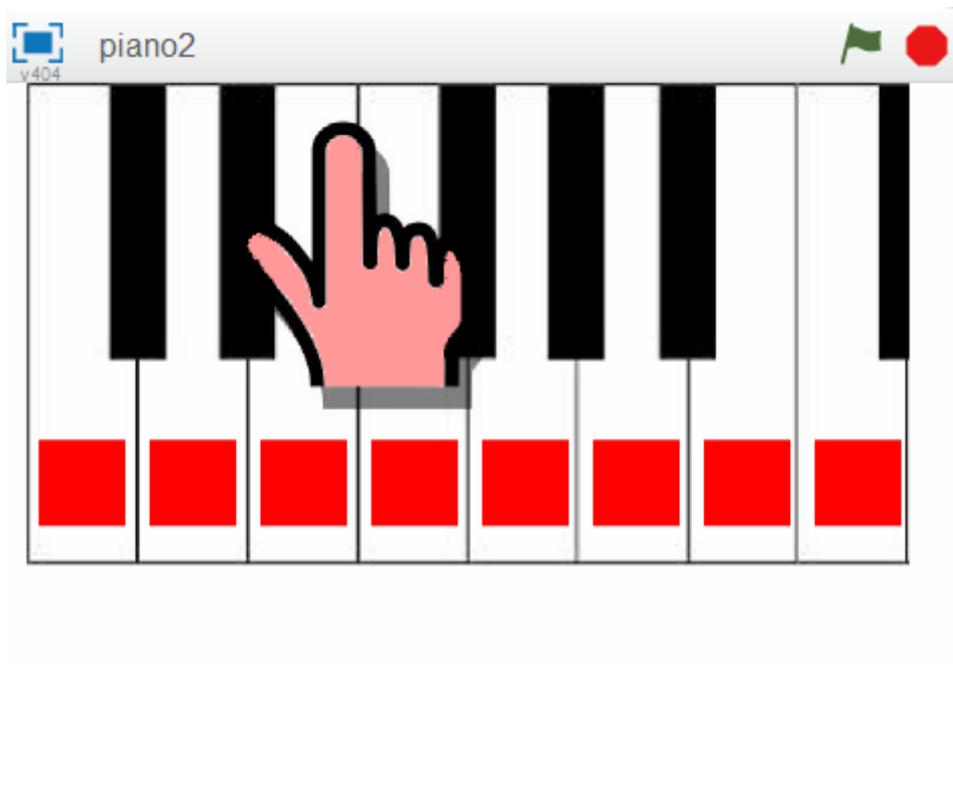
Before we add the other notes, we can use the **play** Block.

Edit **play** and remove move x



Assuming you have created 8 red square sprites (call Top C TC), your project will look like:





```

when green flag clicked
  switch costume to finger1
  go to front
  forever loop
    go to mouse-pointer
    if mouse down? then
      if touching C? then
        play 60
      if touching D? then
        play 62
      if touching E? then
        play 64
      if touching F? then
        play 65
      if touching G? then
        play 67
      if touching A? then
        play 69
      if touching B? then
        play 71
      if touching TC? then
        play 72
    switch costume to finger1
  
```

```

define play note
  switch costume to finger2
  play note note for 0.5 beats
  
```

Save project as Play Piano

# The Black Notes

Duplicate one of the note sprites and rename it **C#**

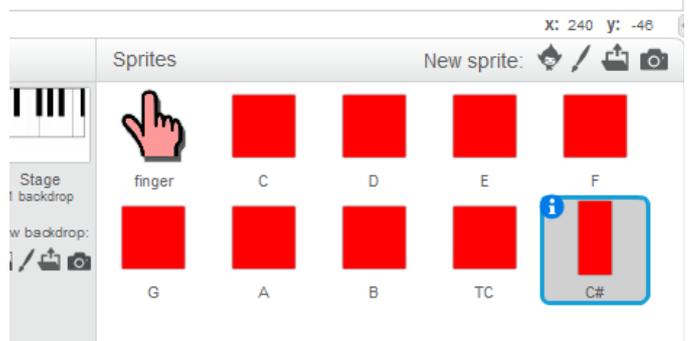
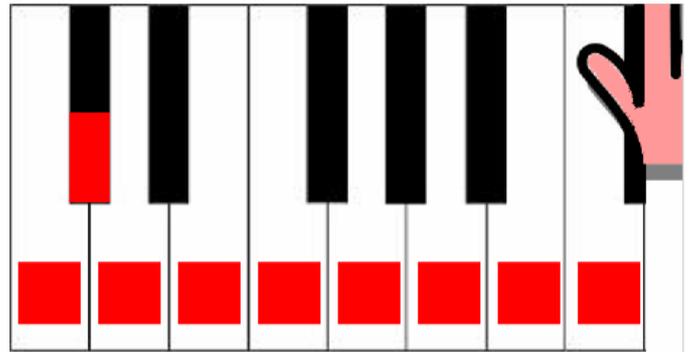
Edit the new sprite so that it fits on the first black note

Edit the **C#** script



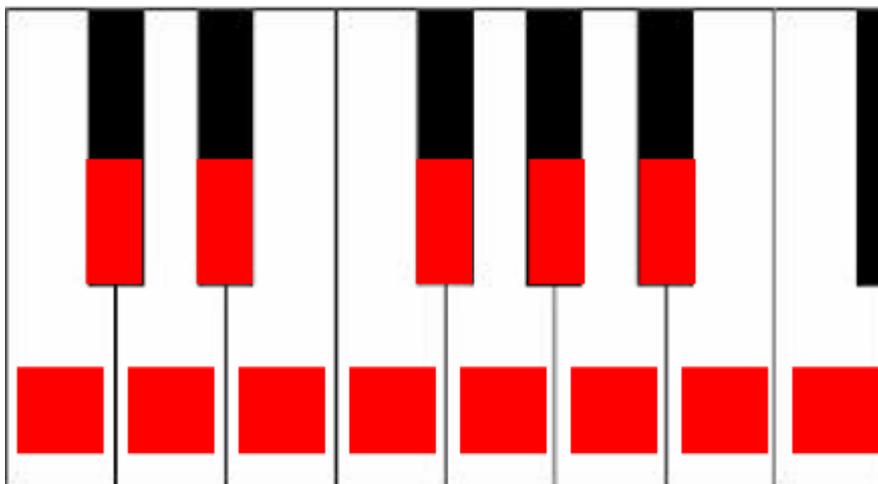
x and y might be different.

Add a new note to **finger**.



Add the other notes by first duplicating **C#** and adding to **finger** script

D#	63
F#	66
G#	68
A#	70

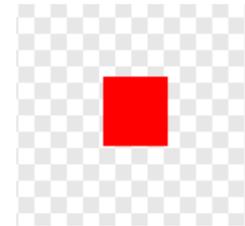


Save Play\_Piano

# Finger Bug

Adding the Black Notes has caused a bug where more than one note is touched by the finger at the same time.

To fix duplicate **finger** and edit the costume. Rename it **touch**.

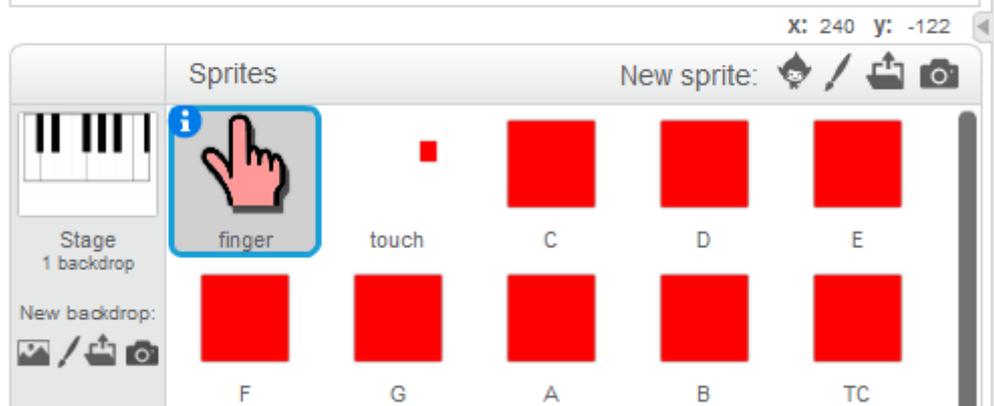
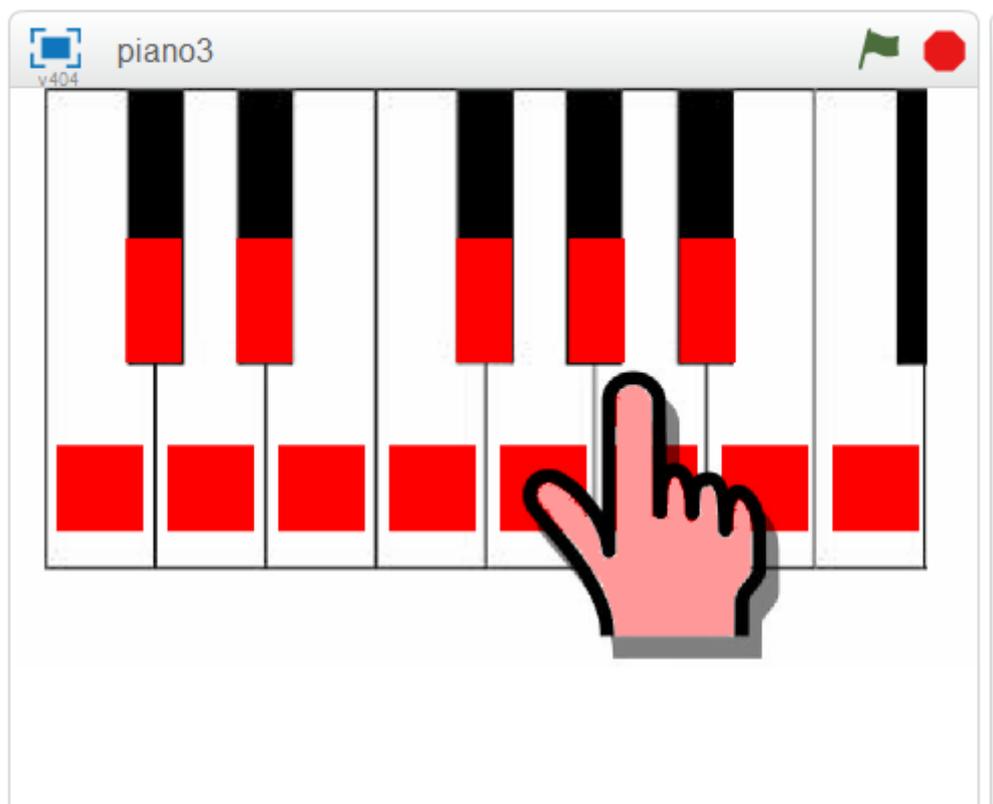


Change the **finger** script to:



**touch** and **finger** move together under the mouse

and remove from **touch** script



Save Project