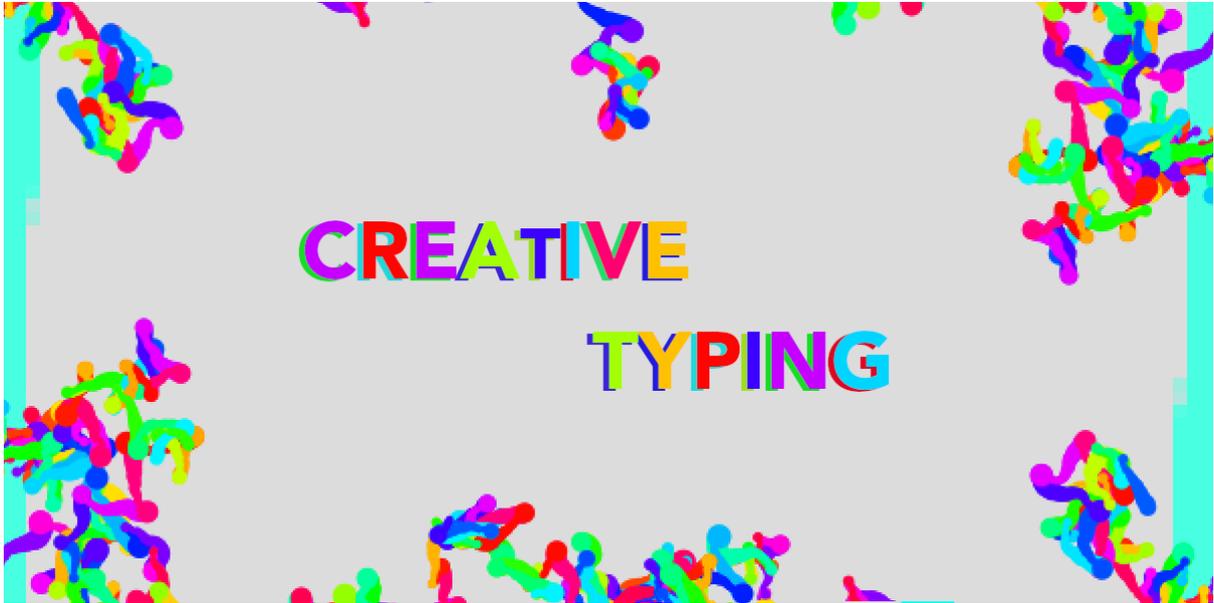


Phoenix



Creative Typing

In this workshop, we'll experiment with a creative typewriter. You could use it to draw with text, write poems or play music.

You will need:

Access to the [Scratch](https://scratch.mit.edu) website, from a computer or laptop.
(It should also work from an ipad or tablet)

This project uses sound, so it's important that the device you are using has a microphone.

If you want to save your project at the end, make sure you have created a Scratch account and are logged in.

Below is the template project. Open it up and start remixing:

<https://scratch.mit.edu/projects/495144437>

Step 1

Click the green flag and have a go at typing. See if you can notice the different effects that are happening?

What are the other elements that are doing things?

Apart from the letter keys you should be able to notice different effects with the space bar and arrow keys.

If you make a design you want to save, right-click and choose save image as...

Step 2

Ok, let's take a look at the different sprites we have in our project.

You should be able to see; type, doodlers, mouse follower, splat and placer.

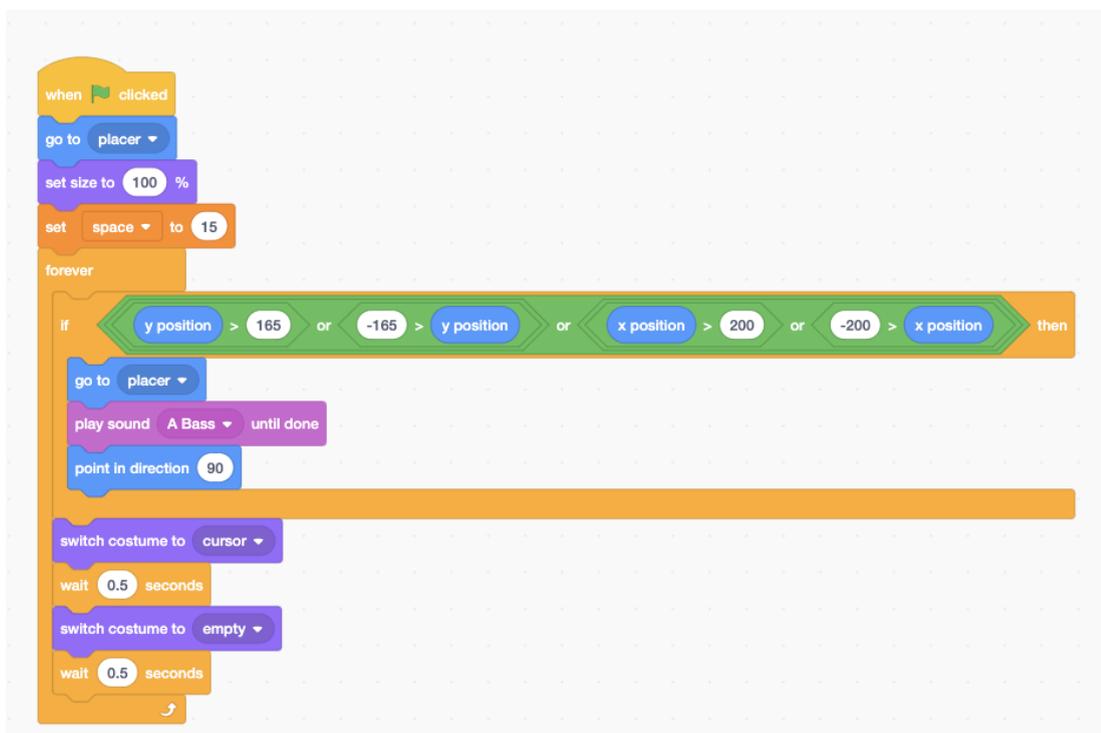
These all work together to create the different effects seen in our project. The most important of these is probably the *type* sprite. Let's open that one and have a look at the code.

Here you can see the block of code that runs when the flag is clicked.

- We move the sprite to a starting point, which is the *placer* sprite.
- We make sure the size is reset.
- We set our *space* variable to 15.

And then the code starts a forever loop. The first part of this is checking the position of the sprite. If it's too close to the edge of the scene it will reset to the *placer* sprite.

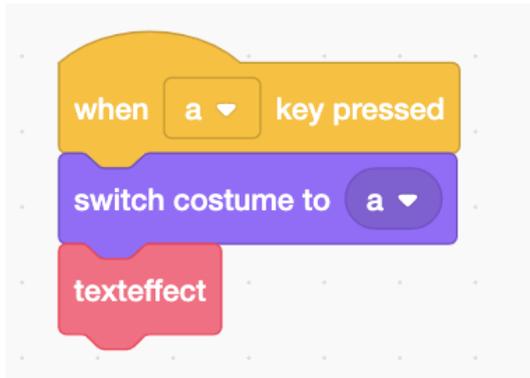
The second part of this creates a blinking animation effect by switching between two costumes.



Step 3

If you scroll down the *type* code blocks you'll see that most of them are just commands that run when a letter key is pressed.

When a key is pressed we switch the costume to the right letter and then run the `texteffect` block.



By defining the `texteffect` block separately, it allows us to make all the changes in one place, instead of having to change them for every key individually.

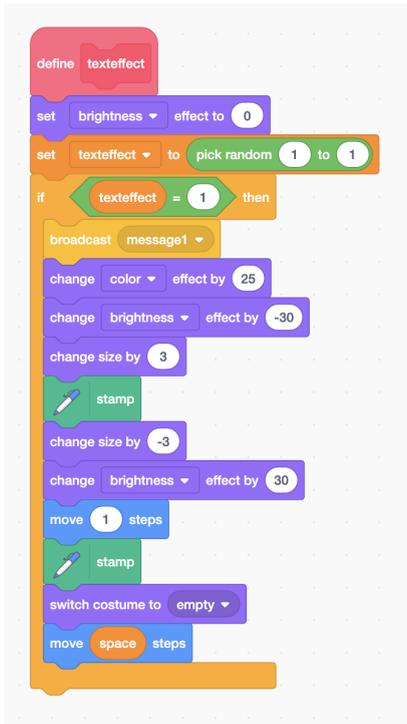
At the start of the block we randomly set a variable. Depending on what the variable is set to a different text effect is created. We've only set one at the moment.

The important part of each effect is that it:

- Stamps the costume with the letter we've selected.
- Changes the costume back to empty.
- Moves using the spaces variable.

In this effect we actually stamp a darker version of the sprite first. This creates a bit of a shadow around the letters which makes it easier to read.

See if you can add your own.



Make sure you increase the **set texteffect to** block to match the options you create.

Step 4

By now you might also have found the blocks that control what happens when the arrow keys and space key are pressed.

The up and down arrow keys change the size of the sprite. This has quite a large effect on the rest of the code. This is because whenever the letters change size, the space between them also has to change. This is where our space variable that we set at the beginning becomes useful.

By changing the variable here, it can keep the space the same everywhere it is needed.



Step 5

Let's take a look at some of the other sprites now.

Firstly, open up the *doodlers* sprite.

Can you work out what this sprite is doing?

We create a bunch of clones from this sprite. When it starts as a clone, it starts moving around. It is sensing for anything that isn't the same colour as the grey background.

When it finds something, like the edge or one of the letters, it starts drawing a line.

If you typed something and then left it for a while, you could watch the *doodlers* gradually grow all over your writing.

If you want the doodlers to grow more quickly try taking out the last `go to random position` block.

Step 6

The *mouse follower* sprite and *splat* sprite work together.

If you click and move the mouse you might have noticed it erasing the colours and letters. It is just drawing a grey line.

But it also does something similar to the *doodlers* when it touches anything that isn't the grey background. It creates a clone of the *splat* sprite.

The *splat* sprite just has a small block that it runs as a clone to give the effect of a mouse trail. See how you can adjust this code to create different effects.

Step 7

Finally we have the *placer* sprite. This one simply moves slowly down the stage. Whenever the *type* sprite resets, it moves to the *placer* sprite. See if you can design some other ways for it to move.

- Could it move one line at a time?
- Could it move to different locations?

Step 8

So those are the main components of our creative typing project.

- What new typing effects can you create?
- Can you change the way it sounds?
- Can you change the costumes of the type sprite to create your own font?
- Could you swap the letters to create a secret code?

Remember to share your project to the [Phoenix Scratch studio!](#)

We hope you enjoyed this animation activity and can't wait to see what you create.

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