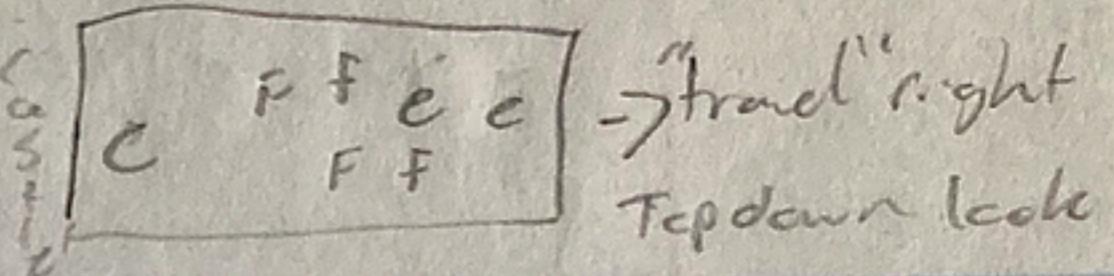


Assignment 3 - Dinosaur run, but with a blaster  
 (and the enemies can shoot you)

- Defend a castle from an attack
- Sideways space invaders?



Class	<ul style="list-style-type: none"> <li>- Recent playable character</li> <li>- Some stock figure</li> <li>- Small blaster w/ bullets</li> <li>- maybe wizard shooting fireballs (simple colours &amp; shapes)</li> <li>- only 3(?) fireballs allowed on screen at once</li> <li>- move up &amp; down</li> </ul>	<ul style="list-style-type: none"> <li>- 600h x 800w</li> <li>- Scrollable background</li> <li>- Score of defeated enemies</li> <li>- only certain amount spawn</li> <li>- maybe upgrades</li> <li>- control with keyboard</li> </ul>
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Class	<ul style="list-style-type: none"> <li>- Enemies → array of?</li> <li>- simple dragons shooting fire back (flying)</li> <li>- collision of enemy to player (&amp; projectiles)</li> <li>- can move up &amp; down</li> <li>- different enemies have different At(?)</li> </ul>
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\* 2nd Idea - Block Breaker - 600px x 700px - Score, 100 per brick - ball speeds up

Class	Player (Bumper/Paddle) → Size, Position, colour?	40 x 15? x
Methods	<ul style="list-style-type: none"> <li>- Movement → left/right</li> <li>- collision with walls</li> <li>- Lives → start with 3, lose 1 when ball leaves screen</li> </ul>	55, x 15? ✓

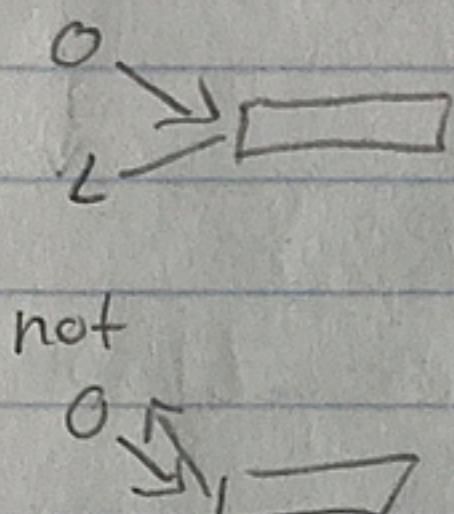
Class	Ball → size, position (start at paddle), colour?
Methods	<ul style="list-style-type: none"> <li>- Movement</li> <li>- Direction, speed → speed up on next level - start random direction</li> <li>- Collision with bricks, walls, paddle</li> <li>- lose life when off bottom of screen</li> </ul>

starts off screen, then move to correct spot

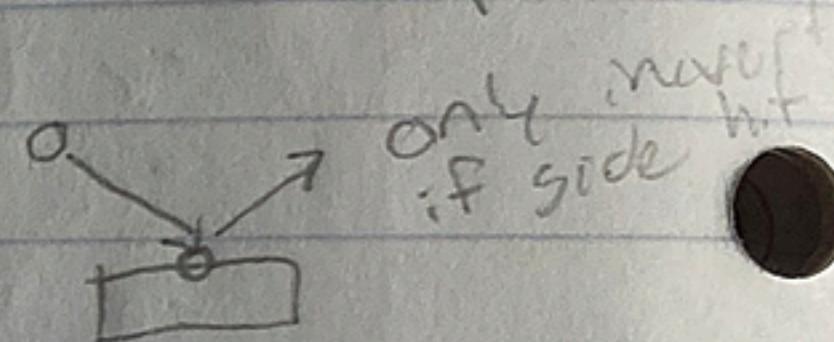
Class Brick → array in game class, size, location  
Methods - Collision with ball → move offscreen  
↳ is hit

50, 20? ✓

issue → Ball collision with paddle on side and not go up



check if ball is in paddle and below  
top of paddle and not in sides of paddle  
↳ don't invert y



IsHit()

on collision (ball inside brick), move offscreen

Ball hits Brick

- invert x if hits side, but don't invert y
  - invert y if hits top/bottom, but not invert x
- check if ball is in brick x

Issue → ball gets stuck in paddle if it hits the side while paddle is moving

Fix? → offset by paddle speed when button is pressed in same direction

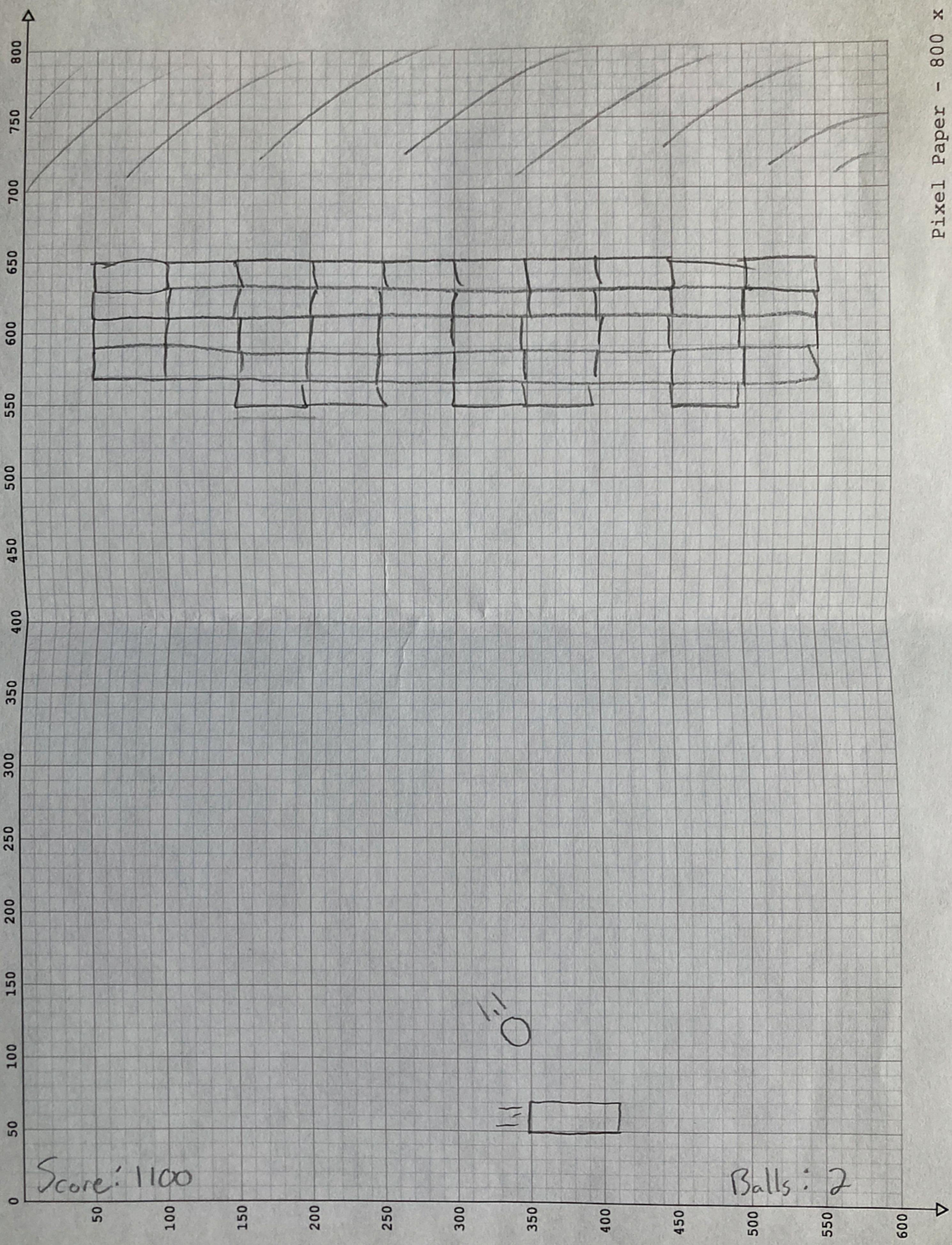
fixed(?)

issue → ball hits blocks on "corner" (ball as square hitbox)  
and does not ricochet

Fix? → Change ball hitbox to detect based on distance  
from centre

Issue → Ball moves faster or slower

Fix → Normalize (somehow)



Pixel Paper - 800 x 600  
Graph Paper for Screen Coordinates