

Level

3

# Scratch Table Football

{codeclub  
cat.org}

## Community Contributed Project

This project was generously contributed by Mark Hardisty (idea, art, and original design) and Andy Lulham (editing and formatting as a Code Club project).

If you'd like to contribute a project of your own, then get in touch with us on Github.

## Introduction

It's the Football World Cup! So to celebrate, let's make a world cup football game in Scratch!



1



### 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

## Step 1: Get the pitch ready for a game

### ✓ Activity Checklist

1. Start a new project in Scratch. ☐
2. Click on the stage next to the sprite and switch to the **Backdrops** tab, then click the **Upload backdrop from file** button and choose the resources/pitch.jpg file. ☐
3. Delete the original blank backdrop, and the cat sprite. ☐
4. Our goals need nets! Create a sprite using the **Upload sprite from file** button and select resources/net.png. Move the net into the middle of the goal on the left. Rename it blue goal. ☐
5. Right-click on the net sprite and click **duplicate**, then move this new sprite to the goal on the right and rename it red goal. ☐



## Step 2: Add a goalie

Okay – our pitch is looking good! Now let's add some players and get them moving about.

### ✓ Activity Checklist

1. Click on **Upload sprite from file** and choose resources/goalie\_blue.png. Rename the sprite blue goalie, and drag it near to the left goal. ☐
2. Click on the **grow sprite** button, and click on the blue goalie sprite 10 times to scale up the sprite. ☐
3. Click on the **Scripts** tab, and add: ☐



Let's look at the code. We position the goalie, then we loop forever listening for key presses from the player. Q moves the goalie up, A moves it down. We check the `y position` of the goalie to stop it moving off the screen.

## Test your project

Click the green flag.

Can you control the goalie by pressing Q and A?

What happens when it gets to the edges of the pitch?

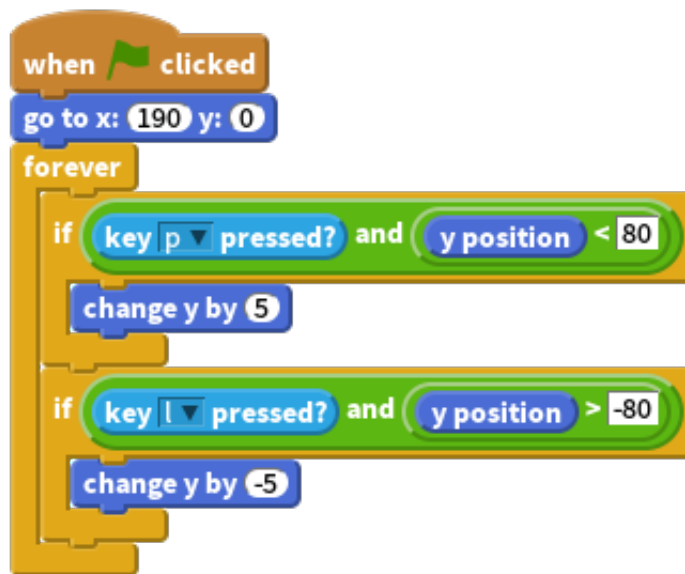


## Step 3: Add some more players

We can't play a game of football with just one player! We need to add some more.

## Activity Checklist

1. Create another sprite using the `Upload sprite from file` button and selecting resources/goalie\_red.png. ☐
2. Change the name of the sprite to red goalie. ☐
3. Drag the sprite on the stage to the right-hand side just in front of the goal. ☐
4. Like before, grow the sprite 10 times so it is as big as the other goalie. ☐
5. Select the blue goalie sprite and drag the script to red goalie to duplicate it. ☐
6. Select red goalie, and modify the script so it looks like this: ☐



You should only have to change three things: the `x position`, and which keys are pressed.

## Test your project

Click the green flag.

Can you control the red goalie by pressing P and L?

Do the controls for the blue goalie still work?

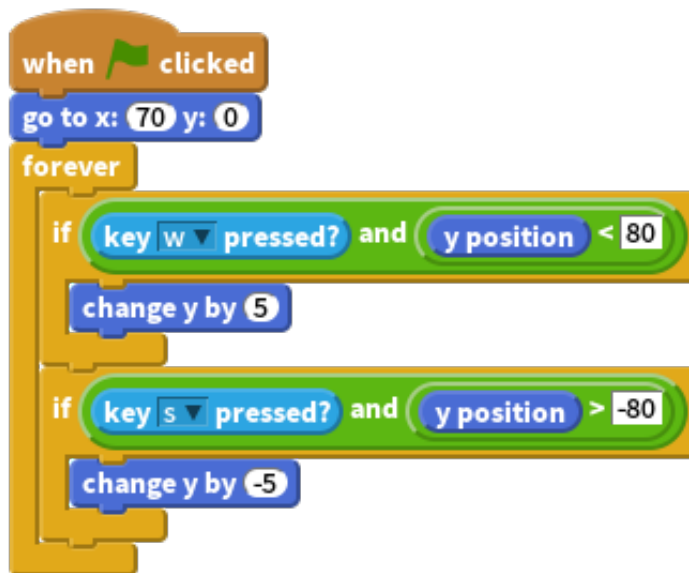


**Save your project**

## Step 4: Add some attacking players

### ✓ Activity Checklist

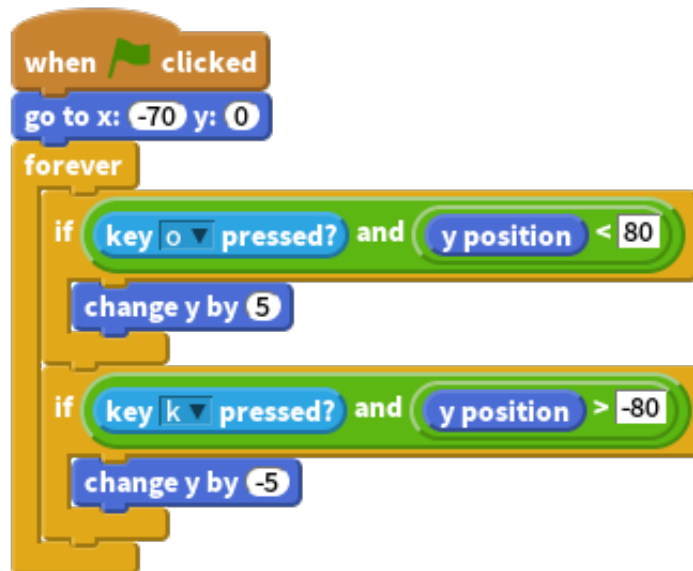
1. Create another sprite using the `Upload sprite from file` button and selecting `resources/attack_blue.png`. Rename the sprite blue attack. ☐
2. As before, grow the sprite 10 times, so the players are as big as the goalies. ☐
3. Move the sprite into the right-hand side of the pitch, so they are attacking the red team's goal. ☐
4. Drag the script from blue goalie to blue attack, and modify it to match this: ☐



You should only have to change three things: the `x position`, and which keys are pressed.

5. Create one more sprite using the `Upload sprite from file` button and selecting `resources/attack_red.png`. Rename sprite to red attack. ☐
6. As before, grow the sprite 10 times, so all the players on the pitch are the same size. ☐
7. Move the sprite into the left-hand side of the pitch, so they are attacking the blue team's goal. ☐
8. Drag the script from blue attack to red attack, and modify it ☐

to match this:



You should only have to change three things: the `x position`, and which keys are pressed.

## Test your project

Click the green flag.

Do you have two teams of working players now? Try pressing Q, A, W and S to control the blue team, and P, L, O and K to control the red team.



Save your project

## Step 5: Add a bouncing ball

Our game of football has feet, but no ball! Let's fix that.

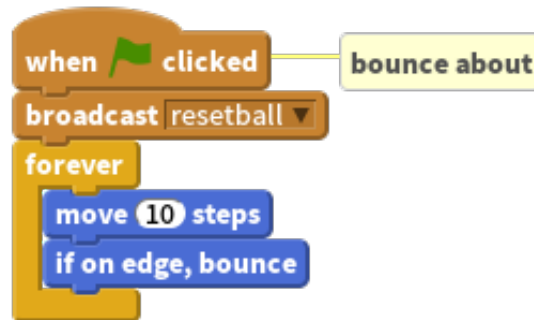


### Activity Checklist

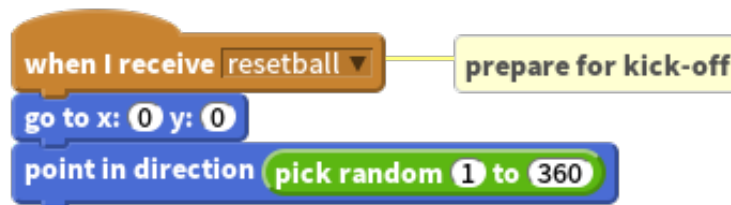
1. Click `Upload sprite from file`



2. Select resources/ball.png, and rename the sprite ball.
3. In the **Scripts** tab for the ball, add the following:



4. Right-click on this script and click **add comment**. Add the comment "bounce about".
5. Add another script to the ball:



This tells the ball to move to the middle of the pitch for kick-off, and then point in a random direction. Why do we use **resetball**?

6. Don't forget to add the "prepare for kick-off" comment, so we remember what this script does!



## Test your project

Click the green flag.

Does the ball move?

What happens when it hits the edges?

Are you happy with the ball speed? Try changing the **move** block to have a smaller or larger number until you're happy with it.

What happens when the ball hits your players?

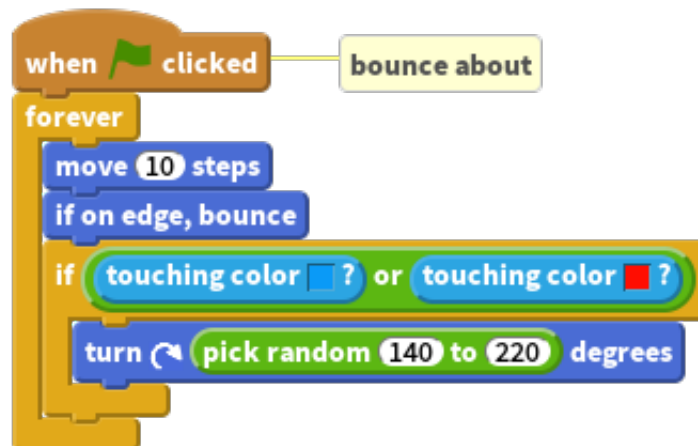




## Step 6: Kicking the ball

We need the ball to bounce off the players on the pitch.

- ☐ Modify the last code block you created (“bounce about”) to look like this:



You should select the colours by clicking on the football players. This change makes the ball sense it is touching a player, and then bounce off them by turning (with a bit of randomness).

### Test your project

Press the green flag.

What happens now when the ball hits your players? Is it working for both red and blue players?



## Step 7: GOOOOOOAAAAALLLLLLLLLL!!!!!!!

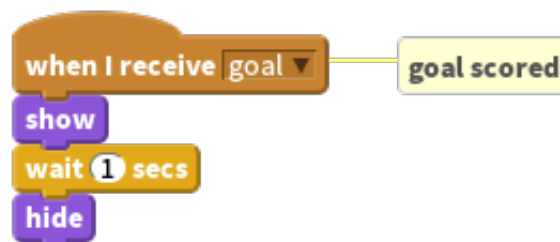
### Activity Checklist

1. Select red goal and add the following script:



This is like goal line technology - it runs all the time, checking whether the ball is touching the goal, and broadcasting a message when it is.

2. Drag the script to blue goal to copy it there as well.
3. Now we need to do something when goal is broadcast. Click `Upload sprite from file`.
4. Select `resources/goal_text.png`, and rename the sprite goal text.
5. Add this script to goal text:



6. Finally, add one more script to goal text:



...to ensure the goal text begins the game hidden.



Save your project



Test your project

You're ready to play a game! Press the green flag.

What happens when the ball goes in?

Try challenging a partner to a game!

### **Challenge 1: Keep score**

Can you add variables that will keep track of scores for the red and blue teams?

### **Challenge 2: Tip the table**

You might notice sometimes the ball gets stuck bouncing where the players can't reach. Can you add a script to the ball to fix this by "tipping the table" when the spacebar is pressed?

### **Challenge 3: Referee's whistle**

Can you add the sound effect resources/whistle.mp3 so that the whistle sounds whenever a kick-off takes place?