

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

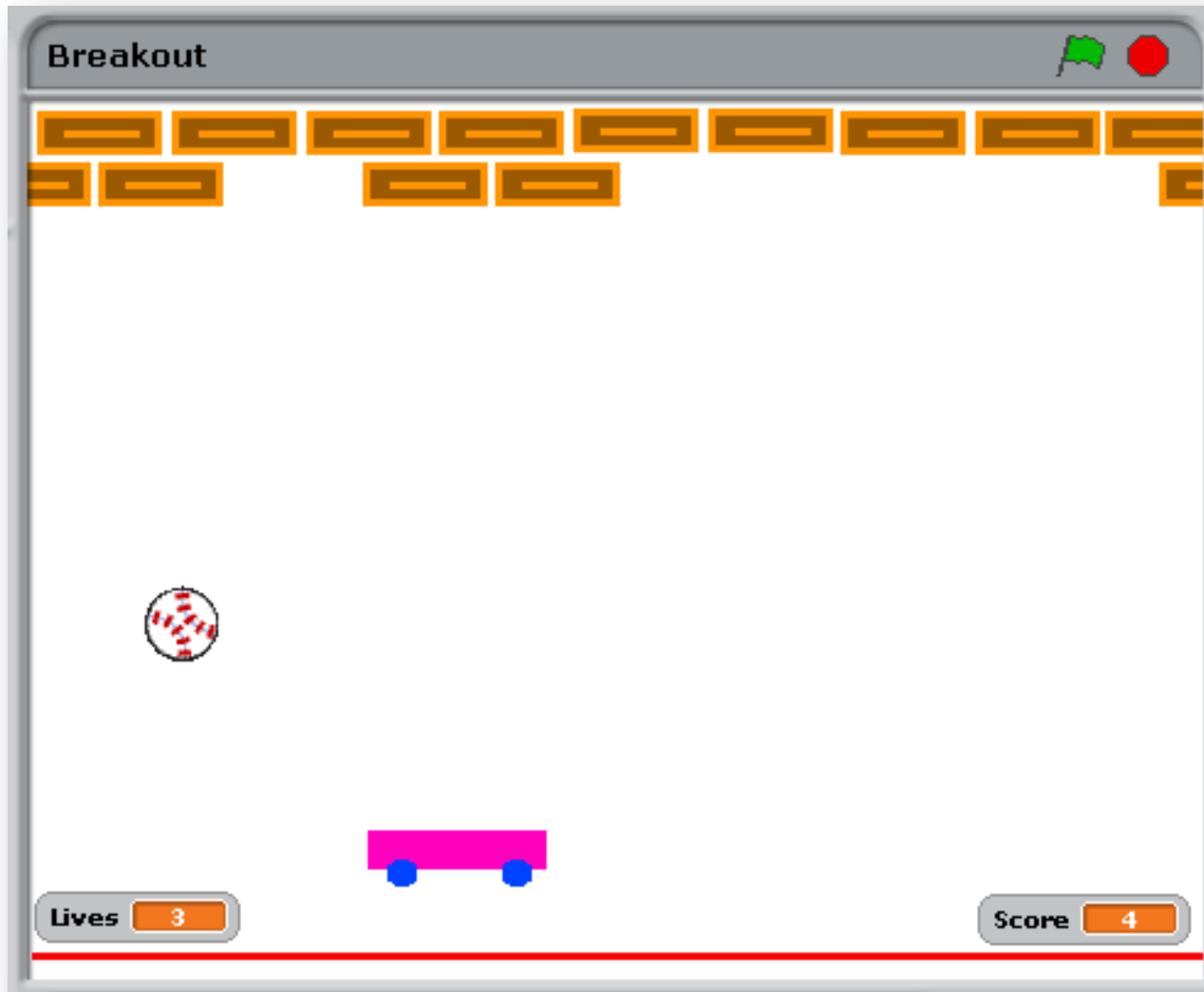
CoderDojo Athenry

SCRATCH Beginners



Code and notes by Martha Fahy

Today's Ninja Challenge: Make a Game Like **Breakout**



Use **Big Ideas** that You Should Understand to Get a Yellow Belt

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

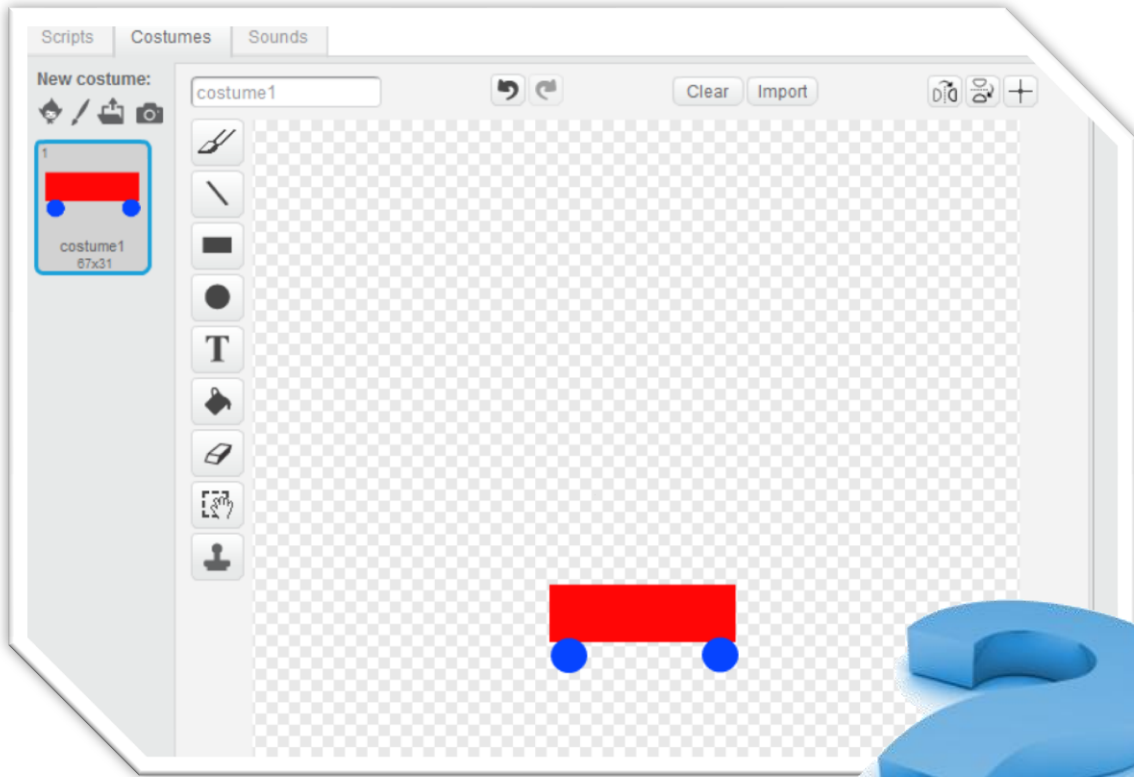
Add an **End Line** and a **Lives** variable;
Lose a live when ball hits line

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

Your game will
have slightly
different steps.

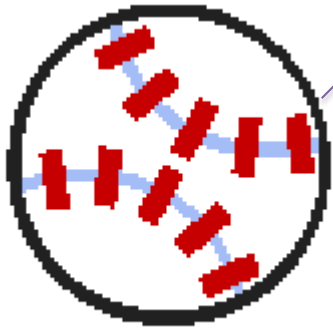
Get one part
working before
moving on!

Design the Bat Sprite & Code So You Control it



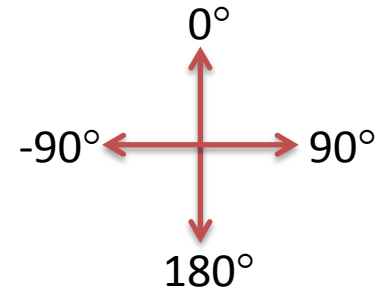
How would you control it with arrows instead?

Make the **Ball Sprite** & Basic Code to Move it



I used a standard image

Will use this to reset position after losing a life



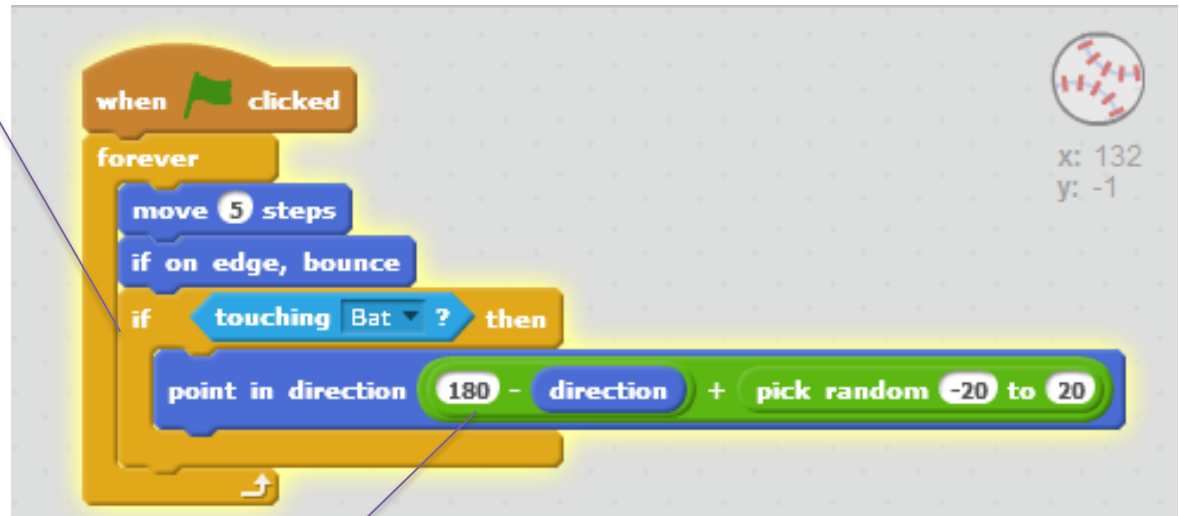
```
when clicked
  broadcast Move ball to start
  forever
    move 5 steps
    if on edge, bounce

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

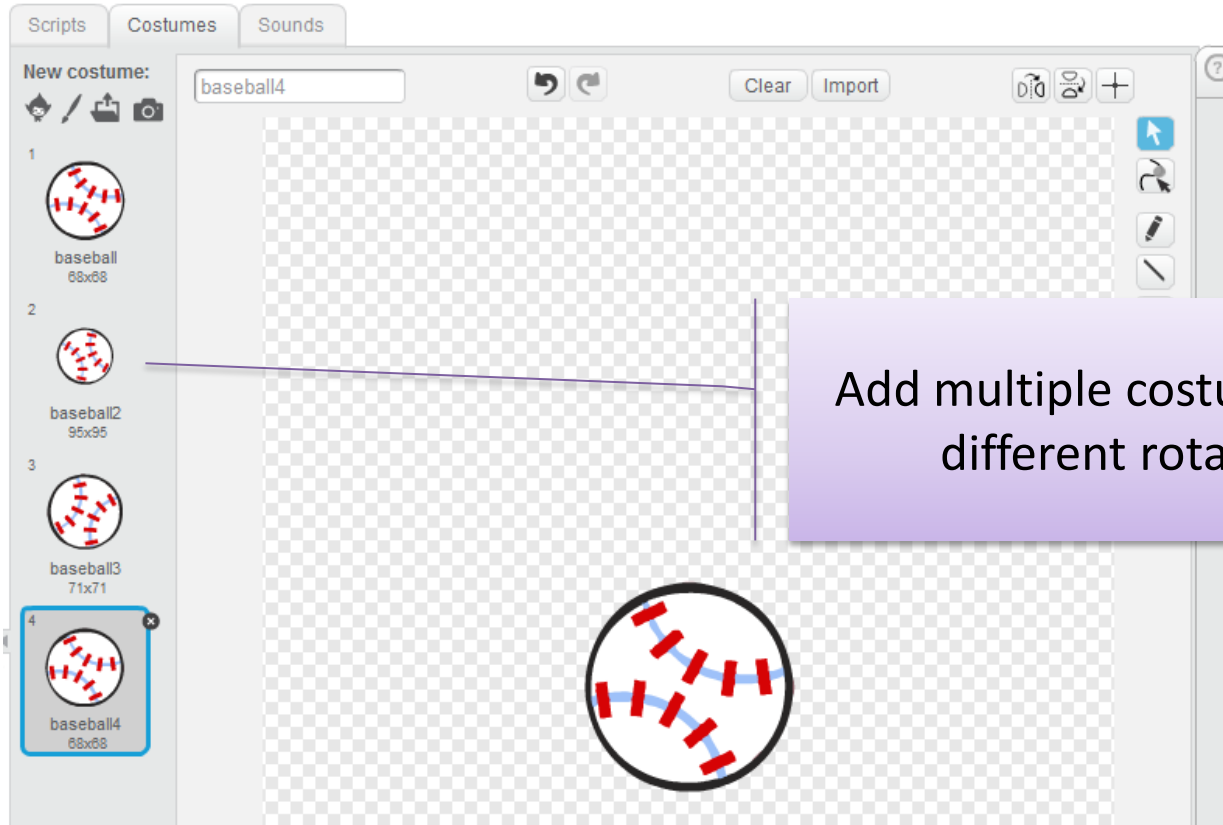


The image shows a Scratch code block for a ball sprite. The code starts with a 'when clicked' block, followed by a 'forever' loop. Inside the loop, the ball moves 5 steps. Then, there is an 'if on edge, bounce' block. Below that is an 'if touching Bat?' block. If the ball is touching the bat, it points in a new direction calculated as $180 - \text{direction} + \text{pick random } -20 \text{ to } 20$. A small baseball icon in the top right corner shows the current position: x: 132, y: -1.

```
when 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

Animate the Ball



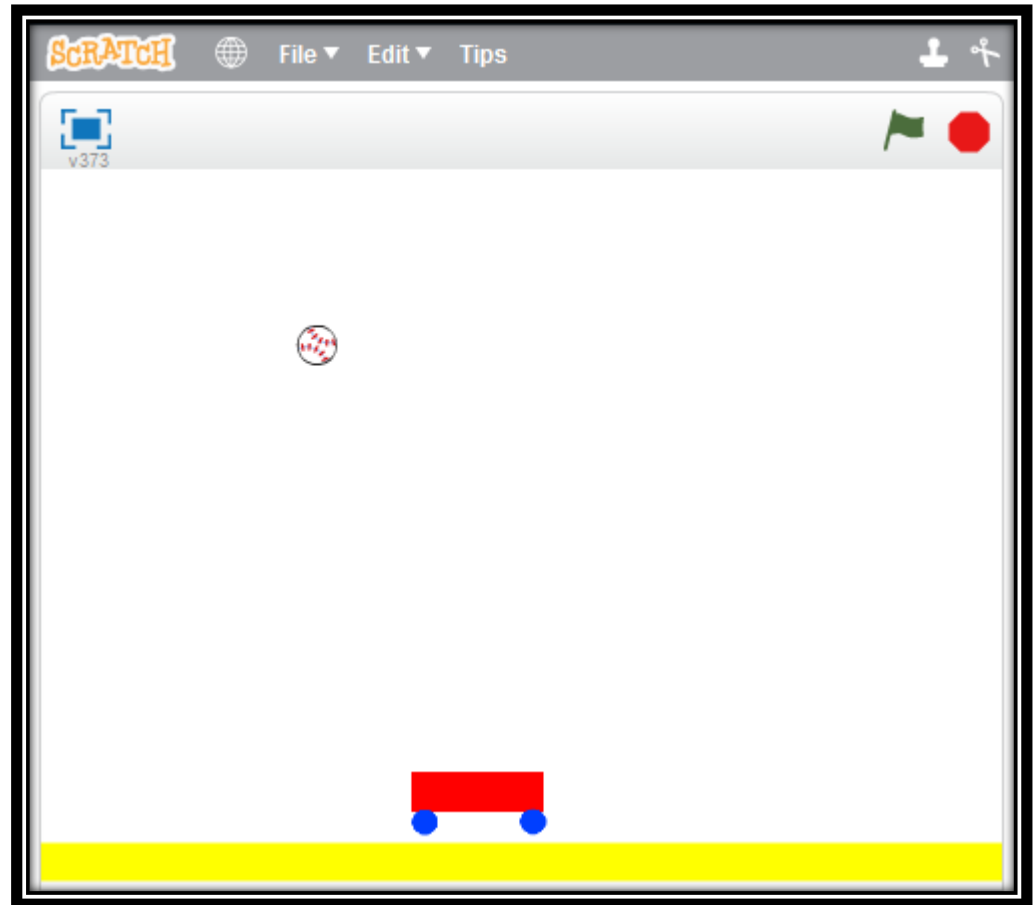
Add multiple costumes with different rotations

Keep switching between costumes:
how can you do this?



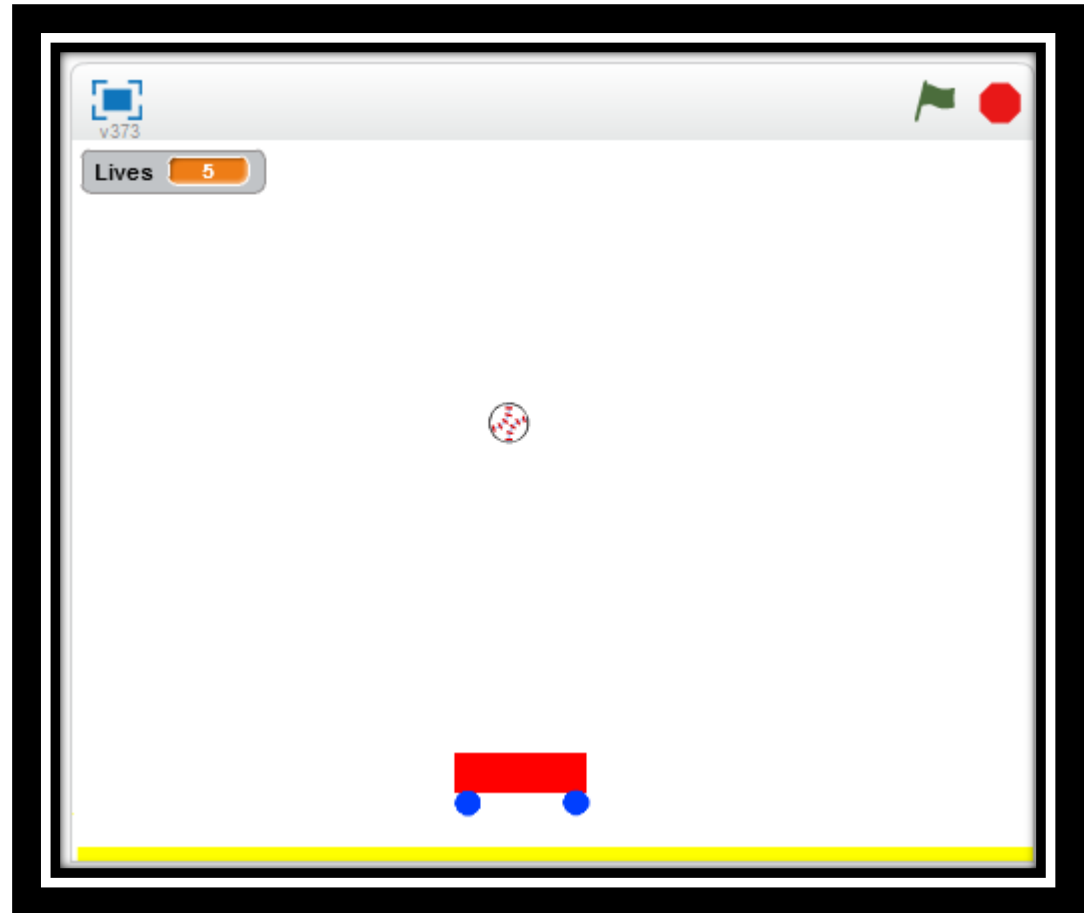
Add an End Line

End Line:
Add Sprite
Or
Draw on Stage



Keep Track of Lives

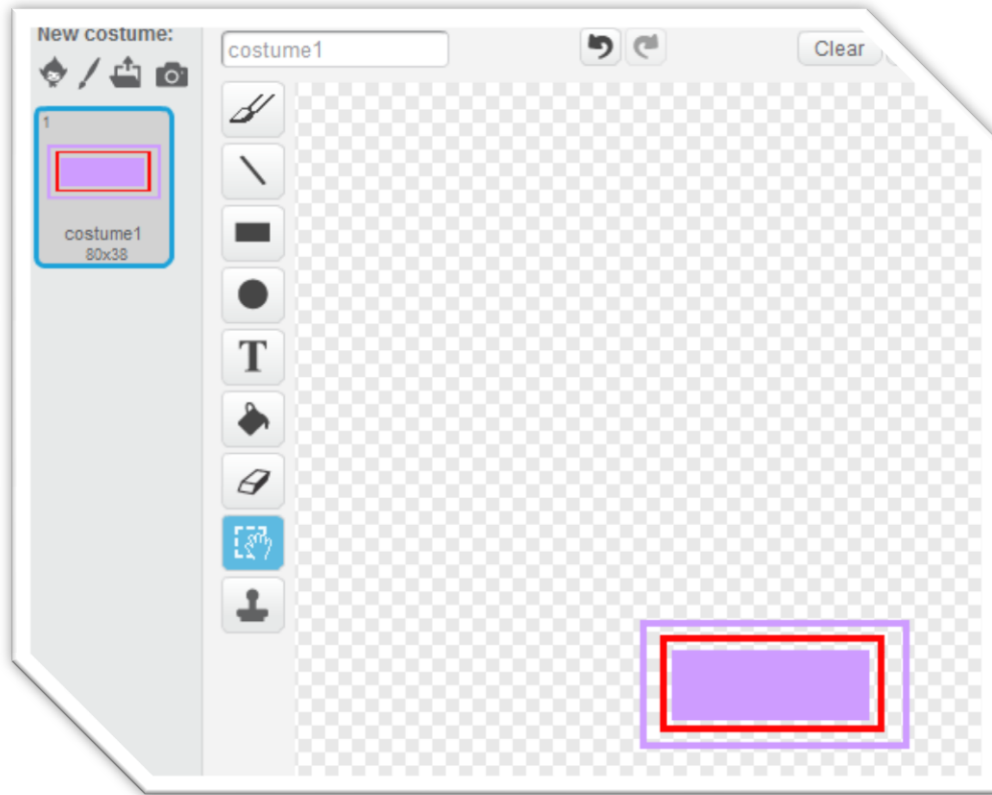
- Variables for Lives
- Start with Lives = 5
 - Stop if Live = 0
- Reduce Lives by 1
- If Ball touches End Line
- Reset position of ball



Add a Music Loop



Design & Code a **Single Brick**

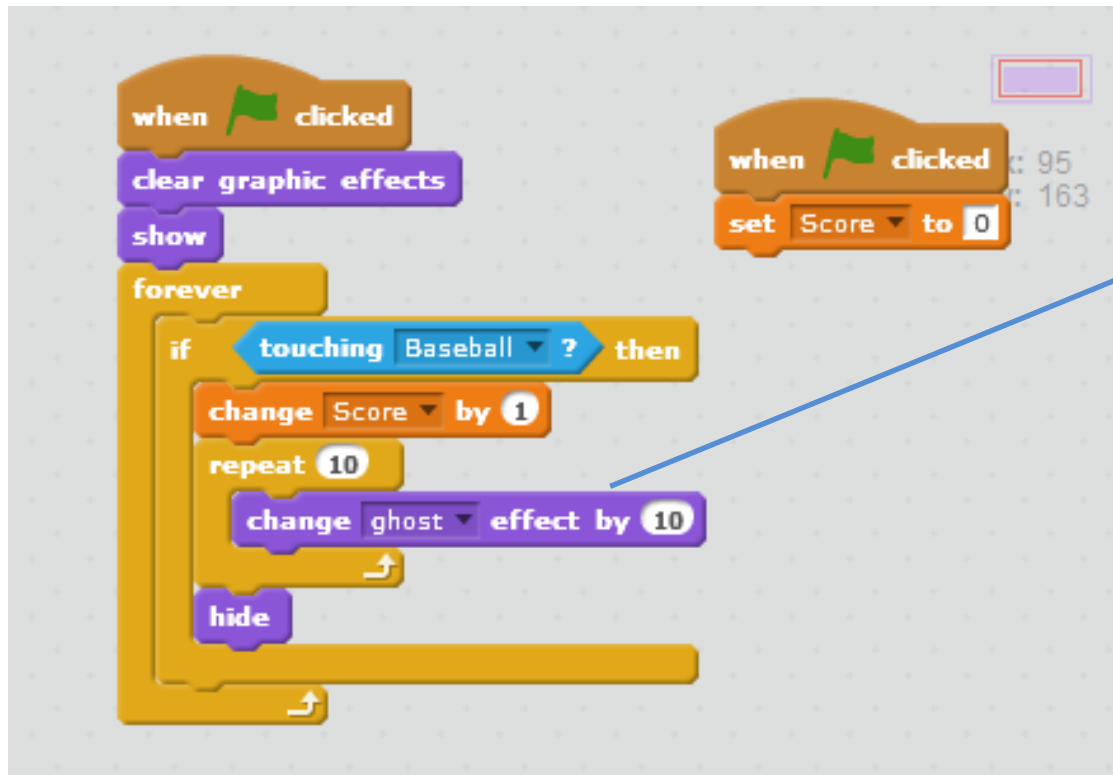


Need a variable for Score

Need code for **Ball** when it receives broadcast:

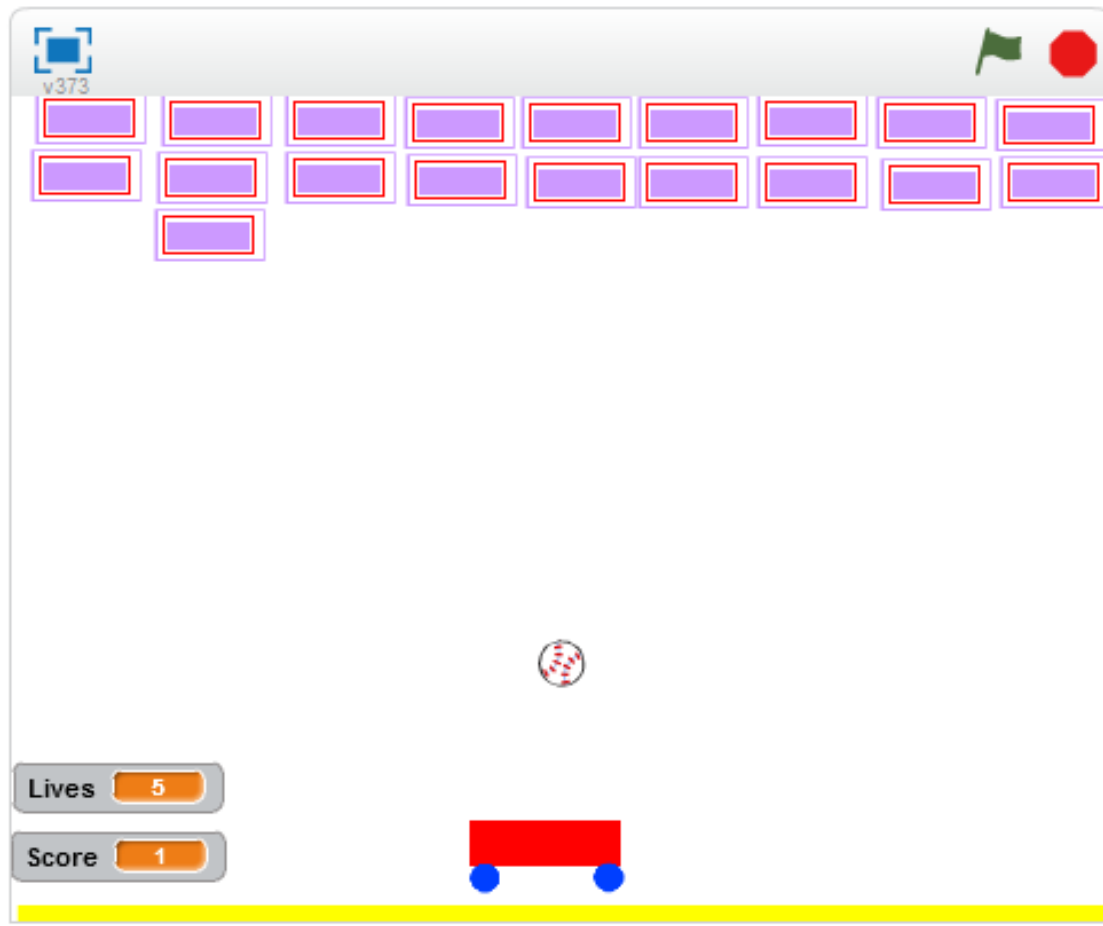
Make a sound effect,
Bounce off brick (copy code for bouncing off bat)

Design & Code a **Single Brick**



Make it fade slowly

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



At the End ...

Upload your project to the Scratch Website

user: **cdathenry**

password: **xxxxxxx**

Access it
from home



Improve it



Show your
friends!



Uploading to Scratch Website

