CoderDojo Athenry
"Above all, be cool"

Every week:
- ✓ Sign in at the door

If you are new:
- ✓ Fill in Registration Form
- ✓ Ask a Mentor how to get started

Make sure you are on the Athenry Parents/Kids Google Group email: coderdojoathenry@gmail.com
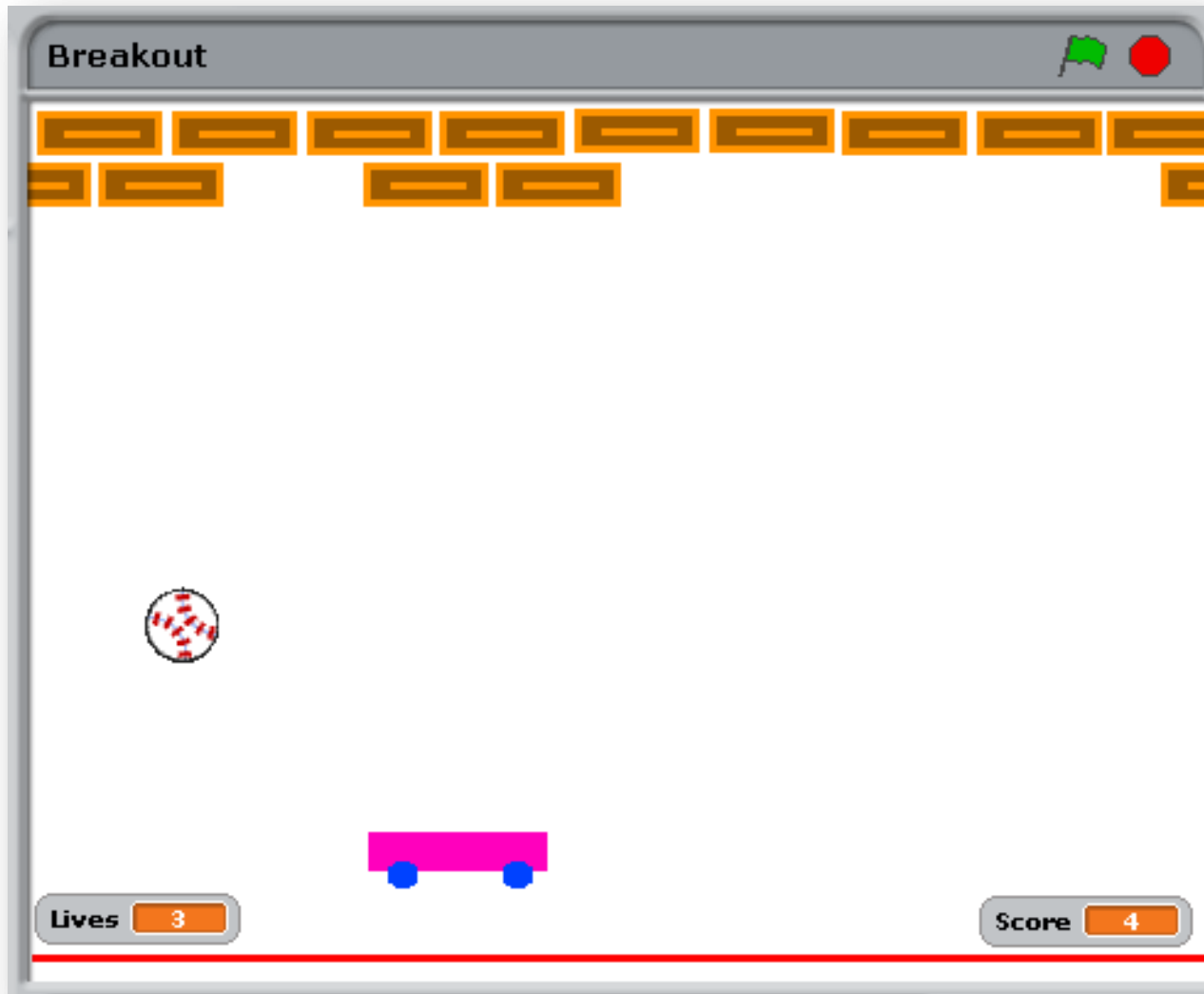
CoderDojo Athenry

SCRATCH Beginners

Athenry

Code and notes by Martha Fahy

Today's Ninja Challenge:
Make a Game Like Breakout

Important concepts we will use today.

Making Sprites Move

Loops & Decisions

Animation & Sound

Variables & Broadcasts

Steps to Make the Game

Make the **Bat** sprite,
write & test code to control it

Make the **Ball** sprite,
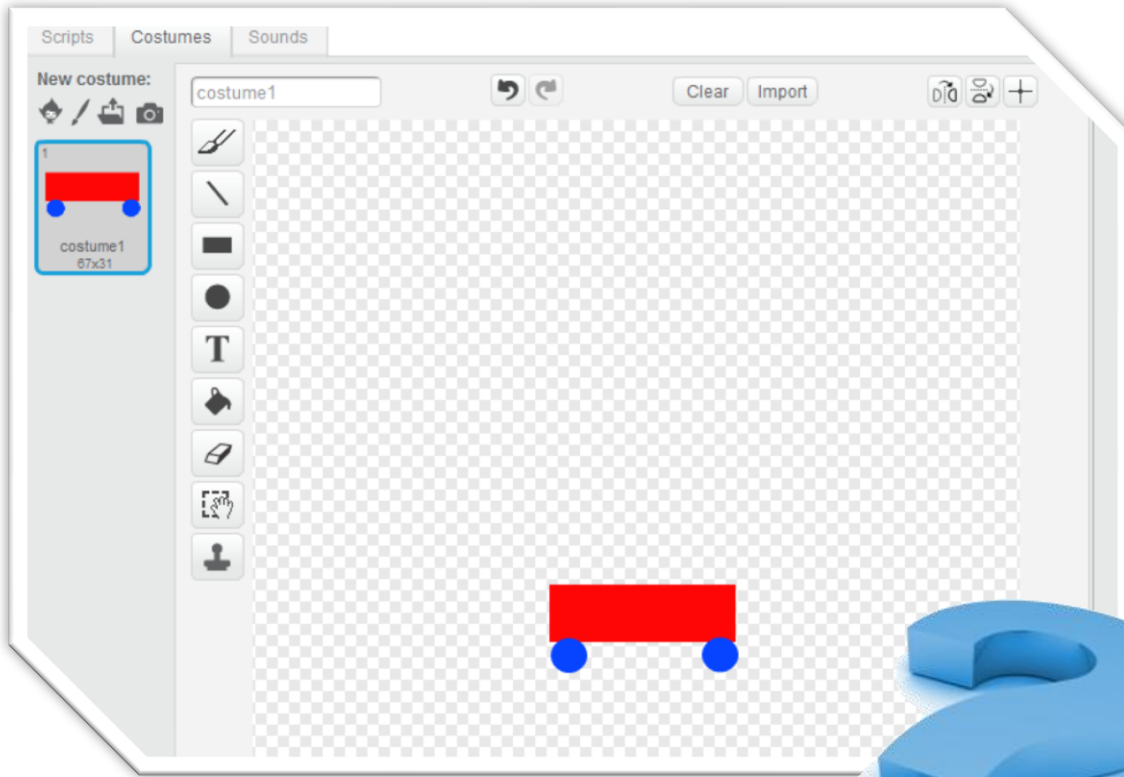write code to make it move & animate

Add an **End Line** and a **Lives** variable;
Lose a life when ball hits line

Make a **Brick** sprite, write its code;
Test it works then **duplicate** it

Design the Bat Sprite
& Code So You Control it

Scripts | Costumes | Sounds

New costume:

costume1

Clear | Import

1

costume1
67x31

```
when [flag] clicked
forever
  set x to (mouse x)
```
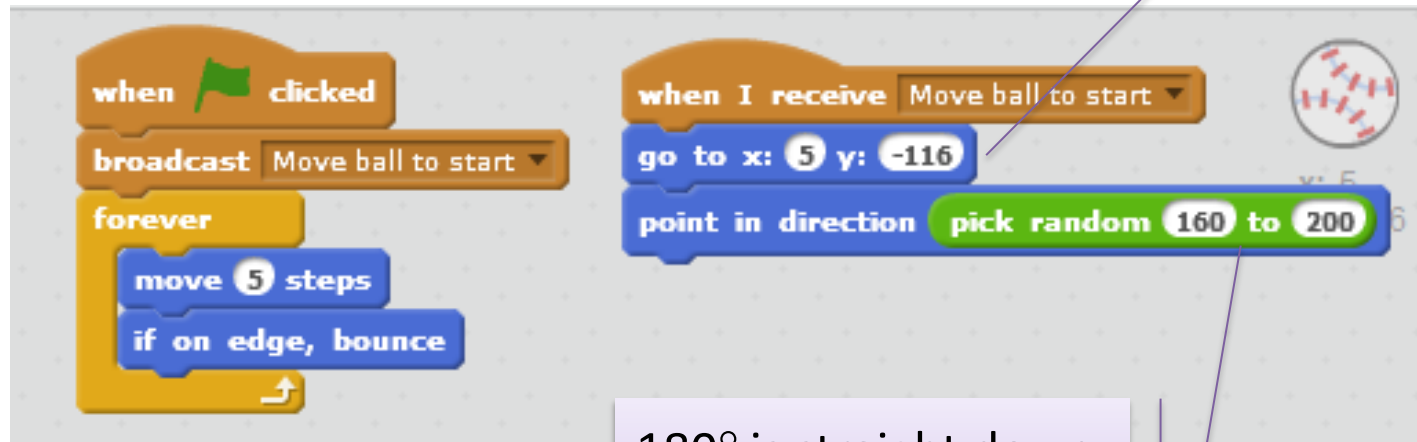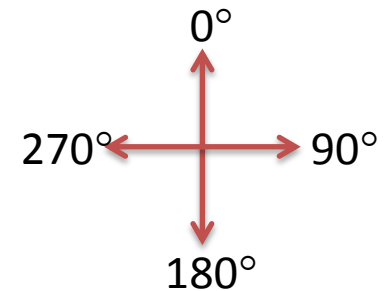
x: -12
y: -154

How would you control it with arrows instead?

Make the Ball Sprite & Basic Code to Move it
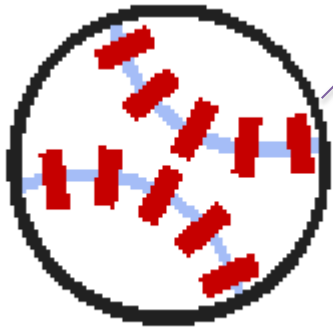
I used a standard image

Will use this to reset position after losing a life
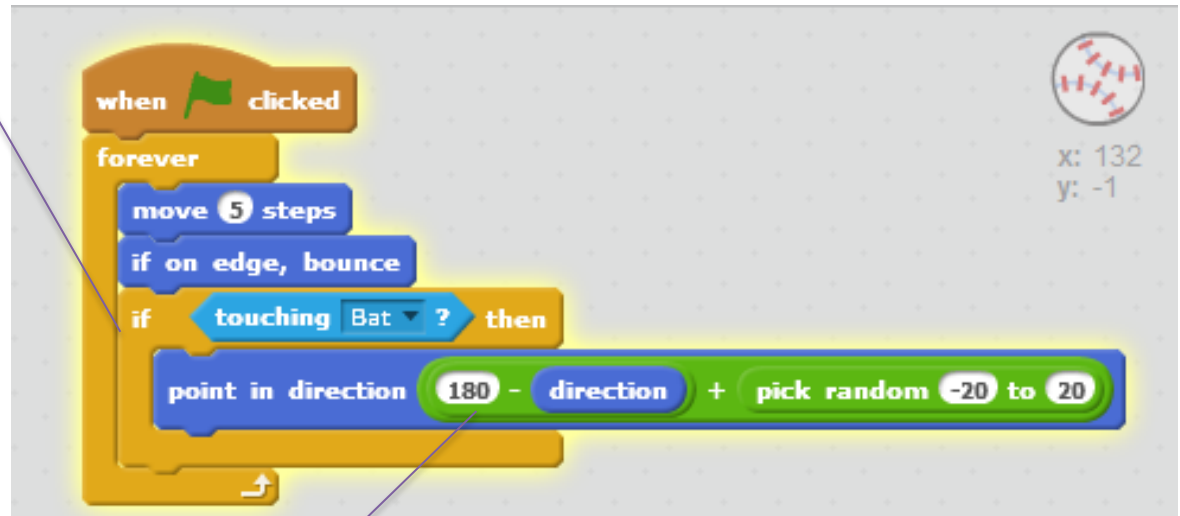
0°

270°   90°

180°

```
when [flag] clicked
broadcast Move ball to start ▼
forever
    move 5 steps
    if on edge, bounce
```

```
when I receive Move ball to start ▼
go to x: 5 y: -116
point in direction (pick random 160 to 200)
```

180° is straight down: pick direction in range 180 ±20

Code for the Ball Sprite to Bounce off the Bat

New block of code to bounce off bat


```
when [flag] clicked
forever
    move 5 steps
    if on edge, bounce
    if touching Bat ? then
        point in direction (180 - direction) + pick random -20 to 20
```
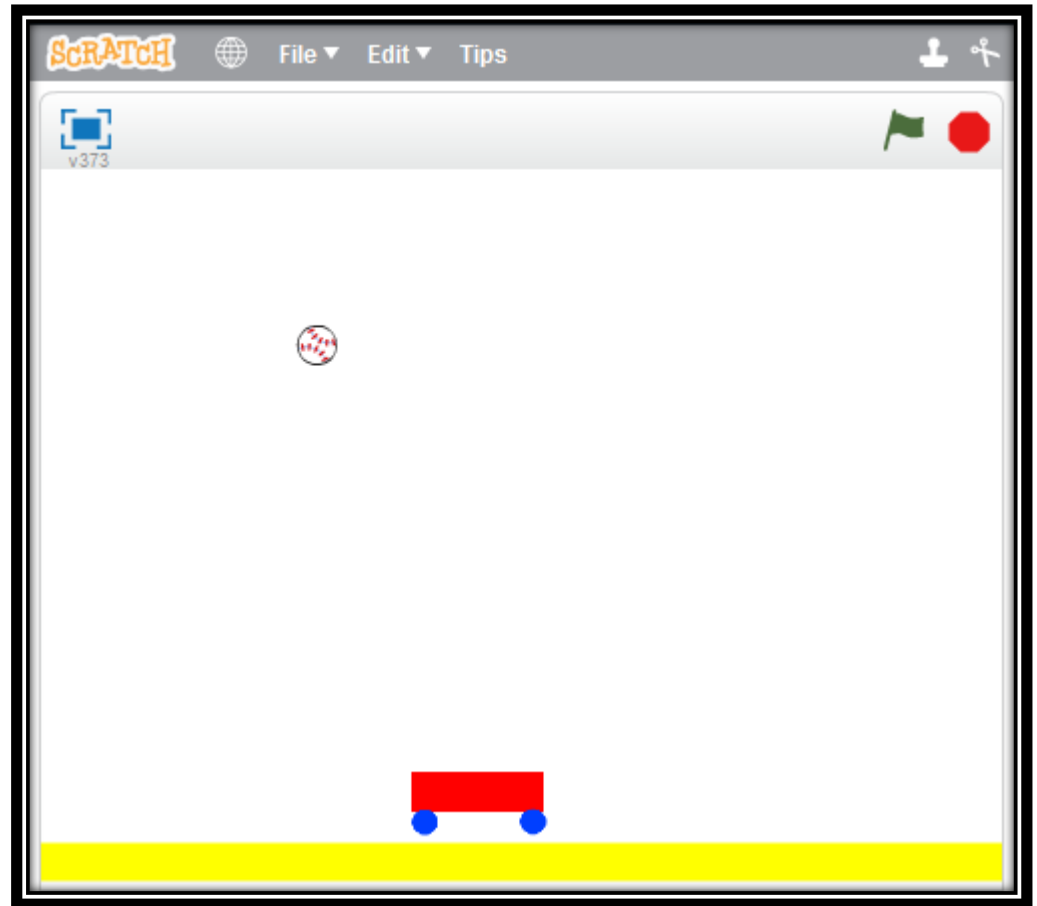
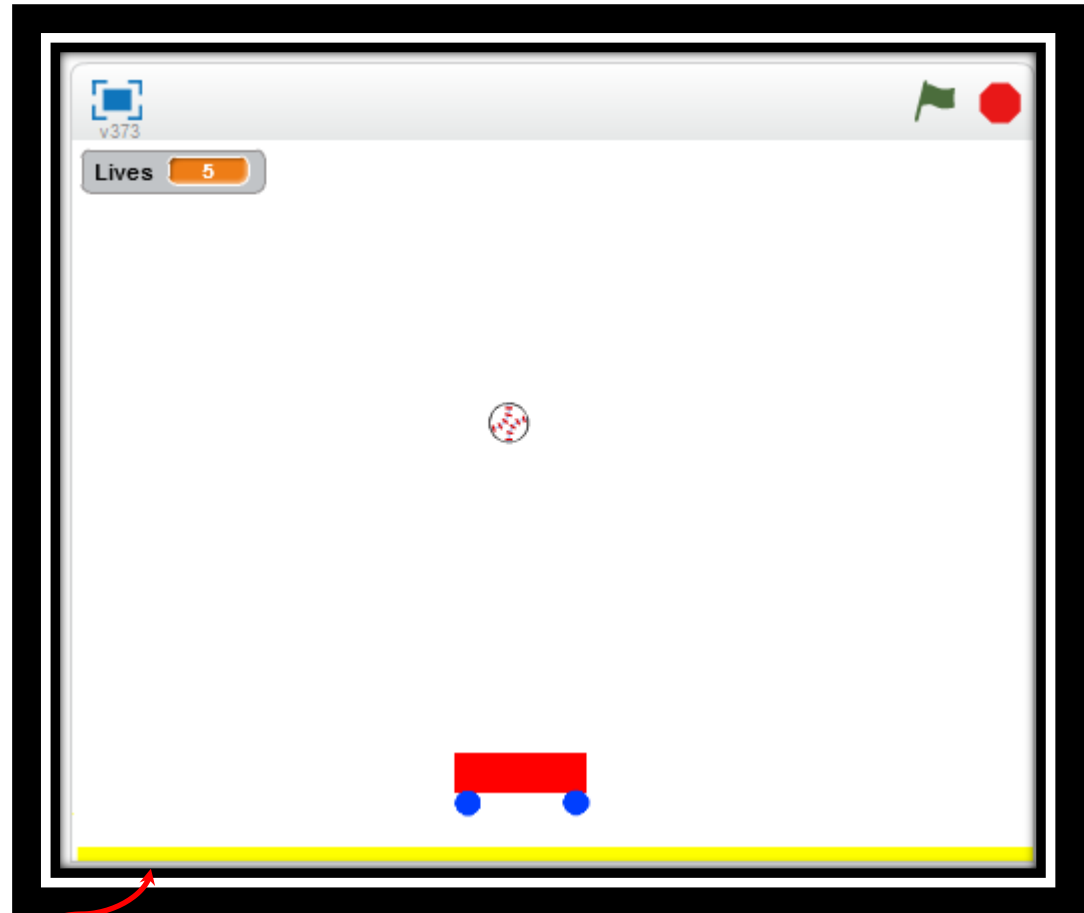180° – Direction is opposite direction; add some randomness

Add an End Line

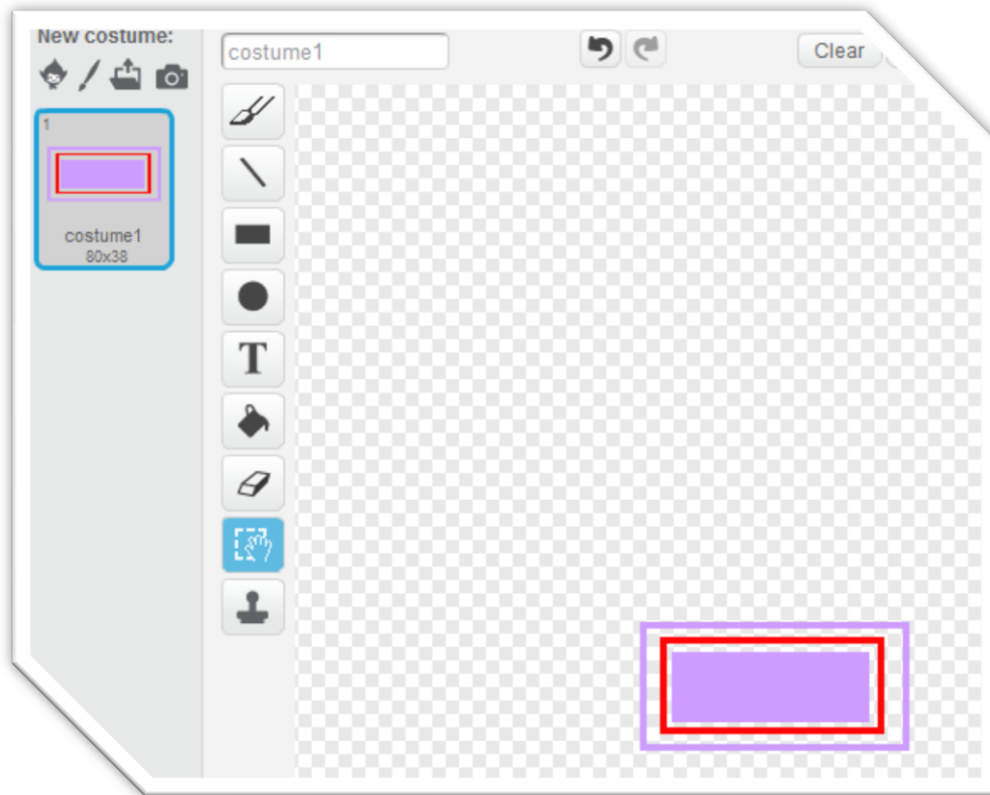End Line:
Add Sprite
Or
Draw on Stage

Keep Track of Lives

- **Create Variable** for Lives
  Start with Lives =5
  Stop if Lives = 0

- **If Ball touches End Line
  Reduce Lives by 1**
  Also
  Reset position of ball –
  broadcast 'move ball to
  start'

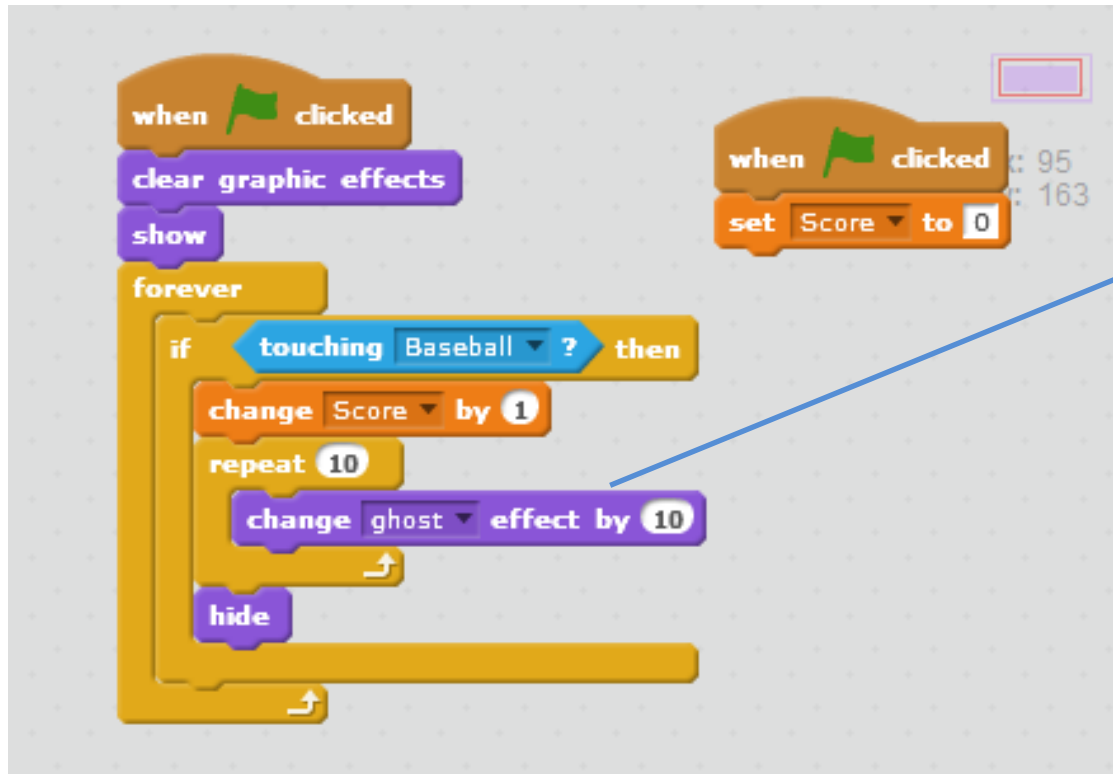End Line added to bottom of the Backdrop

Design & Code a Single Brick

Need a variable for Score
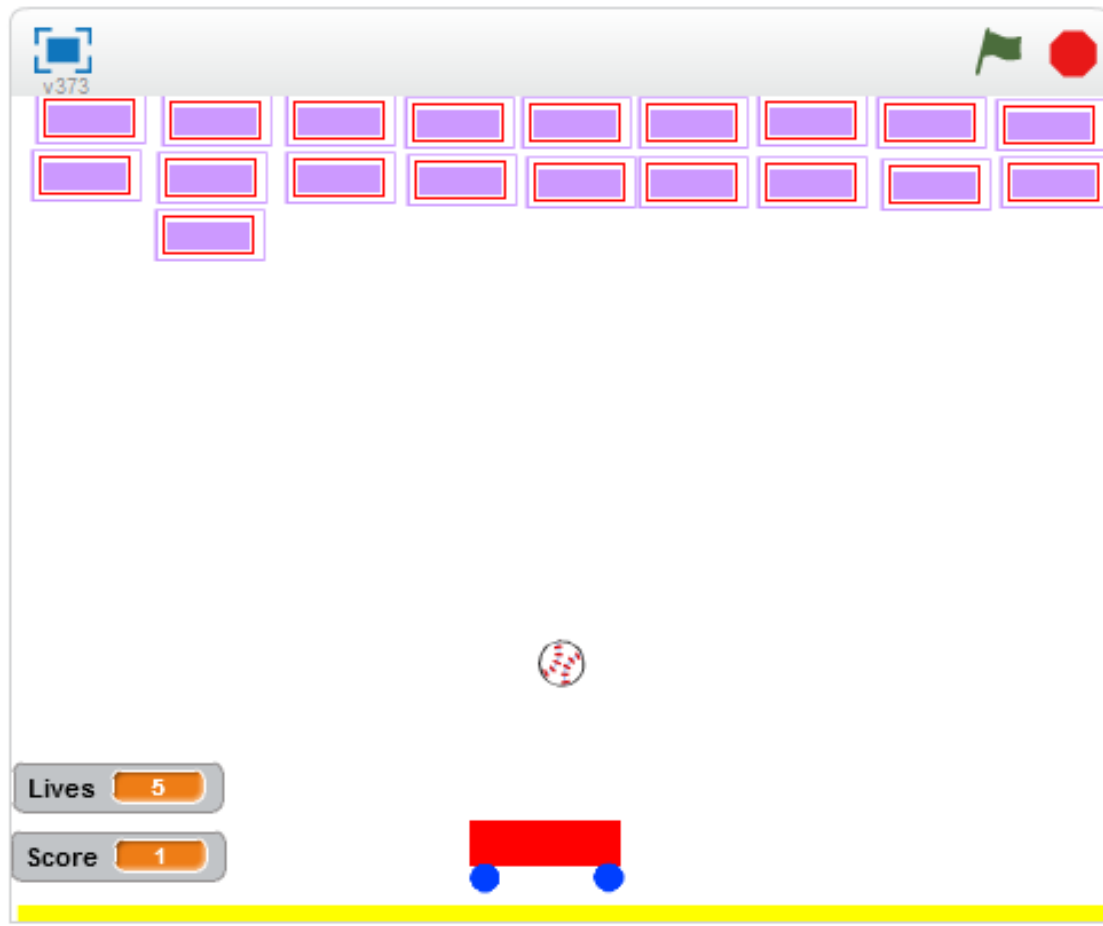
Need code for **Ball** when it receives broadcast:

Make a sound effect, Bounce off brick (copy code for bouncing off bat)

Design & Code a Single Brick


```
when [flag] clicked
clear graphic effects
show
forever
    if  touching Baseball ? then
        change Score by 1
        repeat 10
            change ghost effect by 10
        hide
```

```
when [flag] clicked          : 95
set Score to 0               : 163
```

Make it fade slowly

Test the Single Brick & Duplicate it When You're Sure it Works

Animate the Ball

Scripts | Costumes | Sounds

New costume:

baseball4

Clear | Import

1
baseball
68x68

2
baseball2
95x95

3
baseball3
71x71

4
baseball4
68x68
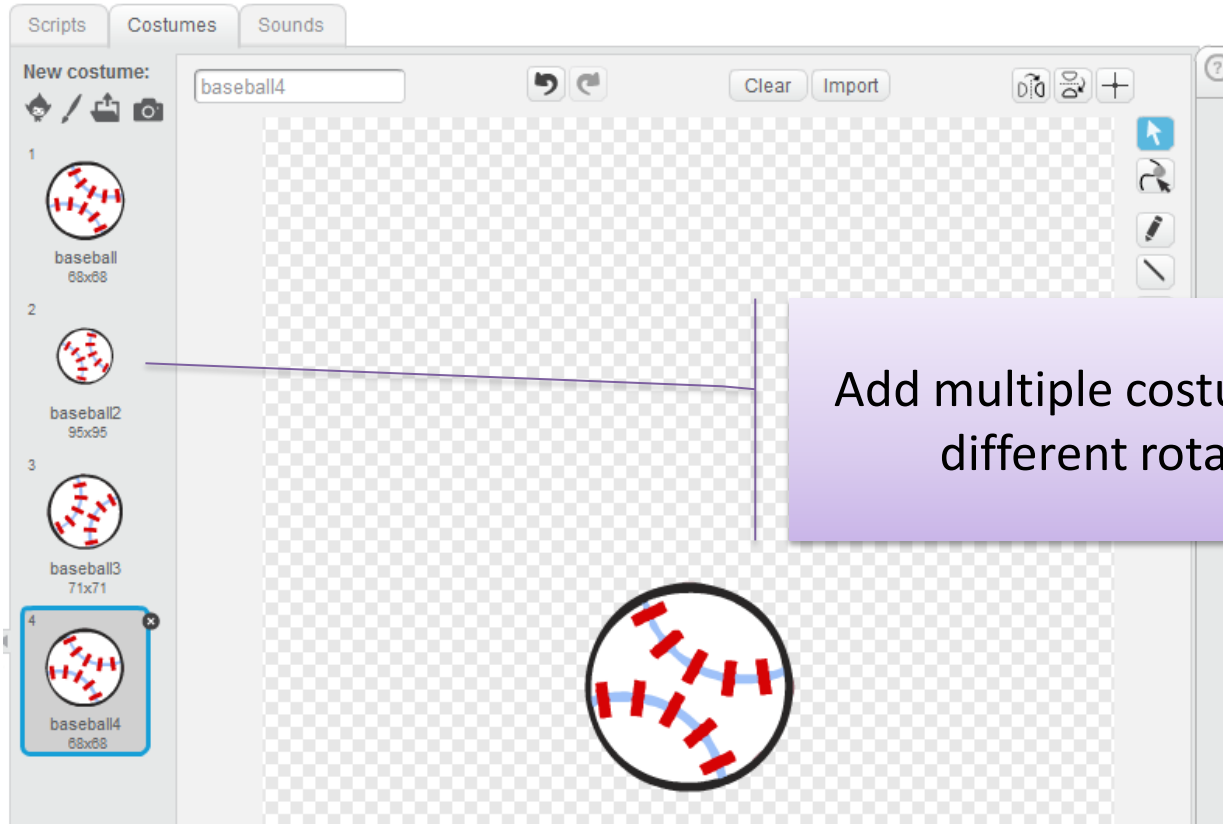
Add multiple costumes with different rotations

Keep switching between costumes: how can you do this?

Add a Music Loop

At the End ...

Upload your project to the Scratch Website
user: **cdathenry1516**   password: **cdathenry**

Access it
from home

Improve it

Show your
friends!

Uploading to Scratch Website