

Scratch Ball Game Project

Interactivity between objects in Scratch

In this exercise you will investigate interactivity between objects in Scratch by making a game with three balls. Two of the balls will be animated and move around the screen. The object of the game is to position the third ball in such a way that the other balls do not hit it with a predetermined time.

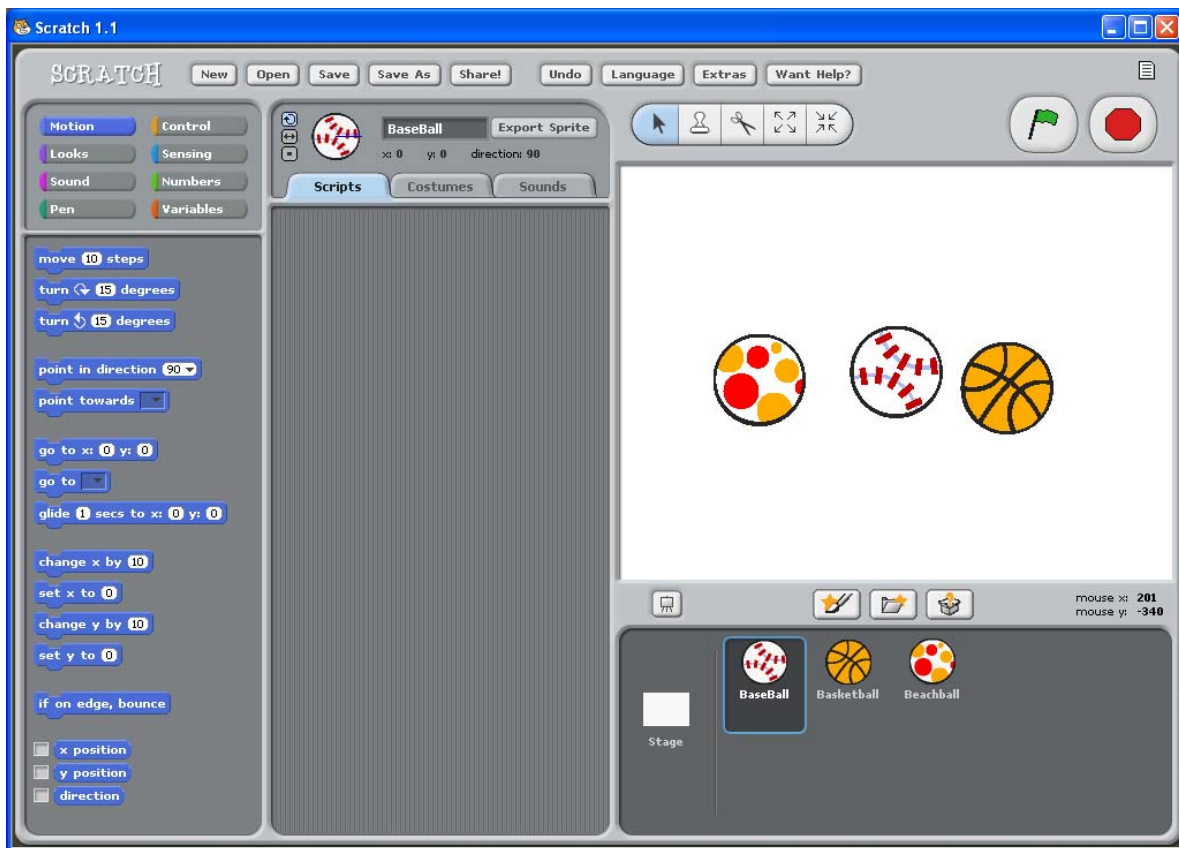
Step 1 – click on the **scissors** button and remove the cat sprite

Step 2 – click the **centre button** below the **stage** (import a new sprite)

Step 3 – browse the **things** folder and import **baseball1**

Step 4 – repeat the process in order to import **basketball** and **beachball1**

Step 5 – click on each sprite in turn and rename them in the sprite dialogue box (top centre of the screen) with the names **basketball**, **beachball** and **baseball**



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Step 6 – select the **baseball**. Click on the orange control menu button (top left of the screen) and drag in a **when green flag clicked** instruction

Step 7 – drag in a **forever** instruction and attach it to the **when green flag clicked** instruction

Step 8 – select the blue **motion** menu

Step 9 – Drag in a **move 10 steps** command. Drop inside the **forever** instruction. Reset the value to 7.

Step 10 – Drag in an **if on edge, bounce** instruction. Drop inside the **forever** instruction.

Note – The forever instruction should expand and surround the motion instructions

Step 11 – click the **green button** and watch the **baseball** bounce around

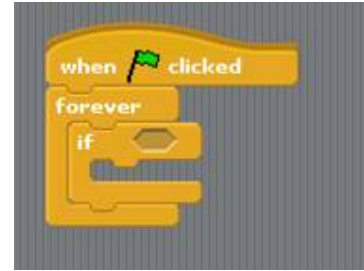
Step 12 – repeat this process for the **beachball**



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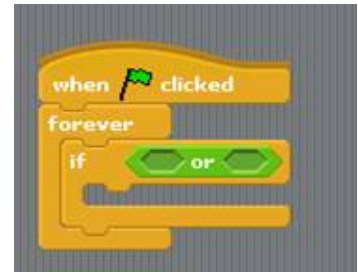
The next stage is to get the animated balls to interact with each other and the non animated ball

Step 13 – with the **beachball** sprite still selected, click the control menu and drag in **when green flag clicked**, **forever** and **if (condition)** instructions

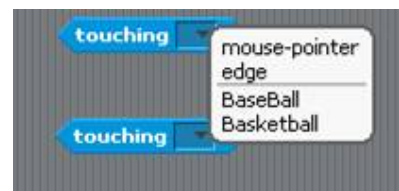


Step 14 – click on the green **numbers** menu – choose the **OR** operator (we want something to happen if this ball is touch another ball **OR** the other one).

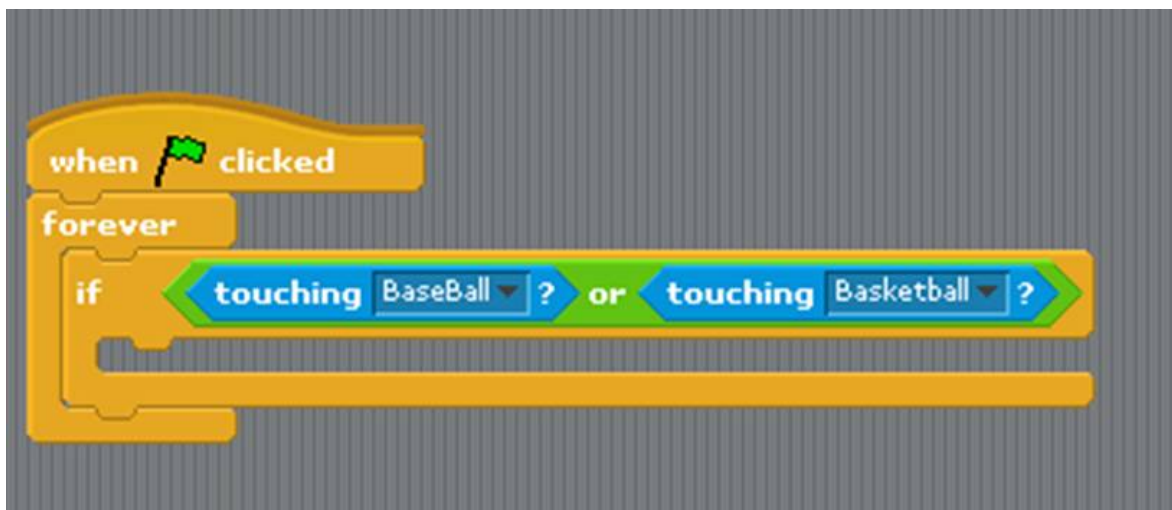
Drop the **OR** operator inside the **if (condition)**



Step 15 – click on the blue **sensing** menu – pull across two touching instructions and set the drop down for the other two balls.



Step 16 – drop the two **touching** commands into the **OR** operator

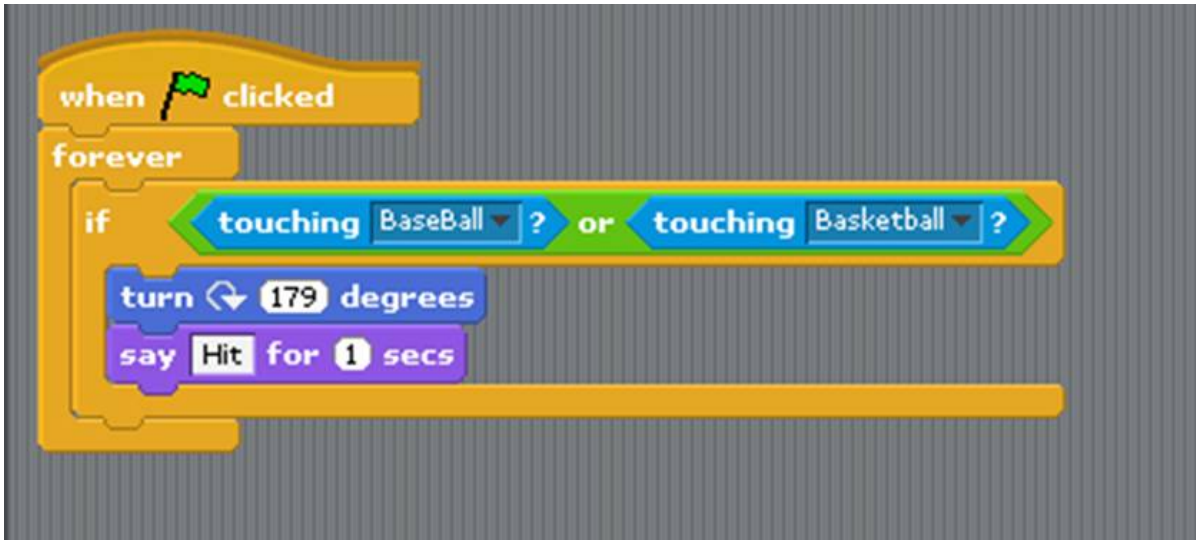


Step 17 – from the blue **motion** instruction set drop in a **turn 15 degrees** instruction. From the purple **looks** instructions set drop in a **say hello for 2 seconds** instruction

Step 18 – reset the respective values to **179 degrees**, **Hit!** and **1 second**

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Step 19 – create this same script for the **baseball**.



In this next stage it is the turn of the basket ball to have some interactivity

Step 20 – with the **basketball** selected, *except for the turn instruction*, the recreate the script that you have just made for the other two balls for the other two balls

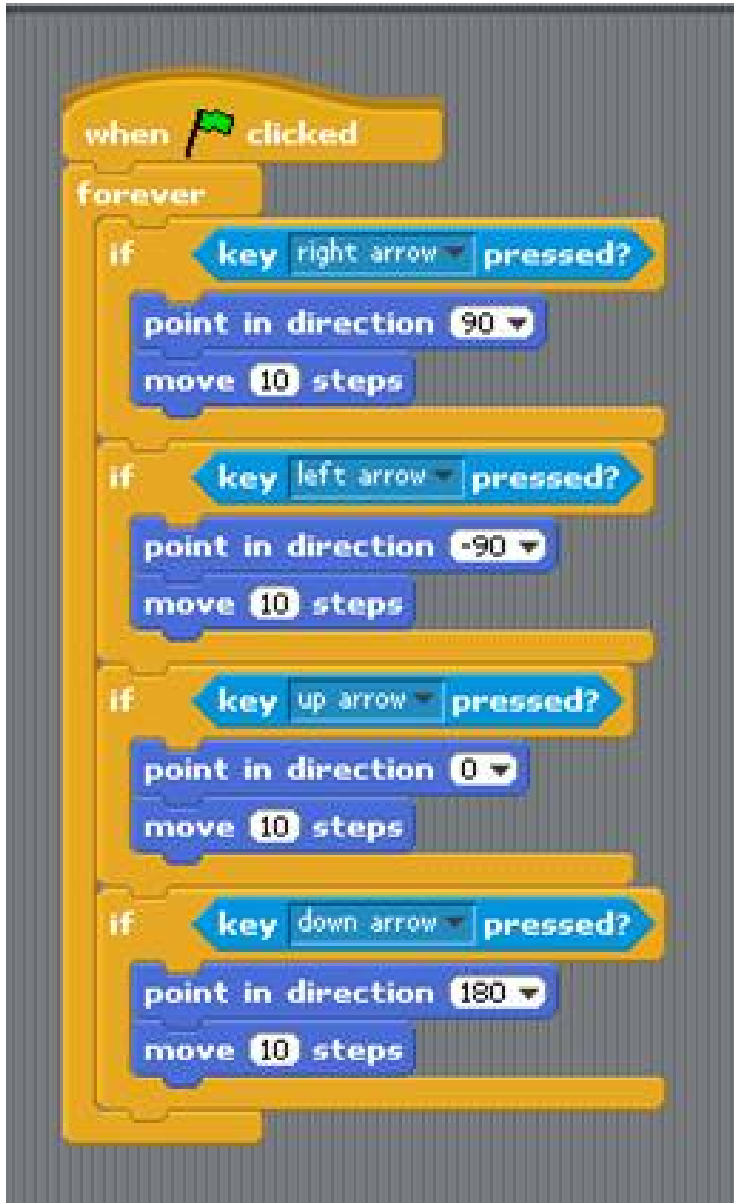


Step 21 – from the sensing menu check the **timer** option (this will put a timer on the stage)

Step 22 – drop in the **reset timer** instructions as shown. This will rest the time at the start of the game and whenever either of the moving balls hits the basket ball

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Step 23 - As it is the **basket ball** that will be moved by the person playing the game, we have to include a script that will achieve this.



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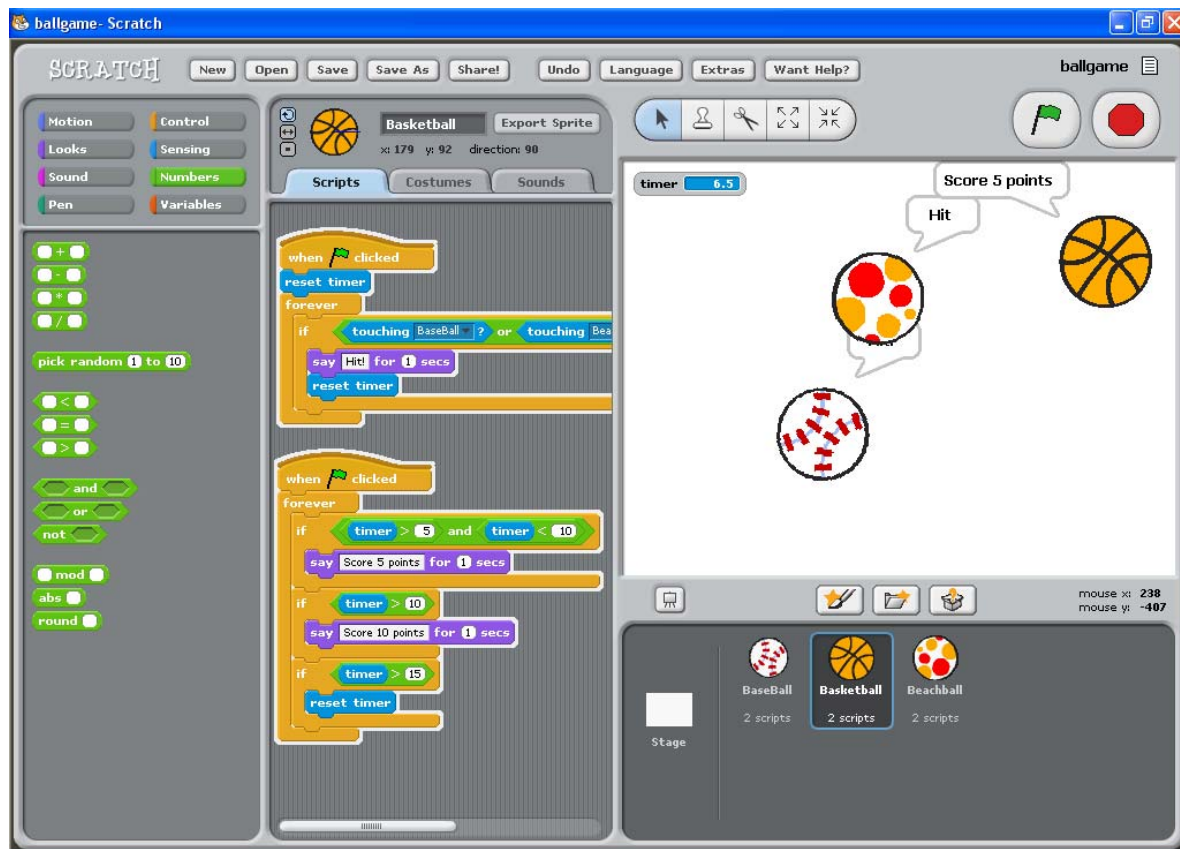
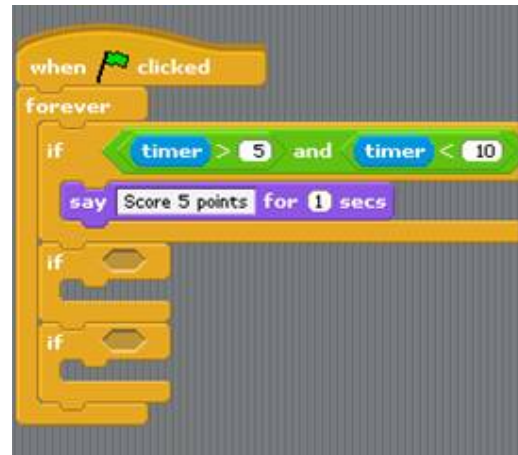
In the next process we want to give score for if the balls avoid each other for 5 or 10 seconds

Step 24 – with the **basketball** selected, create a new script starting with the **when green flag clicked** instruction. Drop in three **if (conditions)** instructions

Step 25 – from the **numbers** menu select the **AND** operand. Select the **greater than** and **less than** operands and drop these into the **AND** operand. Drop the timer menu into so that the options are **timer >5 and <10**

Step 26 – from the purple **looks** menu drop in **say hello for 2 seconds** and change the values to say **score 5 points** for 1 second

Step 27 – the next **if (condition)** instruction set the condition to **timer >10** and say **score 10 points**. In the last **if (condition)** set to **timer >15** and drop in a **reset timer** instruction



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Step 28 – Click the stage button and select the centre tab in the stage design dialogue. Import a background for the stage

Click the **enter presentation mode** button on the bottom left of the stage and view your game in full screen

