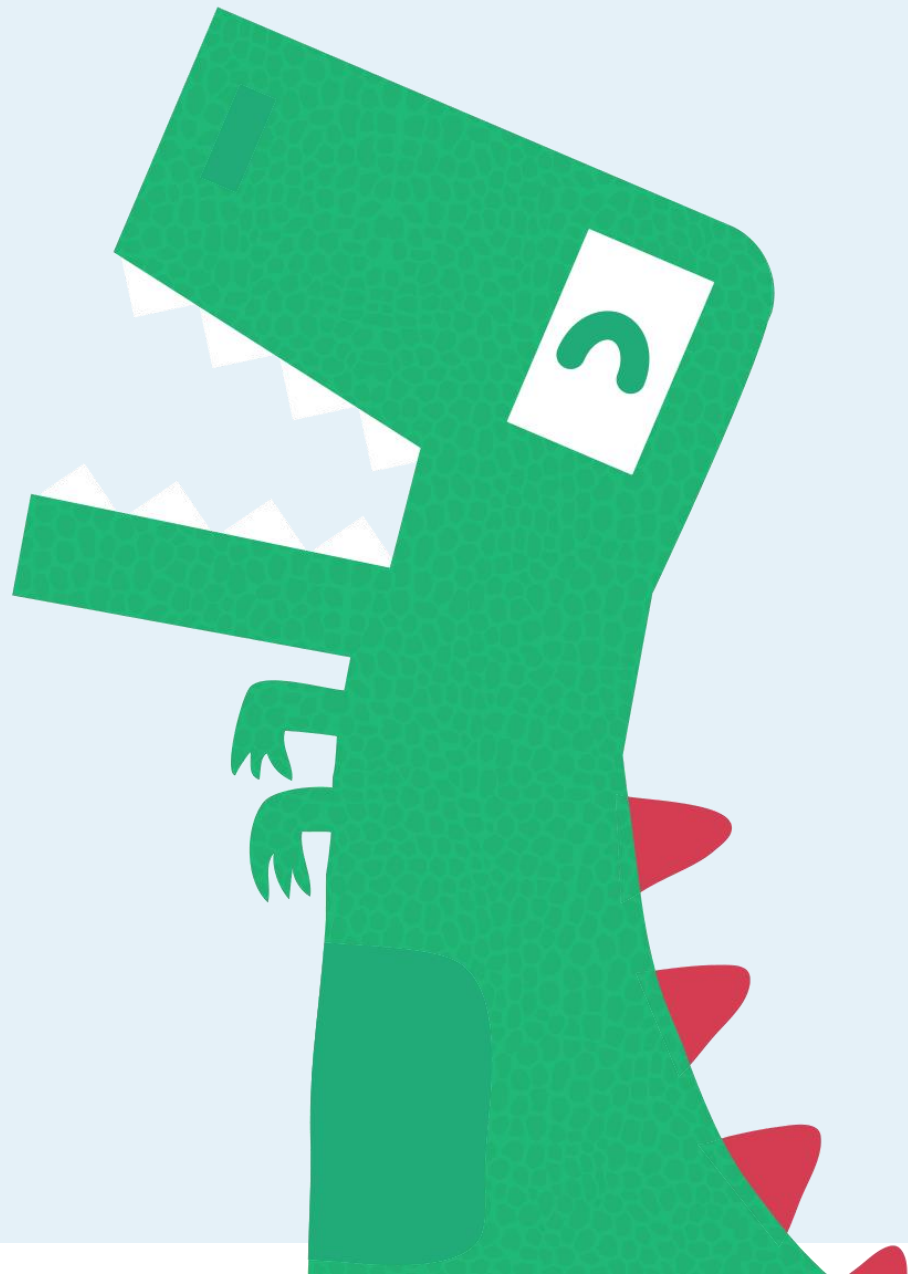


Student workbook

Snowball scramble

Code Playground



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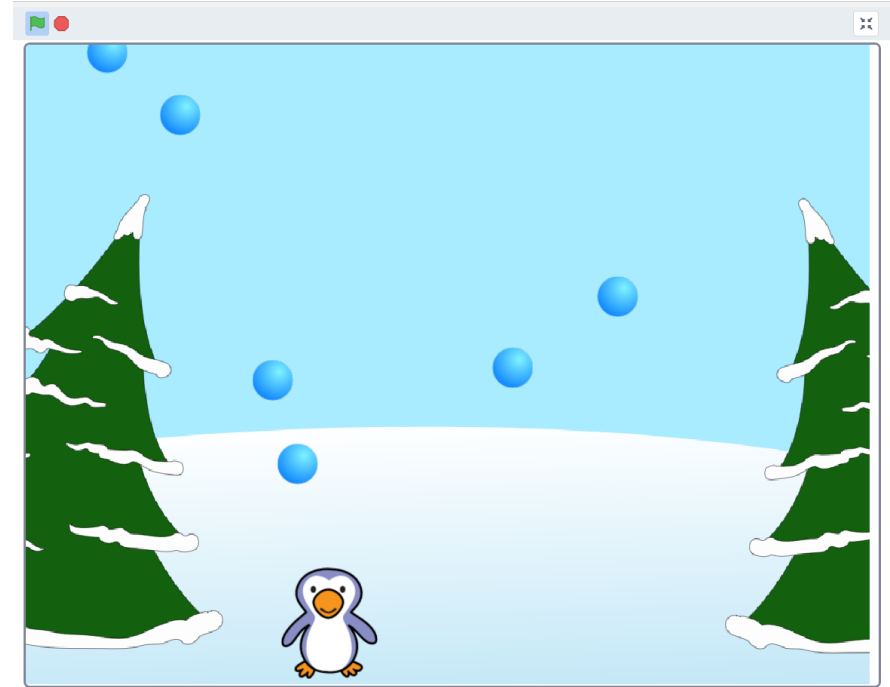
Snowball scramble

Code Playground Live

The penguin is trying to avoid the snowballs being thrown their way, can you help? Stay out of the line of fire and get the chance to throw one back! In this workbook we take you through making the full game.

This project is designed for Scratch 3.0 and will show you how to clone your sprites to keep things neat and tidy.

Hope you enjoy the project!

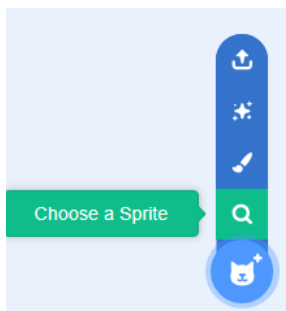
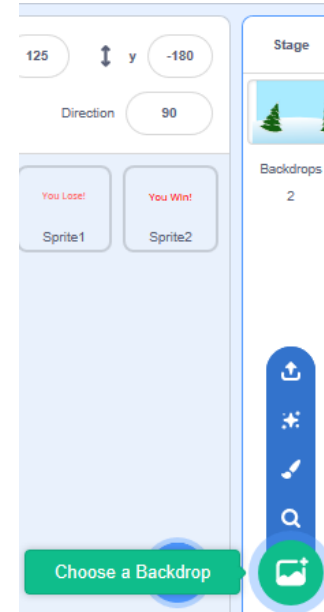


Snowball scramble

Code Playground Live

Step 1

You'll need two backdrops for this project. Choose them from the backdrop library to use as your stage. We've used 'Winter' and 'Slopes'.



Step 2

Let's choose your character, first click on 'Choose a Sprite' to go to the sprite library. From there select 'Penguin 2' as your first character

Snowball scramble

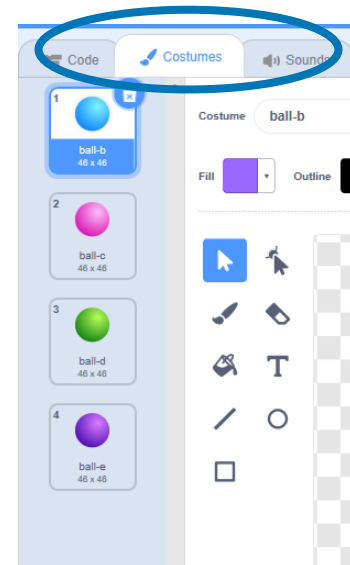
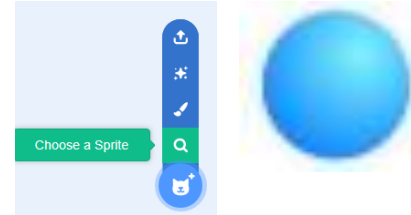
Code Playground Live

Step 3

Next click 'Choose a Sprite' again and this time select 'Ball'. We'll be using this sprite as our snowball.

Click on the costumes tab to change the costumes. We want to use the blue ball, so you can click and drag the different colours so that the blue costume is at the top, or delete any colours we won't be using.

Now you're ready to start coding!



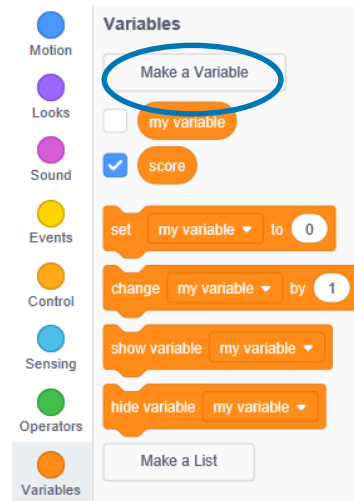
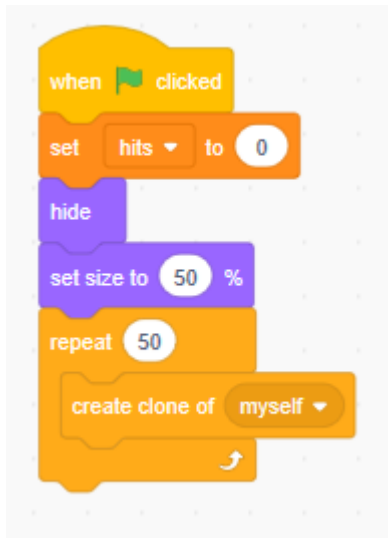
Snowball scramble

Code Playground Live

Step 4

The aim of the game is to not get hit by the flying snowballs, so let's set up a variable called 'hits'. This will mean that the game will keep track of how many times the penguin gets hit by a snowball.

Use the orange Variables tab, select 'Make a Variable' and call it 'hits'.



Start by adding this script to the ball sprite. We can clone our sprite 50 times so that we don't need to code or duplicate 50 snowball sprites

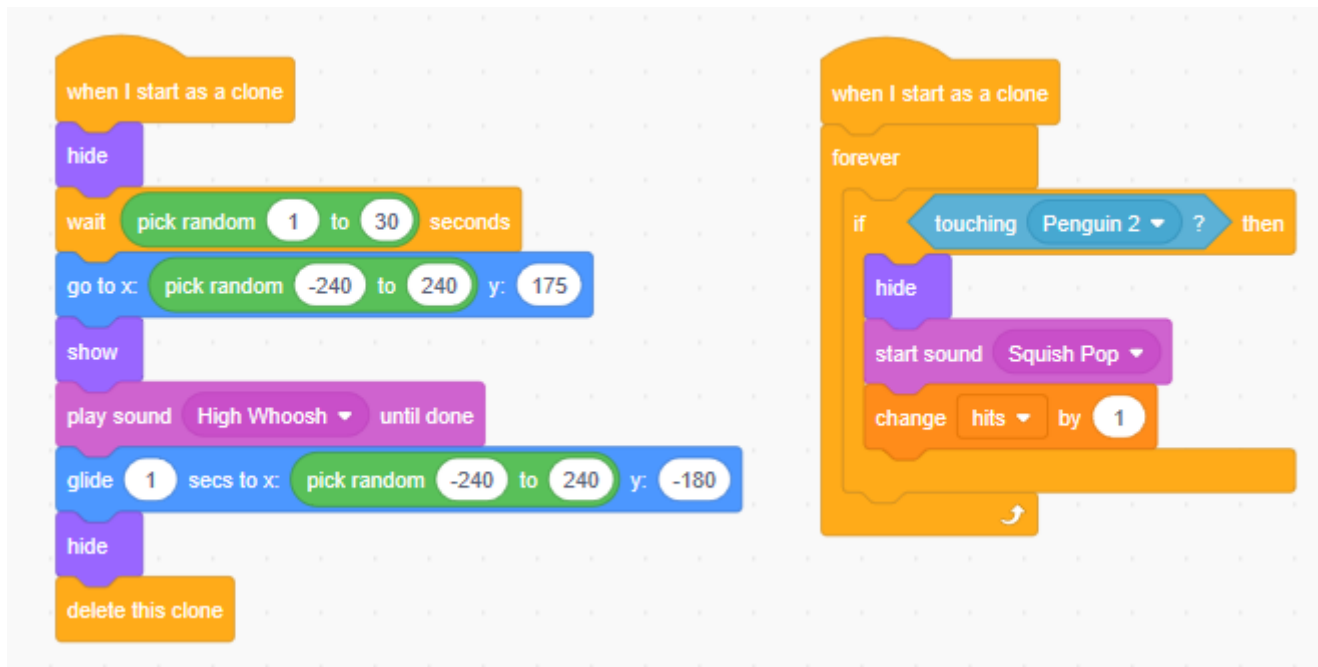
Snowball scramble

Code Playground Live

Step 5

Next we need to set up what happens to our cloned sprites.

The code on the left tells the snowballs how to move, and the code on the right sets up what happens when a snowball hits the penguin.



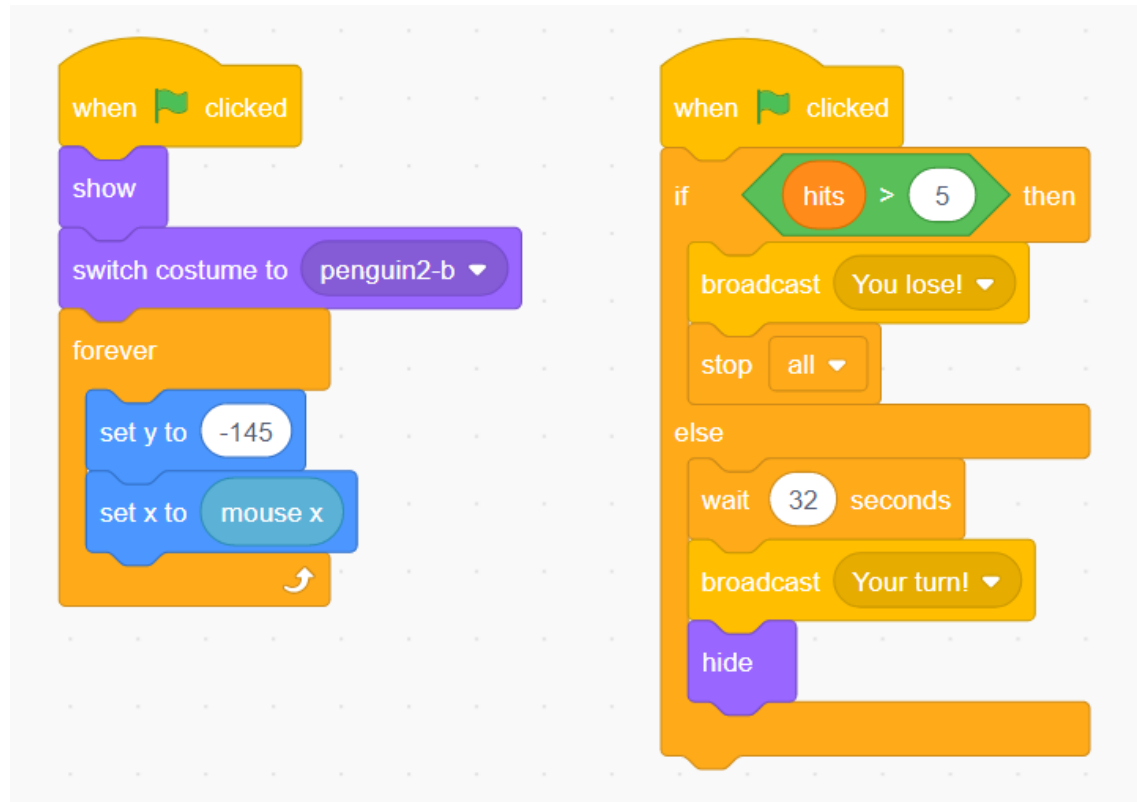
Snowball scramble

Code Playground Live

Step 6

Now to make our penguin move and set up what happens when it gets hit too many times.

The penguin is controlled by the mouse



```
when clicked
  show
  switch costume to penguin2-b
  forever
    set y to -145
    set x to mouse x
  if hits > 5 then
    broadcast You lose!
    stop all
  else
    wait 32 seconds
    broadcast Your turn!
  hide
```

The image shows two columns of Scratch code blocks. The left column contains a 'when clicked' block, a 'show' block, a 'switch costume to' block with 'penguin2-b' selected, and a 'forever' loop containing 'set y to -145' and 'set x to mouse x' blocks. The right column contains a 'when clicked' block, an 'if hits > 5 then' block with 'broadcast You lose!' and 'stop all' blocks, an 'else' block with 'wait 32 seconds', 'broadcast Your turn!', and 'hide' blocks.

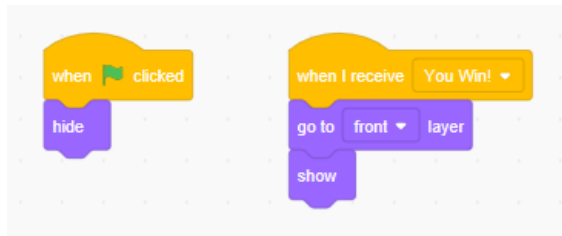
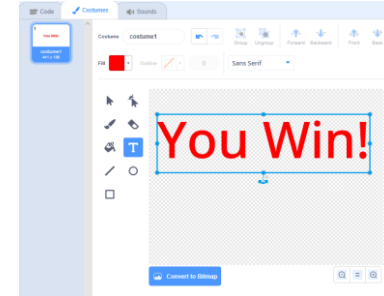
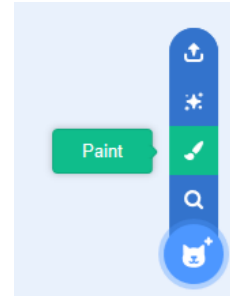
Snowball scramble

Code Playground Live

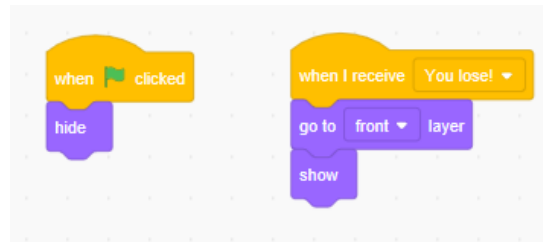
Step 7

Now we need to create two new sprites using the Paint function. Use the text editor to make sprites that say 'You Win!' and 'You Lose!'.

Next, add these scripts to your new sprites



Script for 'You Win!'



Script for 'You Lose!'

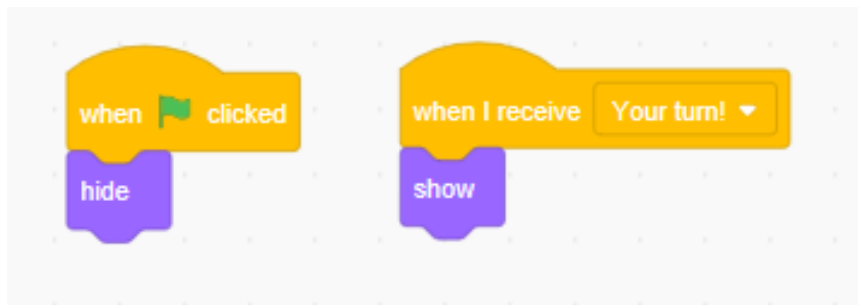
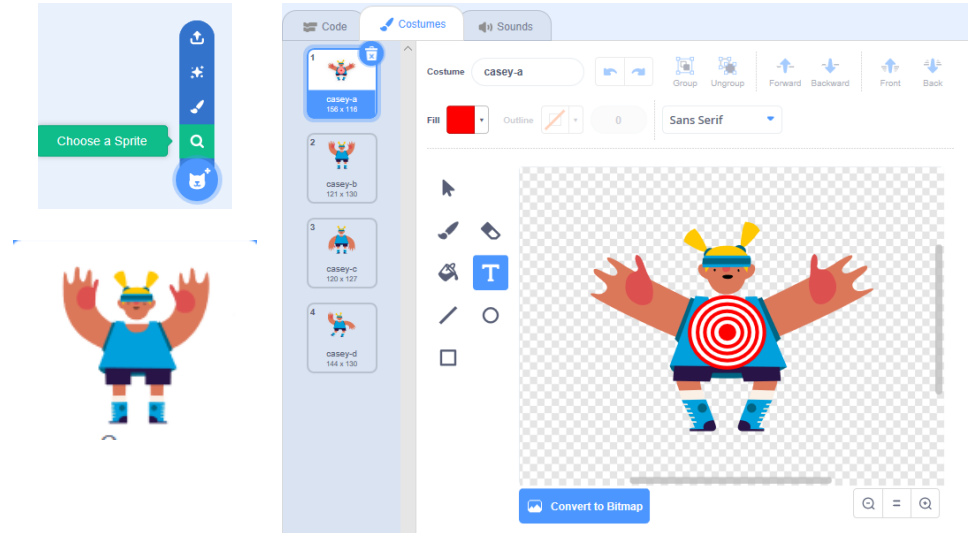
Snowball scramble

Code Playground Live

Step 8

First, let's add a new sprite from the library. We've used 'Casey' as our target, but you can choose any sprite.

Use the costume editor to add a bullseye target.



Next, add these scripts to your target sprites

Snowball scramble

Code Playground Live

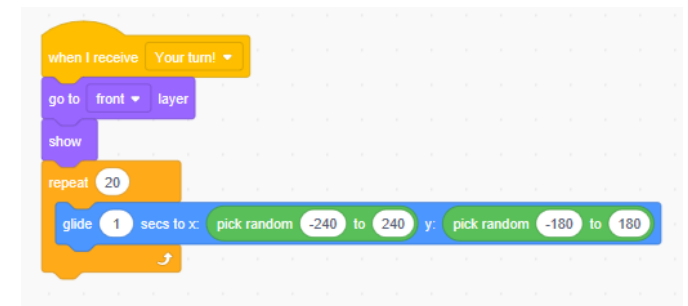
Step 9

We need to add some more code to our snowball to set up what it does in part 2 of our game.

The snowball should move around the screen randomly, and the player has to hit the space key to throw the snowball at the target. Add these scripts to your ball sprite to set this up.



```
when space key pressed
  forever loop
    if touching color red then
      broadcast You Win!
      stop all
    else
      broadcast You lose!
      stop all
```



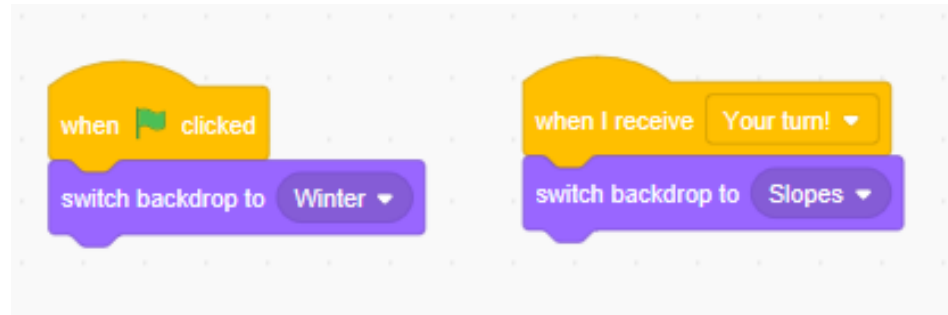
```
when I receive Your turn!
  go to front layer
  show
  repeat 20
    glide 1 secs to x: pick random -240 to 240 y: pick random -180 to 180
```

Snowball scramble

Code Playground Live

Step 10

Finally, we need to add some code to stage to make sure that we always have the right backdrop.



Snowball scramble

Code Playground Live

Level up!

- Can you create a countdown timer so you can see how long the penguin needs to dodge the snowballs?
- Can you add a special snowball that the penguin needs to catch?
- Can you create an introduction to the game complete with instructions?
- Can you add in a beginner or expert level?

Notes

Code Playground