

Projects

Fruit salad

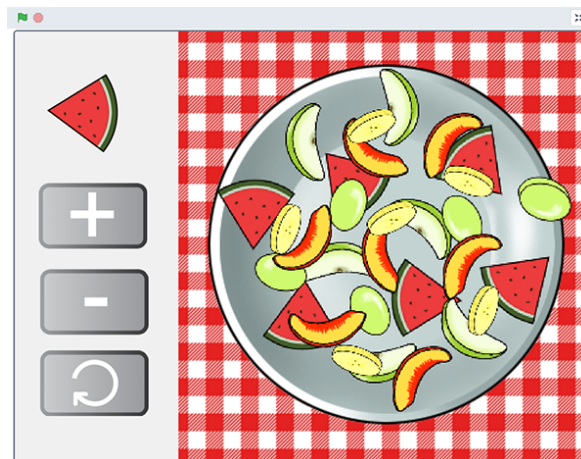
Create an app to make a fruit salad out of fruit of varying sizes and in different arrangements



Step 1 Introduction

In this project, you will create an app for family and friends to design their own fruit salad. Preparing food and creating art are great ways to relax – the Fruit salad app lets you make food art!

What you will make



What you will need

Hardware

- A computer or tablet capable of running Scratch

Software

- Scratch 3 (either online (<https://scratch.mit.edu/>), or offline (<https://scratch.mit.edu/download>))

Downloads

- If you are working offline, download the project starter file (<https://rpf.io/p/en/fruit-salad-go>).

Step 2 Stamp fruit

Scratch extensions offer additional blocks to use, such as the **Pen** extension blocks, which allow you to draw and stamp images. You will use the **Pen** extension blocks to create stamps of a fruit sprite.

A stamp is a copy of the sprite, which you cannot move or delete once you have stamped it.

First, open the Fruit salad starter project.



Online: open the starter project (<http://rpf.io/fruit-salad-on>) in Scratch.

Offline: open the project starter file (<http://rpf.io/p/en/fruit-salad-go>) in the Scratch offline editor. If you need to, you can download and install Scratch here (<https://scratch.mit.edu/download>).

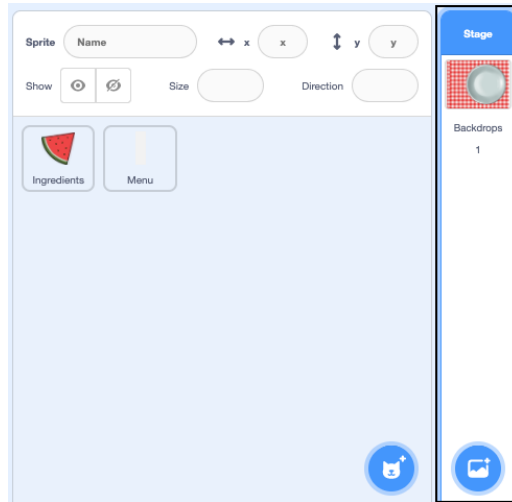
You will see a backdrop with a tablecloth and a bowl. There is a Menu sprite on the left-hand side of the Stage and an Ingredients sprite that has fruit costumes that you will be able to stamp onto the bowl.



The project does not have any code, so it does not do anything yet.

You need to add code so that every time you click or tap on the Stage, you create a stamp of one of the costumes in the Ingredients sprite at the location of your mouse pointer.

Select the Stage and then go to the Code tab.



The Stage needs a block to detect when it is clicked.

Add a **when stage clicked** block:



Now, the Stage needs to let the Ingredients sprite know that it should add an ingredient to the bowl.

The **broadcast message1** block sends a message that any sprite can receive.

Add a **broadcast message1** block:



broadcast message1 ▼

Click on **message1** and choose **New message** and enter **add**.

Your code should look like this:



Now, select the Ingredients sprite and go to the Code tab.



Add a **when I receive add** block:

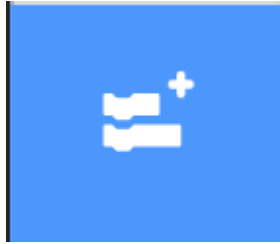


when I receive add ▼

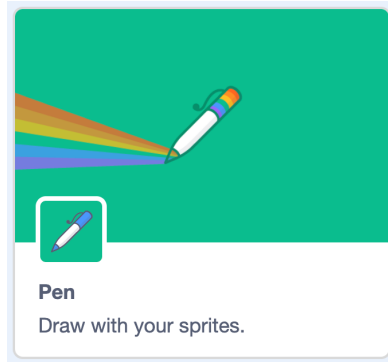
All the code under this **Events** block will now run when you click on the Stage.

Now, you need to add the **Pen** extension blocks.

Click the Add Extension button.



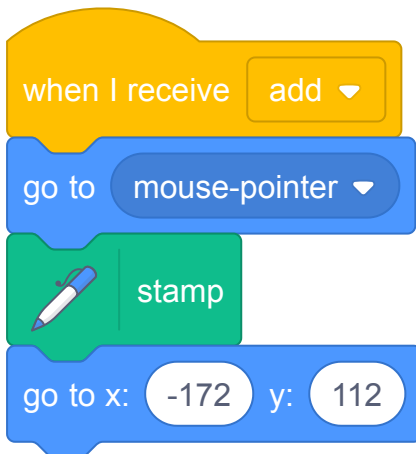
Select the Pen extension.



Then, in the Code tab, go to the Pen menu and add the **stamp** block:



In the Ingredients sprite's code, below the **when I receive add** block, add three blocks to tell the sprite to **go to** the location of the **mouse pointer**, create a **stamp**, and then return to (**go to**) the starting position within the menu:



Tip: The coordinates of the **go to x: y:** block will be set to the current location of the Ingredients sprite already, so you should not need to change them.

To try out your project, click on the bowl to add pieces of fruit.



The Ingredients sprite moves from the menu to the mouse pointer, creates a stamp, and then moves back to the menu. This happens quickly, so you don't see it move!

You will not be able to click on the menu to create a stamp because the menu stops you doing this. The **add** message is only broadcast if you click on the Stage.

If you add a piece of fruit that overlaps the Stage, the stamp will automatically go behind the menu.

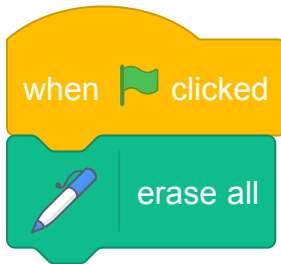
Tip: In all projects, stamps go on top of backdrops, but underneath sprites.

You need to ensure that the bowl is clear at the start.

Add code to the Ingredients sprite to clear all the stamps from the bowl **when green flag clicked**.



In the Ingredients sprite's Code tab, add a **when green flag clicked** block. Then, from the **Pen** blocks menu, add an **erase all** block:



Save your project

Step 3 Choose other fruit

To make your fruit salad more interesting, you might want to add other types of fruit. The Ingredients sprite has other fruit costumes to choose from.

In the Ingredients sprite, create a new script beginning with **when this sprite clicked**. Select the **next costume** block to switch to the next costume:



when this sprite clicked

next costume

Now, try out your project. Click on the Ingredients sprite until you see the fruit that you want to add, then click on the bowl as many times as you would like to add that fruit. You cannot move a stamp once you have placed it, so think carefully!

Next, choose a different fruit, and stamp that fruit too.

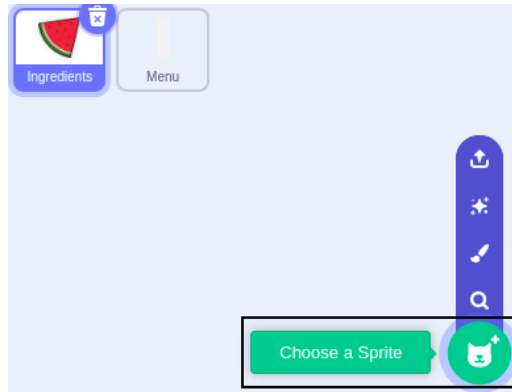


Save your project

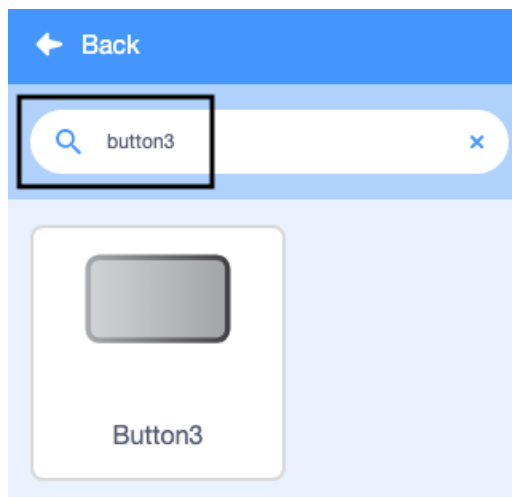
Step 4 Add a Grow button

Not all pieces of fruit are the same size. In this step, you will add a button to grow your ingredients before you add them.

To add a button sprite, click on Choose a Sprite.



Type **Button3** into the search bar. Select Button3.



You will now see the button on the Stage. You need to move the button off the bowl, otherwise someone may eat it!

Drag the button from the bowl into position in the menu area on the left-hand side of the Stage.

Change the name of the Button3 sprite. Click on the dialogue box that shows the sprite's name. Replace **Button3** with the new name, **Grow**.



Click on the Grow sprite's Costumes tab.



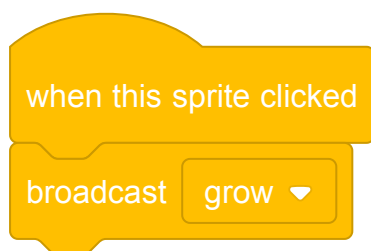
Choose the Text tool and select any Fill colour you like.

Add a + symbol to your button. To do this, press the + key on your keyboard.

Use the blue handles around the button to alter the size of the + symbol. Make sure that the + symbol fits within the button and can be seen clearly.

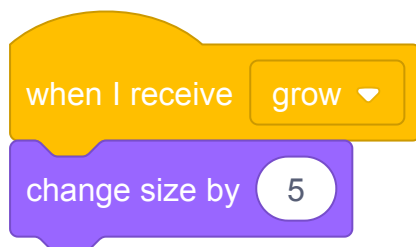
Now, you need to add some code to the Grow sprite.

Switch back to the Grow sprite's Code tab and add the following code to **broadcast** a **grow** message **when the sprite is clicked**:



Now, you need to add some code to the Ingredients sprite so that it can receive the message to grow from the Grow sprite.

Select the Ingredients sprite and add the following code to enable it to grow:



Set the Ingredients sprite back to the original size each time you choose a new fruit costume.

The Ingredients sprite is set to a starting size of 25%. Find your existing **when this sprite clicked** script and add a **set size to** block with the value 25% to reset the size each time the costume changes:



when this sprite clicked

set size to 25 %

next costume


Run your program. Make sure that you can grow your pieces of fruit before you stamp them and check that they return to the original size each time you choose a new fruit costume.



Save your project

Step 5 Add a Rotate button

At the moment, each piece of fruit faces in the same direction, which will limit the design that users can create with your fruit salad app. To improve your app, you will add a Rotate button that users can click to rotate the ingredient before they stamp it.

Create a Rotate button sprite. To do this, select another Button3 sprite. 

Drag the new button to below the Grow button in the menu.

Rename it **Rotate**.

Click on the Rotate sprite's Costumes tab. 

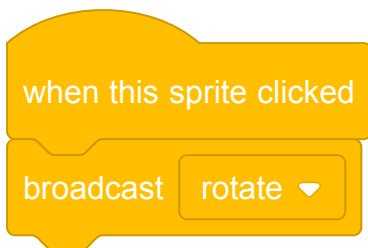
Select the Brush tool.

Adjust the Fill colour.

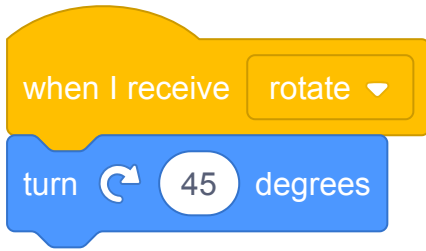
Draw an arrow on the button.

Tip: If you make a mistake, click on Undo and then have another go.

Now, add a new script to the Rotate sprite: **when the sprite is clicked**, it needs to **broadcast** a **rotate** message: 



Add a new script to the Ingredients sprite: use a **when I receive rotate** block and a **turn right** block to rotate the Ingredients sprite when it receives a message to rotate.



You do not have to rotate the ingredients 45 degrees each time the Rotate button is clicked. You can choose any angle of rotation.

Try your project again. Choose an ingredient, rotate it, stamp it as many times as you like, and keep adding ingredients to create a fruit salad. What patterns can you create with fruit?



Save your project

Step 6 Add more

Customise your project. You could make another button that will shrink the ingredients or a button to change the colour of the tablecloth.



Perhaps you could create more fruit costumes to create even more varieties of fruit art.

Step 7 Share

Remember you can share your completed Scratch project with your friends and family. To do this, follow the instructions below:



Share your Scratch project

Please make sure that you do not share any personal information about yourself when sharing your Scratch projects.

- Give your Scratch project a name.
- Click the Share button to make the project public.
- If you like, you can add instructions in the Instructions box, to tell other people how to use your project.
- You can also fill in the Notes and Credits box: if you have made an original project, you can write some short comments, or if you have remixed a project, you can credit the original creator.
- Click the Copy Link button to get the link to your project. You can send this link to other people by email or text, or on social media.

Scratch provides the ability to comment on your own and other people's projects. If you do not want to allow people to comment on your project, you should turn off commenting. To turn off commenting, set the slider above the Comments box to Commenting off.

If you are in a club, why not demonstrate your project to friends and peers?

Step 8 What next?

In this project, you have:

- Used **broadcast** and **when I receive** blocks so that the sprites can react to button presses
- Used the **Pen** extension blocks to **stamp** sprites to create patterns
- Added code to the Stage

If you are following the Look after yourself (<https://projects.raspberrypi.org/en/pathways/look-after-yourself>) projects, then try out the next project, Relax and stretch (<https://projects.raspberrypi.org/en/projects/relax-stretch>).

Did you enjoy the project? Have you spotted a mistake? Please click the Send feedback button below and let us know!

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View project & license on GitHub (<https://github.com/RaspberryPiLearning/fruit-salad>).