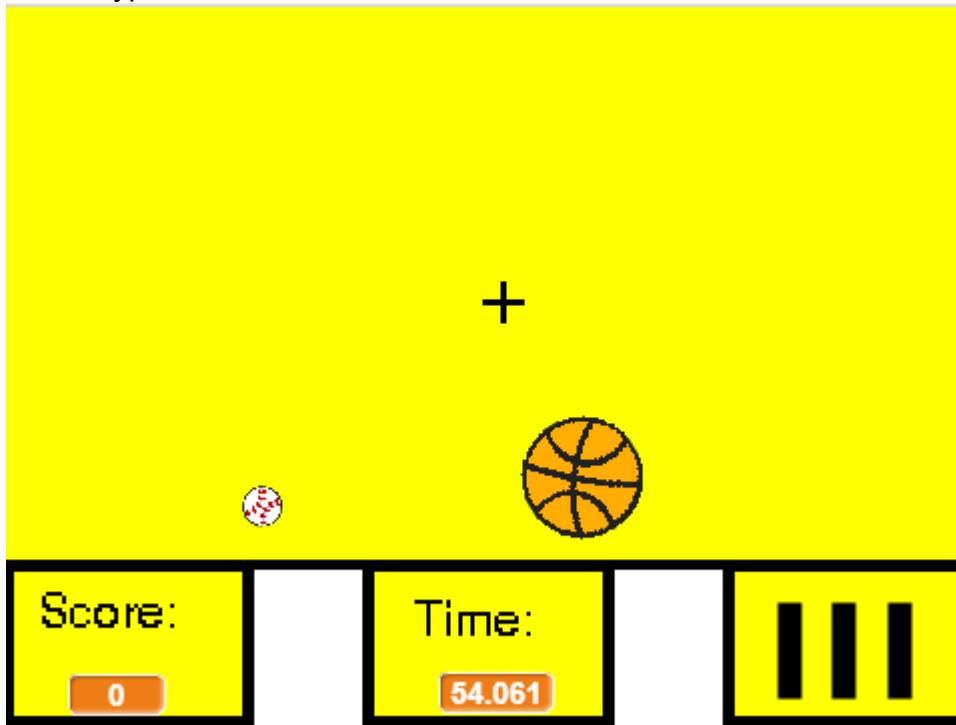# Shoot_The_Balls Scratch Tutorial
By Jake Feeney

Difficulty: Advanced
Game Type: Shooter

Thanks for choosing this tutorial, it is my first tutorial on coding. I would greatly appreciate feedback so that I can make better tutorials in the future.

This game is a shooter where you objective is to shoot as many basketballs and baseballs before time runs out. I originally made this game as a demo game for project Pistation. The idea behind the game was that in most scratch shooters if the cross-hairs were touching the target the shot counted as a hit.
Example:

The shot would count because the cross-hairs were touching the target.

So I decided to make a game where the hit only counted if the center.

First you have to go to https://scratch.mit.edu/projects/173063239/ and remix or download it. It is a template for our program and contains all the sprites and some code that tell the sprites where they are supposed to be on the screen. If you press the green flag it will do nothing.

There is a lot of sprites in this project so let's find out what they do.
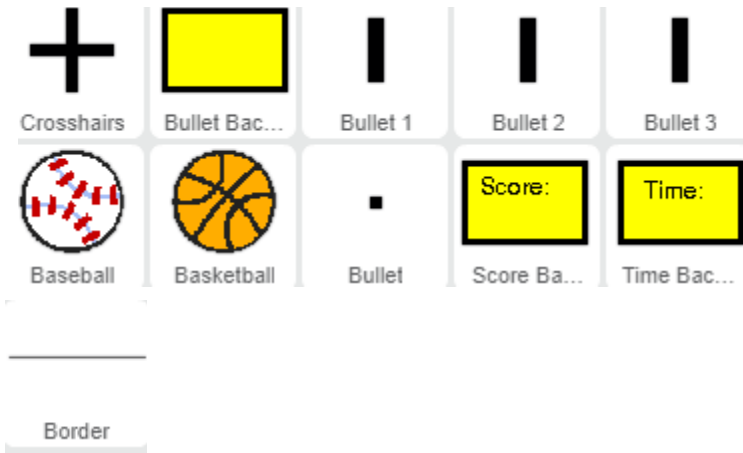
The cross-hairs are what we use to aim. The Bullets 1, 2 and 3 are there to show how much ammo we have. The baseball and basketball are the targets. The Bullet is used to detect if you shot anything. The Bullet, Score and Time backgrounds are used as containers for the bullets and the variables. And finally the Border is used to separate the top and bottom part of the screen.

The first thing we will program is the crosshairs. This code makes the crosshairs follow the mouse, makes sure that it doesn't go past the border, hides when time is up and resets the time and score. If you want to change how long the game lasts you change it here.

```
when [flag] clicked
set Time to 60
show
if on edge, bounce
set Score to 0
forever
    point in direction 90
    go to front
    if  -86 > mouse y  then
        go to x: mouse x  y: -86
    else
        go to x: mouse x  y: mouse y

    if  Time < 0.1  then
        hide
```
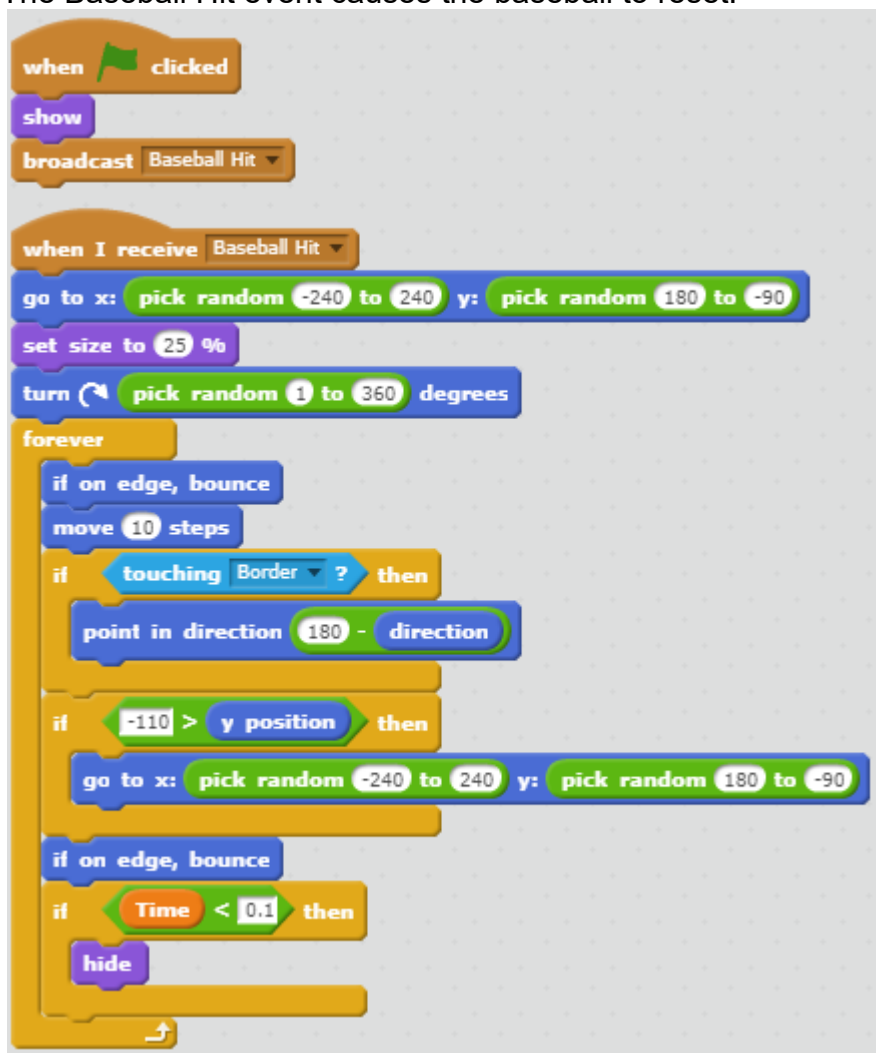
Next we will program the Baseball to move around.
This bit of code tells the basketball to reset, bounce around, hide when times up and not go past the border.
The border code is a bit glitchey so it is programmed to reset if it goes past the border.
The Baseball Hit event causes the baseball to reset.

```
when [flag] clicked
show
broadcast Baseball Hit

when I receive Baseball Hit
go to x: (pick random (-240) to (240)) y: (pick random (180) to (-90))
set size to (25) %
turn (pick random (1) to (360) degrees)
forever
    if on edge, bounce
    move (10) steps
    if <touching Border ?> then
        point in direction ((180) - (direction))

    if <(-110) > (y position)> then
        go to x: (pick random (-240) to (240)) y: (pick random (180) to (-90))

    if on edge, bounce
    if <(Time) < (0.1)> then
    hide
```

The Basketball code is very similar but there are some differences so don't just copy and paste the Baseball code.
This is the last long bit of code.

```
when [flag] clicked
show
broadcast Basketball Hit

when I receive Basketball Hit
go to x: pick random -240 to 240 y: pick random 180 to -90
set size to 75 %
turn (clockwise) pick random 1 to 360 degrees
forever
    move 10 steps
    if on edge, bounce
    if < touching Border ? > then
        point in direction 180 - direction
        repeat until < not < touching Border ? > >
            move 10 steps
    if < -100 > y position > then
        go to x: pick random -240 to 240 y: pick random 180 to -90
    if < Time < 0.1 > then
        hide
```

Now its time to add the timers code.
After you add this code the timer will work and the game will stop when the timer ends.

```
when [green flag] clicked
set [Game Over?] to [False]
set size to (200) %
go to x: (0) y: (-138)
reset timer
forever
    set [Time] to ((60) - (timer))
    if <(0) > (Time)> then
        set [Game Over?] to [True]
        stop [all]
```

Now that we got a timer working lets code the game to fire when we press "F" on our keyboard and reload when we press the Spacebar.
Put this code in the Bullet

```
when I receive [Fire]
if <<(Game Over?) = [False]> and <not <(0) = (Bullets)>>> then
    wait (0.1) secs
    change [Bullets] by (-1)
```

```
when [green flag] clicked
set [Bullets] to (3)
show
forever
    go to x: (mouse x) y: (mouse y)
```

```
when [space] key pressed
set [Bullets] to (0)
wait (1) secs
set [Bullets] to (3)
```

Put this code in the Basketball

Put this code in the Baseball

This game is nearly done now we just need to add in the last 3 bits of code.
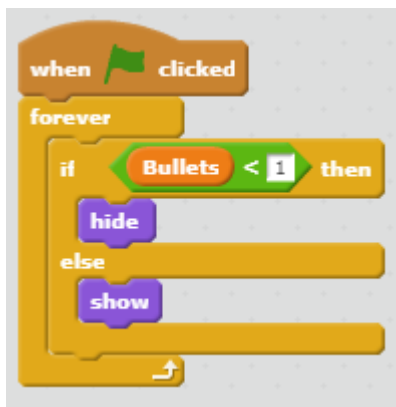
In Bullet 1 add this:

In Bullet 2 add this:

In Bullet 3 add this:

Now this game is finally finished.

If you want to change the time, You change it in the Crosshair code.
If you want to make the game easier you make the Bullet bigger not the Crosshairs.

If you do change the game I would love to see it so if you do please tell me. I am at the advanced table most of the time.