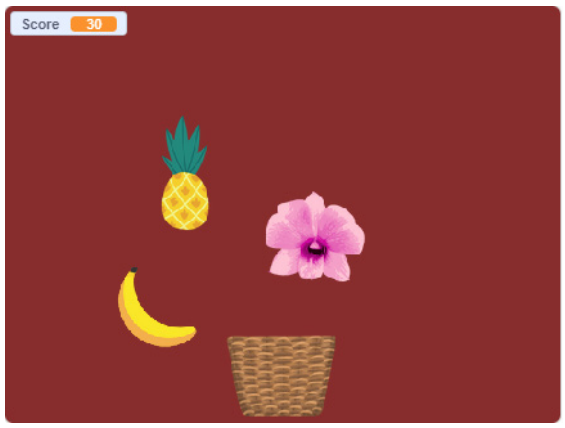
CODE OF ORIGIN

Qld produce

Create a catch game that teaches people about what is produced in Queensland.

INTRODUCTION



What you will need

HARDWARE

A computer capable of running Scratch 3

SOFTWARE

Scratch 3:
either online
rpf.io/scratchon
or offline
rpf.io/scratchoff

What you will learn

- How to create falling objects
- How to add a score
- How to increase size and speed based on variables

Starter Project

https://scratch.mit.edu/projects/756042436/

Additional notes for educators

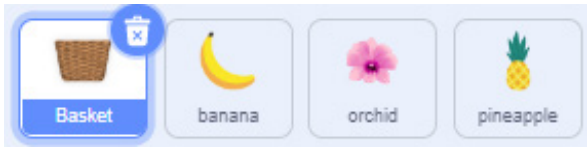
Here is a link to the completed project
https://scratch.mit.edu/projects/754743752

Read this blog post for information about the Code of Origin project by Code Club Australia.

STEP 1 - BASKET

Open the starter project -https://scratch.mit.edu/projects/756042436/

Select the basket sprite



Start with the event when the flag is clicked. Set y to -140 so that it will always travel along the bottom. Set size to 20%.

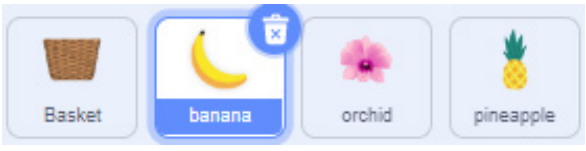
Let's code how the player controls the basket. Start with the event when left arrow is pressed. Add blocks to point in direction -90 and move 10 steps.

Now for the opposite direction. Start with the event when right arrow is pressed. Add blocks to point in direction 90 and move 10 steps.

Test your code. Your basket should move from left to right, controlled by the arrow keys.

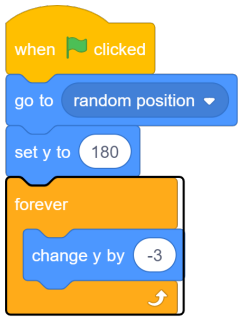
STEP 2 - FALLING PRODUCE

Select the banana sprite



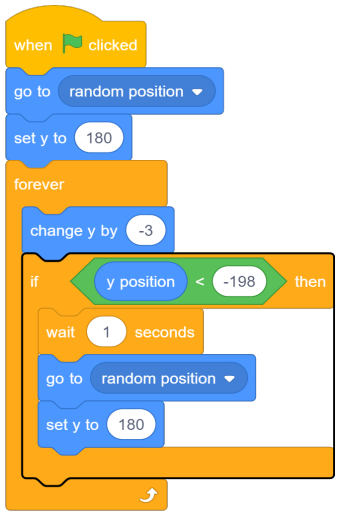
First we need to add code for the fruit to start somewhere along the top. Start with the event when the green flag is clicked. Add blocks to go to random position and to set y to 180.

Add a forever block that will change y by -3. This will make the banana constantly fall.

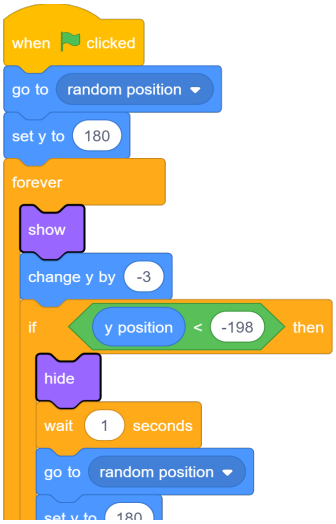


Test your code. The banana should 'fall' to the bottom of the screen.

When the banana reaches the bottom, we need it to look like another one falls from the top. Inside the forever block and an if then block, and code it if y position is less than -195. If the banana goes below this it needs to wait 1 second, go to a random position and set y to 180.



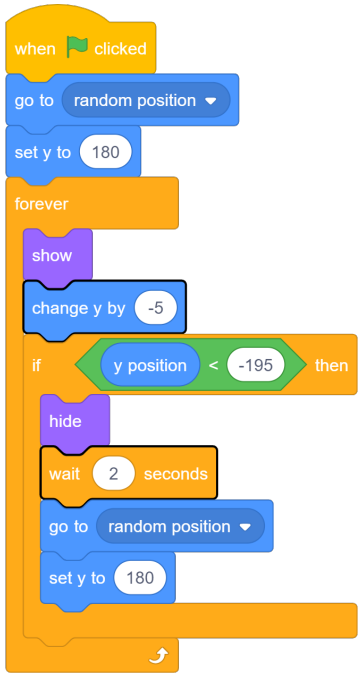
Test your code. Can you still see the top of the banana when it is 'waiting'? Lets add show and hide buttons so that when it reaches the bottom it hides, and when it starts at the top it shows.



Test your code. The banana should fall to the bottom, disappear, and then reappear at the top of the screen.

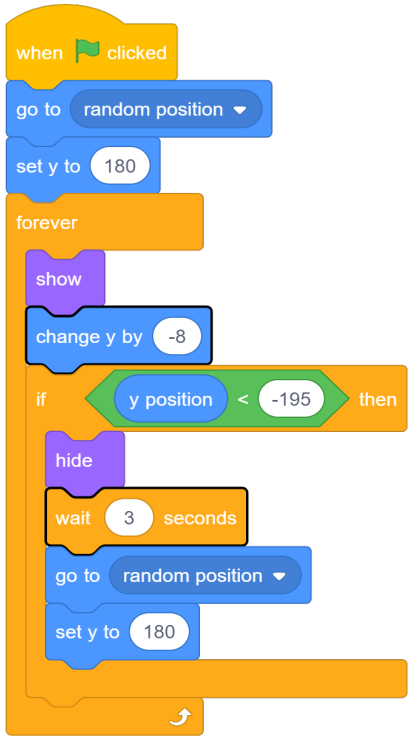
Copy the code onto the orchid and pineapple. (Drag the code until it hovers over the sprite you are copying to)
On the orchid make these changes -

- change y by -5 this changes the speed that it falls
- wait 2 seconds



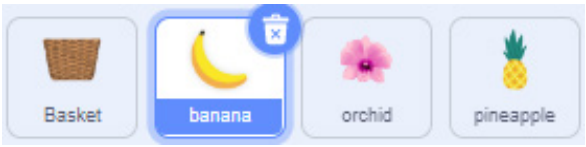
On the pineapple make these changes -

- change y by -8
- wait 3 seconds



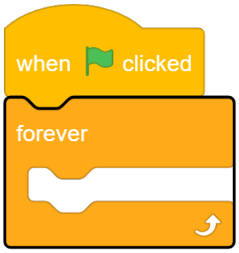
Test your code. All 3 sprites should be falling at different speeds and different times.

Select the banana sprite

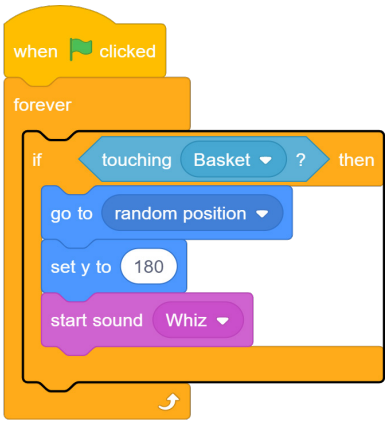


Let's code how the basket will catch the produce.

Start with the event when the green flag is clicked and then add a forever block.

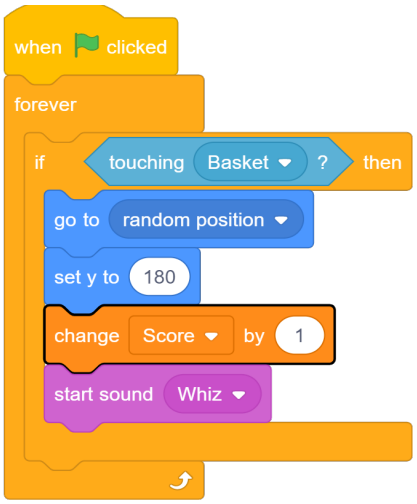


When the banana touches the basket we need it to look like it has been caught. Inside the forever block and an if then block, and code it if touching the basket then it goes to a random position with y set to 180. Go into the sound tab and choose a sound. Add a block to plays the sound.



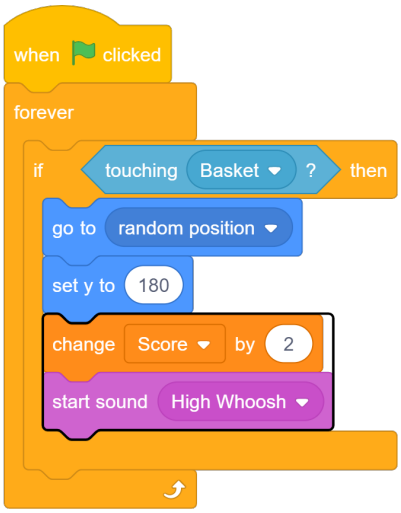
Test your code. The banana should disappear as soon as it touches the basket.

Let's add in a scoring system. Make a new variable called score. Add a block the change score by 1.



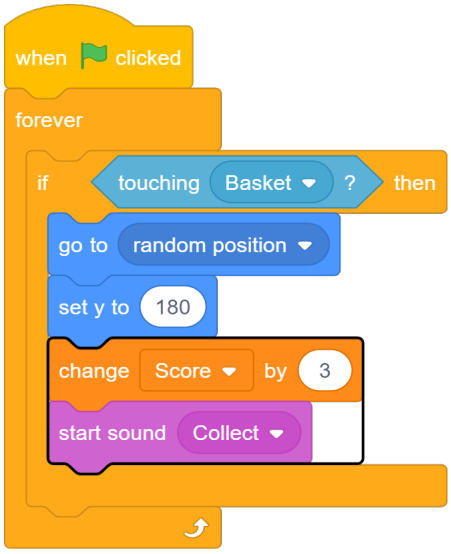
Copy the code onto the orchid and pineapple. (Drag the code until it hovers over the sprite you are copying to)
On the orchid make these changes -

- choose a new sound
- change score by 2



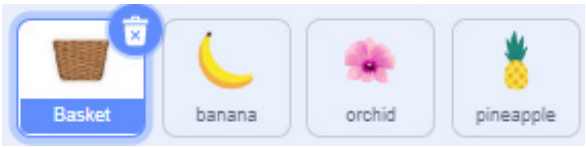
On the pineapple make these changes -

- choose a new sound
- change score by 3

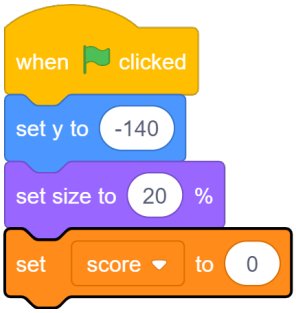


Test your code. You have added a score element. Let's make sure we set the score to 0 when the green flag is clicked.

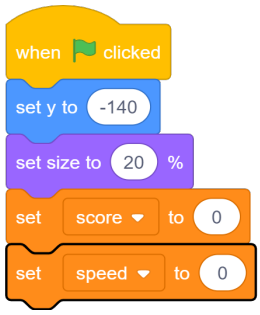
Select the basket sprite



Add a block onto your algorithm that sets the score to 0

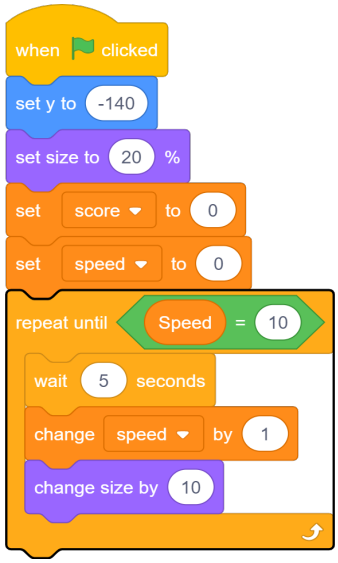


Next we will add some blocks to slowly make the basket move faster. Start by making a new variable called speed. Add a block that sets the speed to 0.



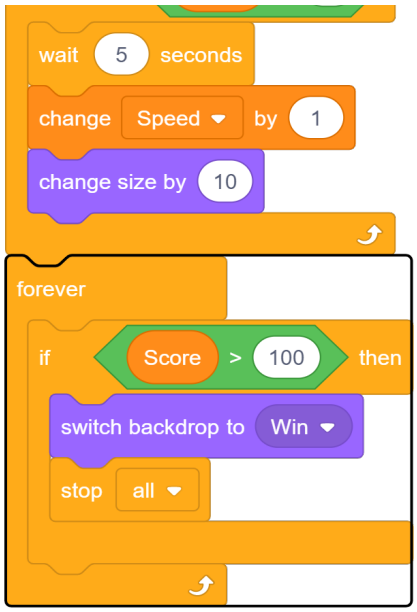
Add a control block of repeat until. We want the speed to slowly increase until it equals 10. Inside add a wait 5 seconds block so it will slowly increase. Then add a change speed by 1 block.

Let's slowly make the basket grow bigger too by ading a change size by 10 block.

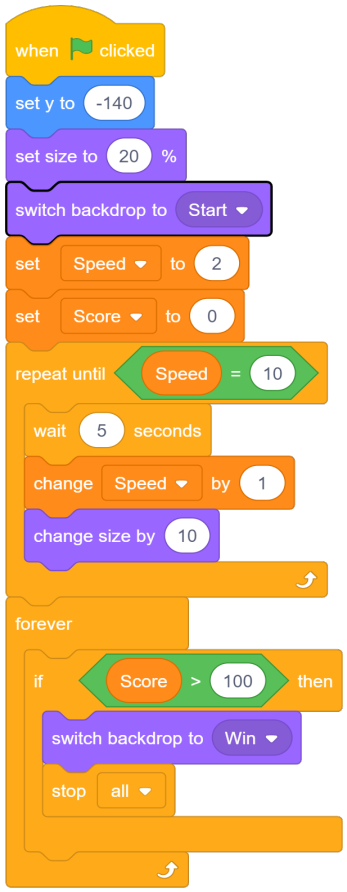


Test your code. The game should play and this time you will notice the increase in speed and size of the basket as the game progresses. Finally lets create the end of the game when the player reaches a score of 100.

Add a forever block to the end of the algorithm. Inside add an if then block that runs until the score is larger than 100. Inside the if then block add a block to switch the backdrop to Win and a block that will stop all.



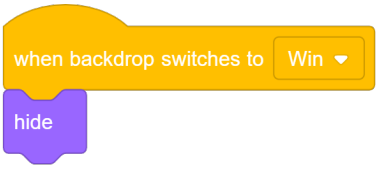
Now that we have changed the background at the end of the game, we need to make sure when the green flag is clicked we start with the game background. Add a block to the top of the algorithm to switch backdrop to start.

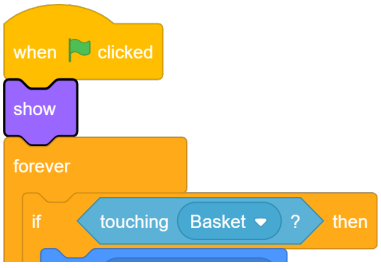


Test your code. Your game is complete. Your task now is to add hide and show buttons to each sprite so that they hide when the backdrop is switched to Win, and they show when the green flag is clicked. Some hints are below.

The new event will need to be placed on every sprite.

The basket and produce will need the show button added in to an algorithm at the beginning.





Challenges:

Create backdrops with more detail

The backdrop is quite simple at the moment. Can you add detail to it? Be careful your detail or changes don't make it too hard for the player to see the produce falling.

Produce

Can you increase the difficulty of catching the produce. Perhaps your game will start with large produce that are easy to catch and they will slowly get smaller as the basket gets bigger.

Multi-level game

Can you add in a second level to the game? Queensland is famous for many other things that could be added into a second level.

- mango
- sugar cane
- apple

Congratulations!

You have created a game that will help others learn about Queensland.

Which state or territory will win the Code of Origin?