

Level

2

Desert Race

{code
club}

Introduction:

This game is a two player game where you race a parrot and a lioness across the desert. Each player has to press a key as fast as they can to move their animal, the first one to reach the edge of the screen wins.



Activity Checklist

Follow these **INSTRUCTIONS** one by one



Test Your Project

Click on the green flag to **TEST** your code



Save Your Project

Make sure to **SAVE** your work now

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

STEP 1: Create the scene and add the sprites

✓ Activity Checklist

1. Select the Stage, and add the **Nature/desert** backdrop.
2. Add a new sprite, select the Lioness sprite that you will find in the Animals folder.
3. Add another sprite: select the Parrot sprite that you will find in the Animals folder. Shrink it so that it is roughly the same size as the lioness sprite.

STEP 2: Make the lioness and the parrot move

We want the sprite to move when you press a key.

✓ Activity Checklist

1. First select the lioness sprite and set it to **move (4) steps** when you press the 'L' key.



2. Next, select the parrot sprite and set it to **move (4) steps** when you press the 'A' key.



🚩 Test Your Project

Click the green flag

Do your lioness and parrot move across the screen when you press the 'A' and 'L' keys?

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



Save your project

STEP 3: Starting the race

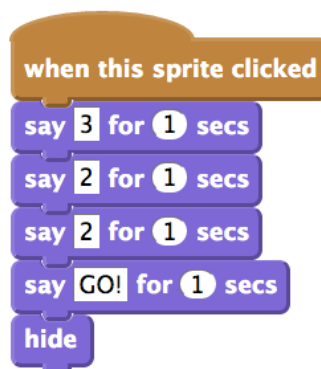
We need to have a way to start the race and to know who has won. First we create a start button.

✓ Activity Checklist

1. Add a new sprite from a file. Choose the **button3** sprite which is inside "Things".
2. Edit the costume of the button sprite, add the text '**start**' to it and click OK. Move the sprite to the middle of the stage.
3. Now add a script that shows the sprite when the project is run:



4. Now we want the button to count down from 3, say go and finally **hide** when it is clicked. Add another script like this one:



Test Your Project

Click on the green flag.

When you press the start button does it countdown to the start of the race before disappearing?

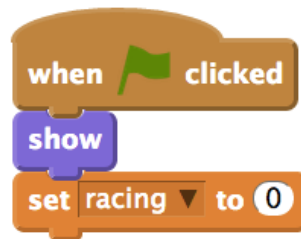
Keep track of your progress by ticking off the boxes below:



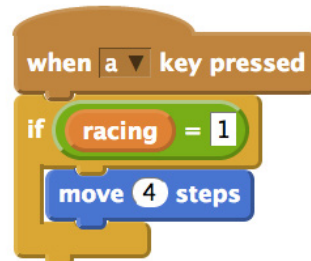
Save your project

We only want the racers to move after the race has started and we want to know when the race has finished so we need a variable to hold that information.

1. Add a variable for all sprites called **racing**. Untick the box next to it so it does not show on the stage.
2. Now set racing to be 0 when the project is first started. Change your **when flag clicked** script from before to look like this:



3. Next, set the **racing** variable to be **1** when the starting countdown has finished.
4. Now we need to stop the lioness and the parrot from moving unless the **racing** variable is set at 1. Click on the parrot sprite. Add a **control** block to the script that only allows the parrot to move if racing = 1.



5. Now do the same for the lioness sprite.



Test Your Project

Click on the green flag.

Does the lioness or the parrot move only after the countdown has finished?

We want to know who wins the race and reset it when it has finished so you can race again.



Save your project

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

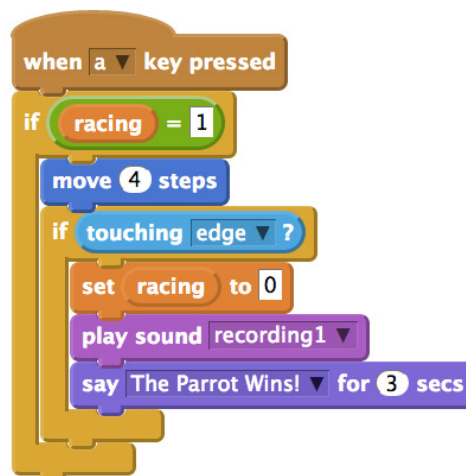
STEP 4: Finishing the race

✓ Activity Checklist

1. Add a block to the parrot's script that sets the **racing** variable to be **0** when the sprite touches the edge of the screen.



2. Now we want the parrot to let us know if it wins the race. Record a new sound for the Parrot sprite that will be played when the parrot wins. Click **sounds** and then record the sound of the parrot winning the race!
3. Now add blocks that **play** the sound you recorded and makes the parrot say it has won:



4. Now repeat these steps for the lioness.

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



Test Your Project

Click on the green flag.

Can you press the start button and race by pressing the 'A' and 'L' keys?

Do the sprites make their winning sound and say they've won when they reach the end of the race?



Save your project

STEP 5: Resetting the game

After the race is finished we need to tell the other sprites we have won and reset the game so we can play again.

We need the winning sprite to broadcast that it has won.



Activity Checklist

1. Click on the Parrot sprite. Add a block that **broadcasts** a "finished" message after the sprite says it has won.



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

2. Now we need to add a new script that listens for the finished broadcast and moves the parrot back to the start. What happens if you change the value that x is set to?



3. Now add the same script for the lioness. Test different x values to make sure the lioness and the parrot line up at the start.
4. We also want to put the lioness and the parrot in the same position when the project is run, so add another script to each that moves them to the start when we click the flag.



5. Now click on the button sprite and add a script that shows it when it receives the finished message.

Test Your Project

Click on the green flag.

Can you race against a friend, one of you moving the parrot by pressing 'A' and the other moving the Lioness by pressing 'L'?



Save your project

Challenge 1: Add a booster

- Try to add a booster that you can use once each race that moves the parrot or the lioness 30 steps in 1 go.
- Add a new costume with fire coming out behind for each sprite and make it appear when the boost is pressed.
- Create another sound that the sprite will make when the boost is pressed.

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



Test Your Project



Save your project

Challenge 2: Use custom blocks to simplify your script

The code to check if the race has finished is now used in two places for each sprite: when the sprite is moving normally and when it's moving with the booster. We can simplify our script using a custom block which is a chunk of code that gets used in more than one place. It's a bit like making up our own Scratch code block!

- Choose the Parrot's script, then select the **More Blocks** palette and click the **Make a Block** button.
- Give the custom block a name by typing "**finished**" into the pink box. Then click OK.
- You'll now see a **define finished** block appear in the scripts window. Drag it to a clear area.
- Detach the **if touching edge? then** block and drag it to the **define finished** block.

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

```
define finished
  if touching edge?
    set racing to 0
    play sound recording1
    say The Parrot Wins! for 3 secs
    broadcast finished

when q key pressed
  if racing = 1 and boosted = 0
    switch to costume parrot-boost
    set boosted to 1
    move 4 steps
    finished
```

Can you drag the `finished` block from the palette and use it like any other code item?

Delete the other `if touching edge?` block from your script and replace it with another `finished` custom block.

Does this make your code easier to read? Can you create a similar custom block for the lioness sprite?



Test Your Project



Save your project

Well done, you've finished! Now you can enjoy your game!

Don't forget you can share your game with all your friends and family by clicking on **Share** on the menu bar!