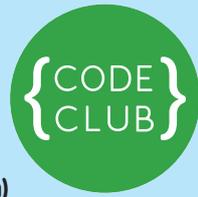


Level

2

Christmas Capers



A festive project created for Code Club by Paul Finn (@PAFinn)

Introduction:

In this project we'll create a game with scrolling backgrounds, scoring and a festive game over screen.

A disaster in a toy factory has sent presents flying into the sky, help Rudolf to save Christmas by catching the presents!



Activity Checklist – Follow these **INSTRUCTIONS** one by one



Test Your Project – Click on the green flag to **TEST** your code



Save Your Project – Click on this to **SAVE** your work

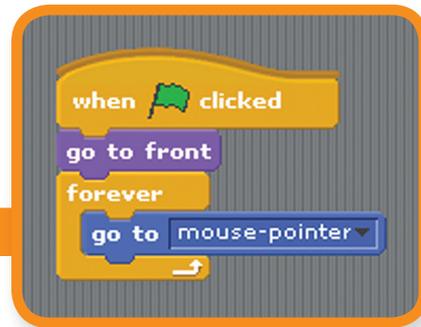


STEP 1: Make Rudolph fly

Keep track of your progress by ticking off the boxes below:

Activity Checklist

1. **Start a new Scratch project.** Delete the cat by **right-clicking** it and selecting **Delete**
2. Replace the background with **SkyBackground.png**.
3. Use the **new sprite from file** button to add the Rudolph sprite to the project (use the **Rudolph.png** file)
4. Rename the sprite to **Rudolph**.
5. **Make Rudolph follow the mouse by using the following script:**



Test Your Project

Click the green flag and move the mouse, does Rudolph follow the mouse?

6. To make the game more interesting we will add some moving snowy hills to make it look like Rudolf is flying. Use the **new sprite from file** button to add the **Snow sprite** to the project (use the **SnowHills.png** file).
7. Rename the sprite to **Snow1**.

Keep track of your progress by ticking off the boxes below:

8. Create a new variable by clicking **variables** and **make a variable**. Call it **ScrollX** and make it for all sprites, then uncheck the box next to it to remove it from the stage. This will be used to control how the hills move.
9. Add the following script to make the hills move:

```

when green flag clicked
  set y to 0
  forever
    set x to ScrollX
    change ScrollX by -1
    if ScrollX < -480
      set ScrollX to 0
  
```


Test Your Project

Click the green flag, do the hills move? What happens as the hills move to the side of the screen?

10. Let's fix the issue with the snowy hills flickering when they reach the right of the screen. Add more hills to the stage use the **new sprite from file** button to add the Snow sprite to the project again (use the **SnowHills.png** file).
11. Rename the sprite to **Snow2**.
12. Add the following script to the Snow2 sprite to allow the 2nd set of hills to follow closely behind the first:

```

when green flag clicked
  set y to 0
  forever
    set x to ScrollX + 479
  
```


Test Your Project

Click the green flag, do the hills move? Has the issue with the flickering trees been fixed?



SAVE YOUR PROJECT



STEP 2: Falling Presents

Keep track of your progress by ticking off the boxes below:

Activity Checklist

1. We now need to add in the presents for Rudolph to collect. Use the **new sprite from file** button to add the Present sprite to the project (use the **Present.png** file).
2. Rename the sprite to **Present**.
3. **Create a new variable** by clicking **variables**. Call it **Stop** and make it for this sprite only, then uncheck the box next to it to remove it from the stage. This will be used to control when the present should be removed from the game.
4. **Create another new variable** and call it **Speed** and make it for this sprite only, then uncheck the box next to it to remove it from the stage. This will be used to control the speed that the present falls down the screen.
5. Add the following script to the **Present** sprite to allow it to fall from the sky. Note that we will use **pick random** to make the present appear in a different place each time.
6. By using the **touching [Rudolph]** command we can make the present disappear when touched, we can use this later to keep a score.

```

when clicked
  forever
    set Stop to 0
    go to x: pick random -230 to 230 y: pick random 50 to 170
    set Speed to -1
    repeat until Stop = 1
      change y by Speed
      if y position of Present < -160
        set Stop to 1
      if touching Rudolph?
        set Stop to 1
  
```

Test Your Project

Click the green flag, do the presents fall from the sky? Do they disappear when Rudolph touches them or they hit the ground?

Keep track of your progress by ticking off the boxes below:

7. Let's make the game more interesting by changing the colour of the presents each time they fall. Do this by using the **change colour** command.

8. Change the speed of each present by replacing set **Speed to -1** with the **pick random** command, try different values such as **-10 to -1**. Your script should now look like this.

```

when clicked
  forever
    set Stop to 0
    go to x: pick random -230 to 230 y: pick random 50 to 170
    change color effect by pick random 1 to 100
    set Speed to pick random -10 to -1
    repeat until Stop = 1
      change y by Speed
    if y position of Present < -160
      set Stop to 1
    if touching Rudolf?
      set Stop to 1
  
```

Test Your Project

Click the green flag, do the presents fall at different speeds and colours?

STEP 3: Scoring and sound effects

Keep track of your progress by ticking off the boxes below:

✓ Activity Checklist

1. Let's change our script to keep track of a score within the game. We can then use this later to work out when the game over message should appear.
2. Create a new variable by clicking **variables**. Call it **Score** and make it for all sprites. Leave this variable ticked so it appears on the screen.
3. Change the script behind the **Present** sprite to look like this. Note we have both added sound effects with the **play drum** command and also **change [score] by 1** when Rudolph touches the present.

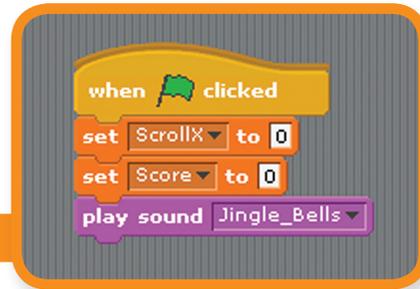
```

when clicked
  forever
    set Stop to 0
    go to x: pick random -230 to 230 y: pick random 50 to 170
    change color effect by pick random 1 to 100
    set Speed to pick random -10 to -1
    repeat until Stop = 1
      change y by Speed
      if y position of Present < -160
        play drum 57 for 0.2 beats
        set Stop to 1
      if touching Rudolph?
        play drum 39 for 0.2 beats
        change Score by 1
        set Stop to 1
  
```

4. Let's add some music to the game, import the sound file **Jingle_Bells.mp3** to the **Stage**.

Keep track of your progress by ticking off the boxes below:

5. Add the following script to the **Stage**, this will **set our score to 0** when the game is started. It will also play Jingle Bells while the game is being played.



```

when green flag clicked
  set ScrollX to 0
  set Score to 0
  play sound Jingle_Bells
  
```

Note, if at first the music sounds 'choppy' save your project, close Scratch and then open your project again.

Test Your Project

Click the **green flag**, does the score change when Rudolph touches a present?



SAVE YOUR PROJECT



STEP 4: Game over

Keep track of your progress by ticking off the boxes below:

✓ Activity Checklist

1. Let's change our script to keep track of a score within the game. We can then use this later to work out when the game over message should appear.

2. Change the script on the **Stage** so when the **Score reaches 10** we will **broadcast** a **GameOver** message.

```

when clicked
  set ScrollX to 0
  set Score to 0
  play sound Jingle_Bells
  forever
    if Score = 10
      broadcast GameOver and wait
  
```

3. We now need to add in our GameOver message. Use the **new sprite from file** button to add the **GameOver** sprite to the project (use the **GameOver.png** file).

4. Rename the sprite to **GameOver**.

5. Add the following script to the **GameOver** sprite. This will **hide** the picture when the game starts and **show** it when the GameOver message is received.

```

when clicked
  hide

when I receive GameOver
  go to front
  show
  stop all
  
```

🚩 Test Your Project

Click the green flag, does the score change when Rudolph touches a present?



SAVE YOUR PROJECT



Keep track of your progress by
ticking off the boxes below:

Challenge: Make the game harder

Can you make the presents wobble on their way down the screen?

Can you add more than one present to the game at the same time?

Change the game over message to appear after 20 presents are collected.

Can you reduce the score by 1 when a present hits the ground?

Well done you've finished, now you can enjoy the game.

Have a very Merry Christmas!



Thanks Rudolph, Happy Christmas!