

Table Football

Introduction

Let's make a world cup football game in Scratch!



Step 1: Get the pitch ready for a game

✓ Activity Checklist

- ☐ Start a new project in Scratch.
- ☐ 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.
- ☐ Delete the original blank backdrop, and the cat sprite.
- ☐ 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**.
- ☐ 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**.

Save your project

Step 2: Add a goalie

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

✔ Activity Checklist

- ☐ 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.
- ☐ Click on the `grow sprite` button, and click on the **blue goalie** sprite 10 times to scale up the sprite.
- ☐ Click on the `Scripts` tab, and add:

```
when green flag clicked
  go to x: -190 y: 0
  forever loop
    if key q pressed? and y position < 80 then
      change y by 5
    if key a pressed? and y position > -80 then
      change y by -5
```

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?

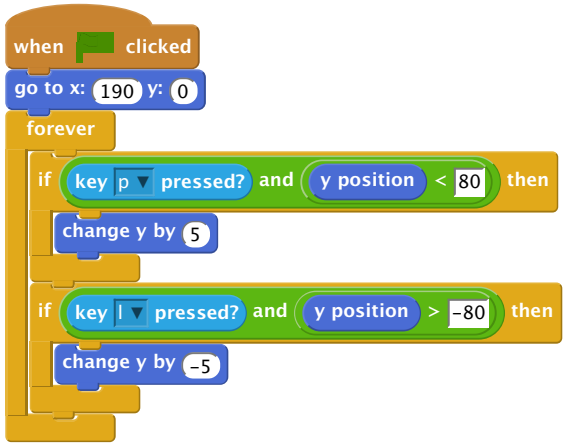
Save your project

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

- ☐ Create another sprite using the `Upload sprite from file` button and selecting `resources/goalie_red.png`.
- ☐ Change the name of the sprite to `red goalie`.
- ☐ Drag the sprite on the stage to the right-hand side just in front of the goal.
- ☐ Like before, grow the sprite 10 times so it is as big as the other goalie.
- ☐ Select the `blue goalie` sprite and drag the script to `red goalie` to duplicate it.
- ☐ 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

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

```
when green flag clicked
  go to x: 70 y: 0
  forever loop
    if key w pressed? and y position < 80 then
      change y by 5
    if key s pressed? and y position > -80 then
      change y by -5
```

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

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

```
when green flag clicked
  go to x: -70 y: 0
  forever loop
    if key o pressed? and y position < 80 then
      change y by 5
    if key k pressed? and y position > -80 then
      change y by -5
```

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.

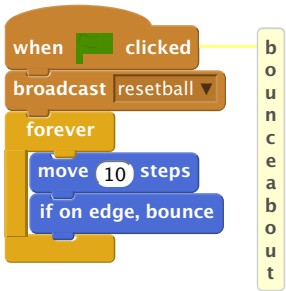
Save your project

Step 5: Add a bouncing ball

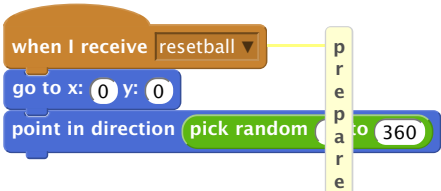
Our game of *football* has **feet**, but no **ball**! Let’s fix that.

Activity Checklist

- ☐ Click `Upload sprite from file`
- ☐ Select `resources/ball.png`, and rename the sprite **ball**.
- ☐ In the `Scripts` tab for the ball, add the following:



- ☐ Right-click on this script and click `add comment`. Add the comment “**bounce about**”.
- ☐ 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`?

- ☐ 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.

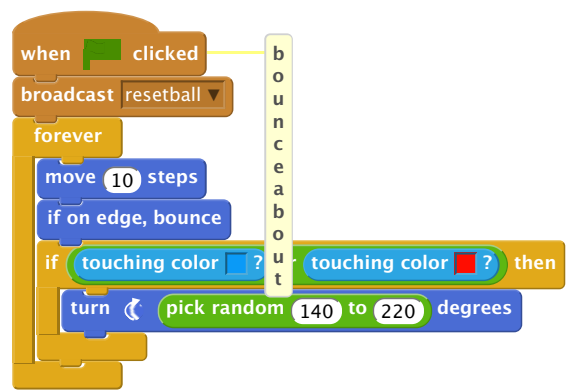
- ☐ Does the ball move?
- ☐ What happens when it hits the edges?
- ☐ Are you happy with the ball speed? Try changing the `move` block to have a smaller or larger number until you’re happy with it.
- ☐ What happens when the ball hits your players?

Save your project

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.

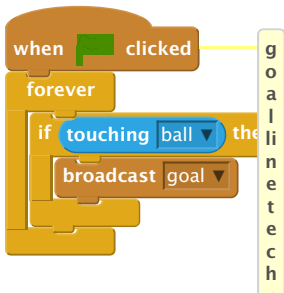
- ☐
- What happens now when the ball hits your players? Is it working for both red and blue players?

Save your project

Step 7: GOOOOOOAAAAALLLLLLLLLL!!!!!!!

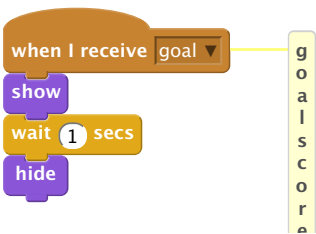
✔ Activity Checklist

- ☐ Select **red goal** and add the following script:

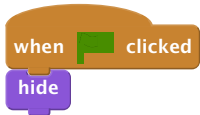


This is like goal line technology - it runs all the time, checking whether the ball is touching the goal, and broadcasting a message when it is.

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



- ☐ 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?