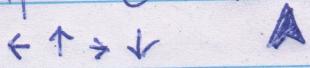


# [Asteroids]

Will be doing a clone off Asteroids  
for assignment 5.

## Rules/understanding

- player controls ship with arrow keys.  

- Use space bar to shot a bullet from the front of the ship  

- player gets three lives for the game
- Each level gets a certain amount of asteroids
- Asteroids have 3 sizes large, medium, small  


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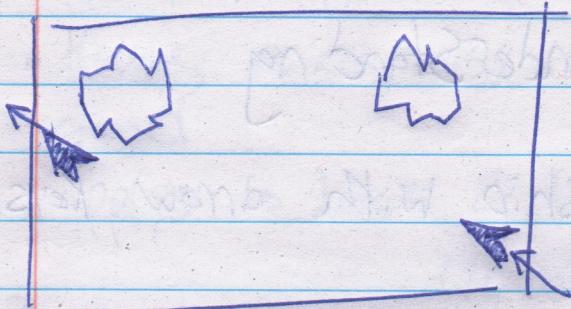
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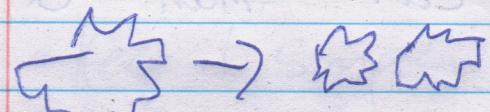
bullets

- If player or asteroids fall more off screen they will appear on opposite side

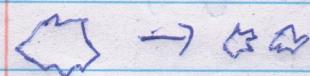


- If player is hit ~~hit~~ by asteroid they lose a life and respawn at certain of screen. Asteroid will break into 2 sizes

- If asteroids are hit by player or bullets they will split into smaller asteroids



Large breaks into 2 medium asteroids

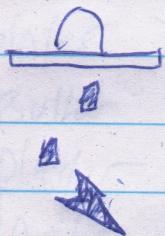


Medium breaks into 2 small asteroids



Small breaks into nothing

- Space Ship can fly across screen and shot at player

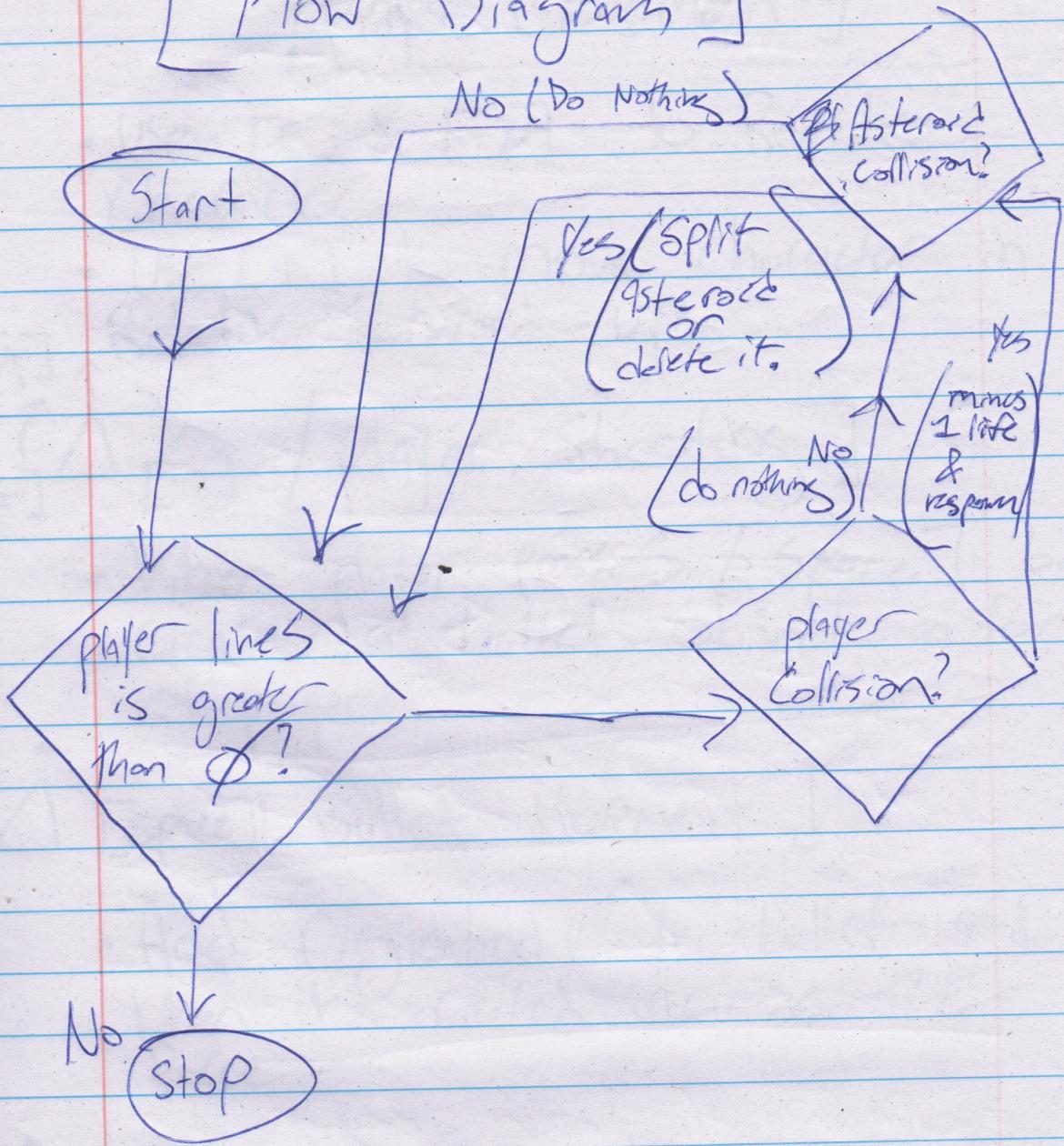


- Ships are worth 200 points
- Large asteroids are worth 20 points
- Medium asteroids are worth 50 points
- Small asteroids are worth 100 points
- Game keeps going until all lives are gone.

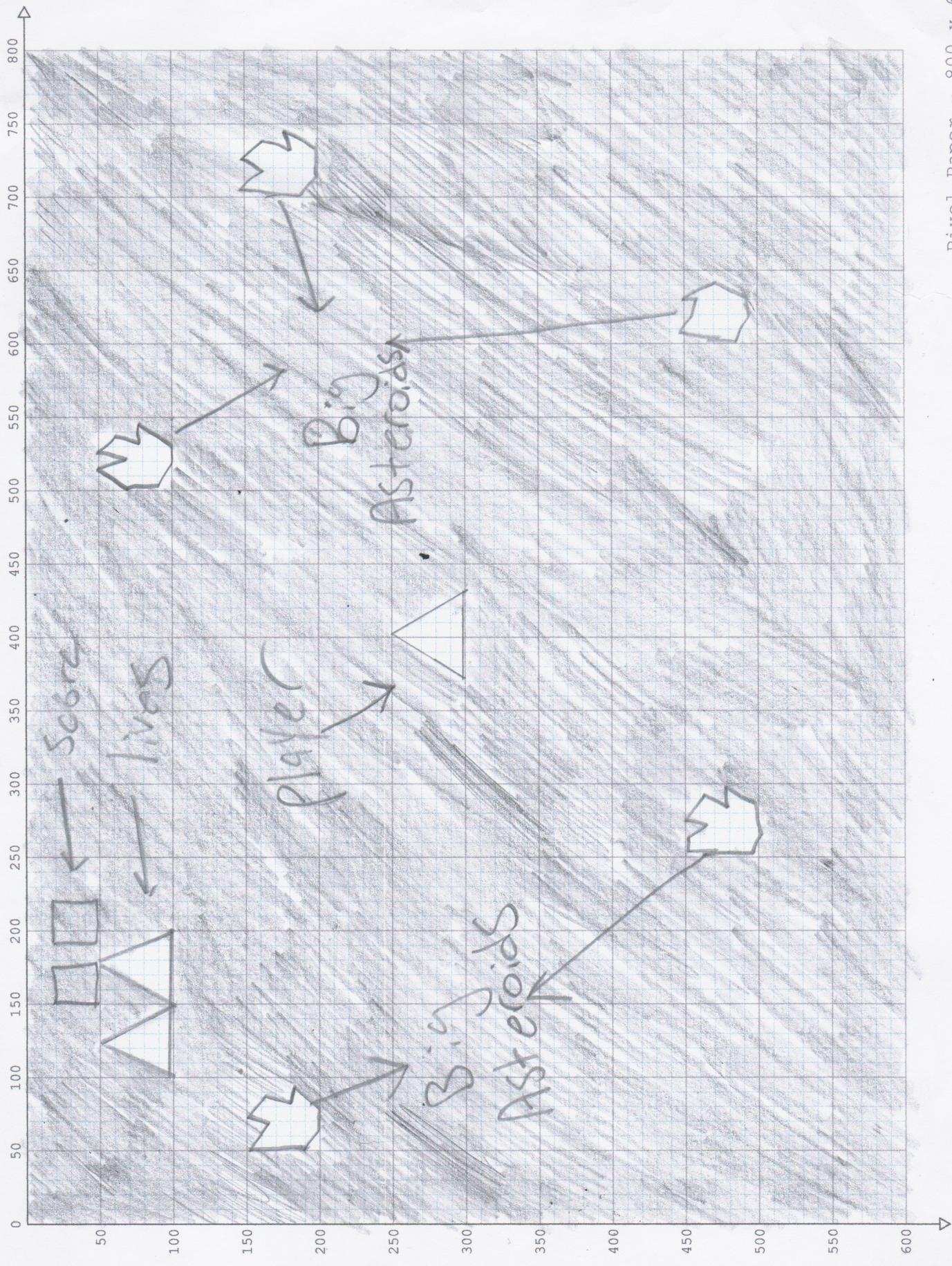
## [ Scripts ]

- player movement
- Astroid movement
- player shooting
- Bullet movement / disappearing after certain distance
- player collision
- Asteroid collision / break
- Space Ship movement
- Space ship shooting

## Flow Diagram

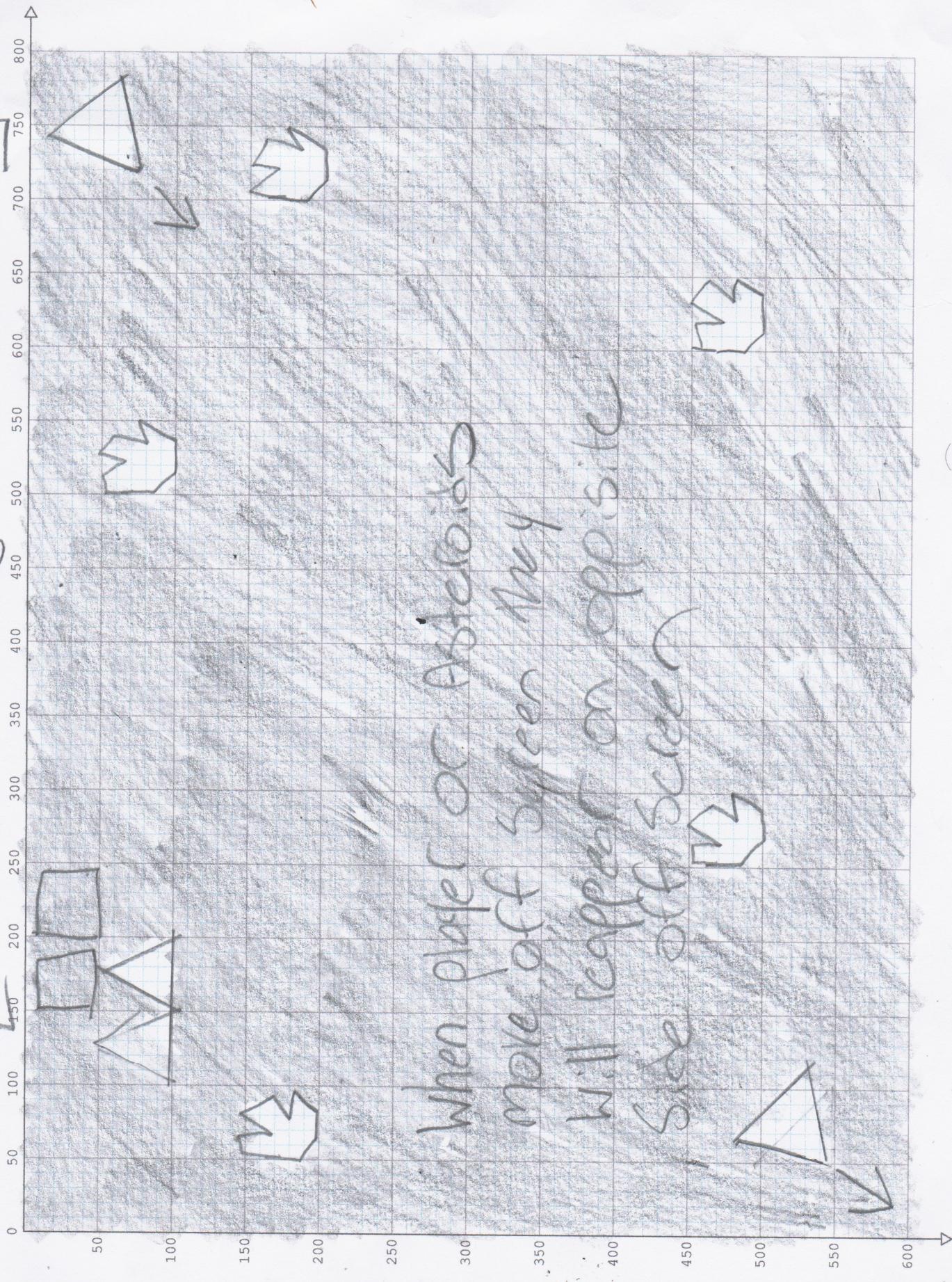


# Start of Game

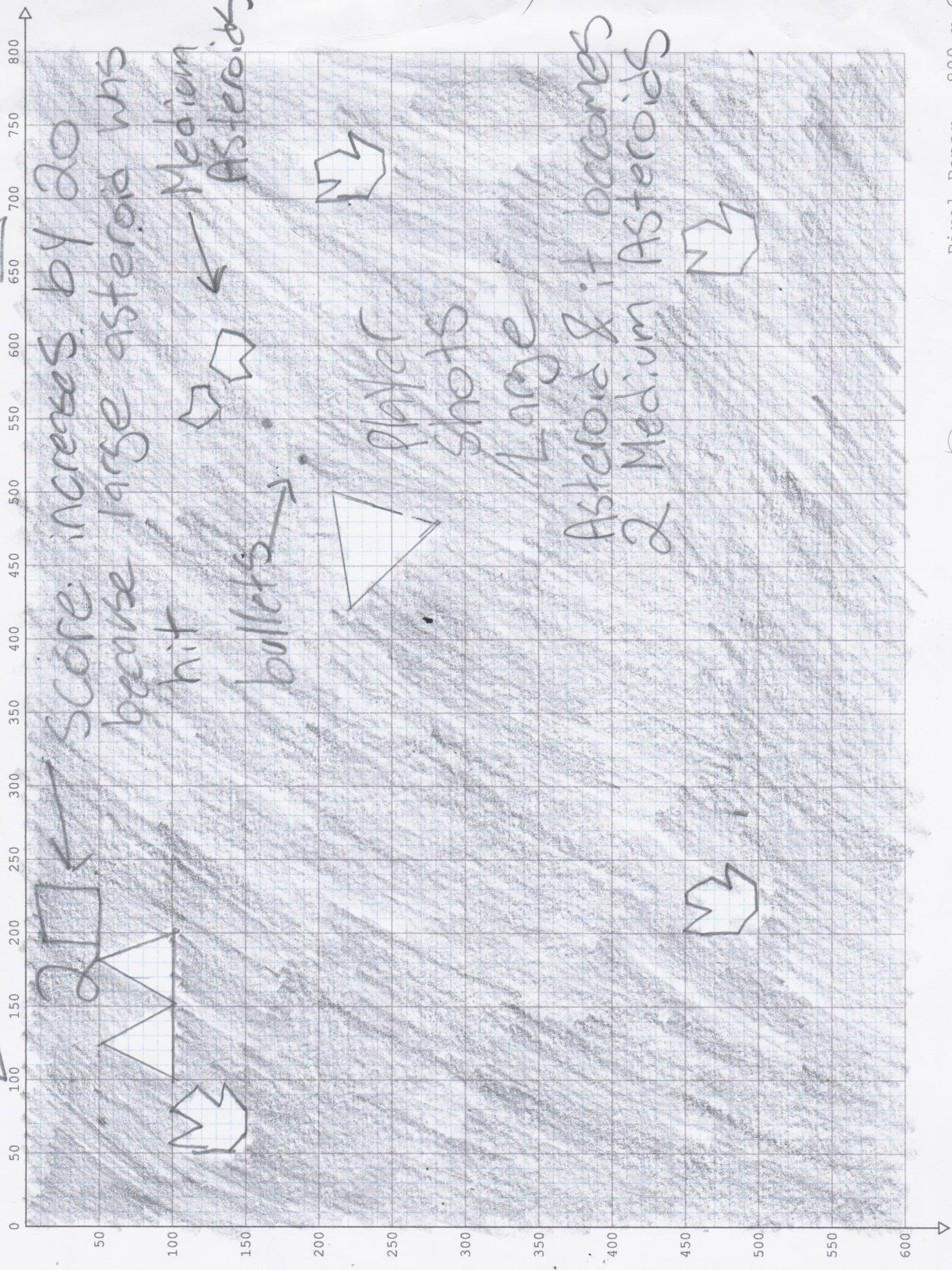


Pixel Paper - 800 x 600  
Graph Paper for Screen Coordinates

# Player Moving off Screen



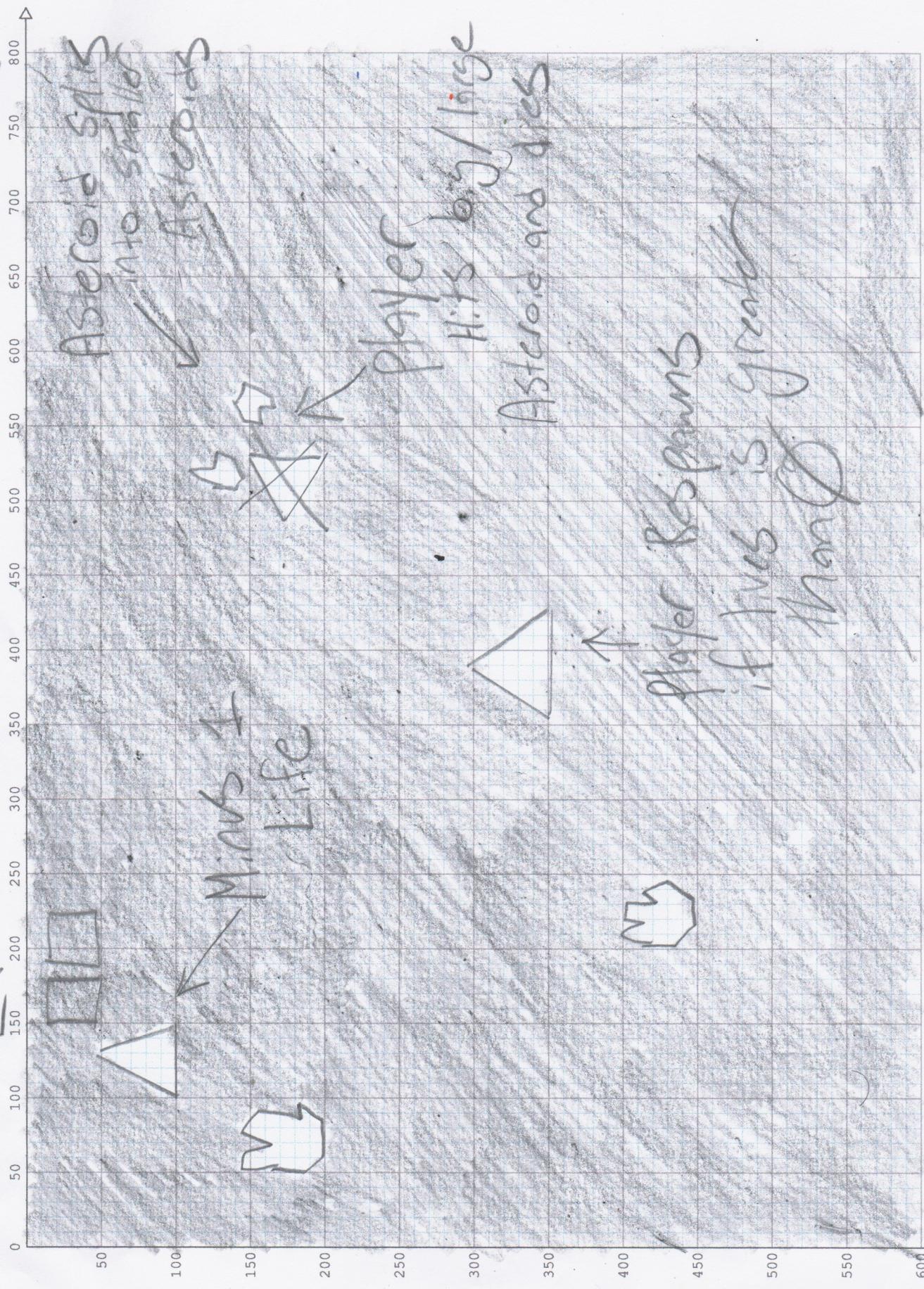
# Player Shooting Asteroids



# Enemy Spaceship Attacks

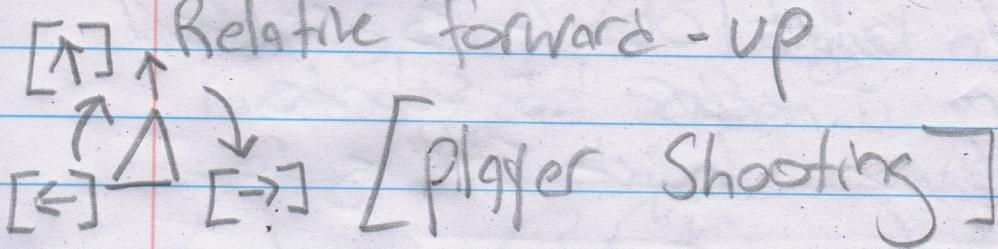


# Play Collides with Asteroid



## [Player Movement]

- Use [ $\leftarrow$ ] & [ $\rightarrow$ ] to Rotate Character
- Use [ $\uparrow$ ] to move character in Relative forward - up



- When player presses [Space] bar create a bullet object in front of player

## i [space][ Bullet Movement ]

- Add rigidbody to bullet and when it's created increase the force

↑  
• Was moving the bullet in render function but wouldn't work with Wraps on outside of game board as the render world keeps putting it back at its original location.

## [Bullet Deletion]

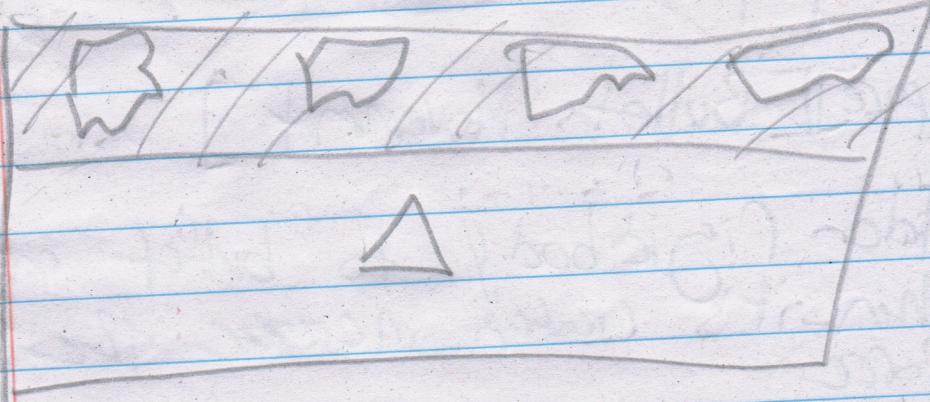


- When hitting an asteroid delete the object in the on collision function

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- After bullet object is created destroy it after 1.5 seconds.  
Don't want bullet staying to long

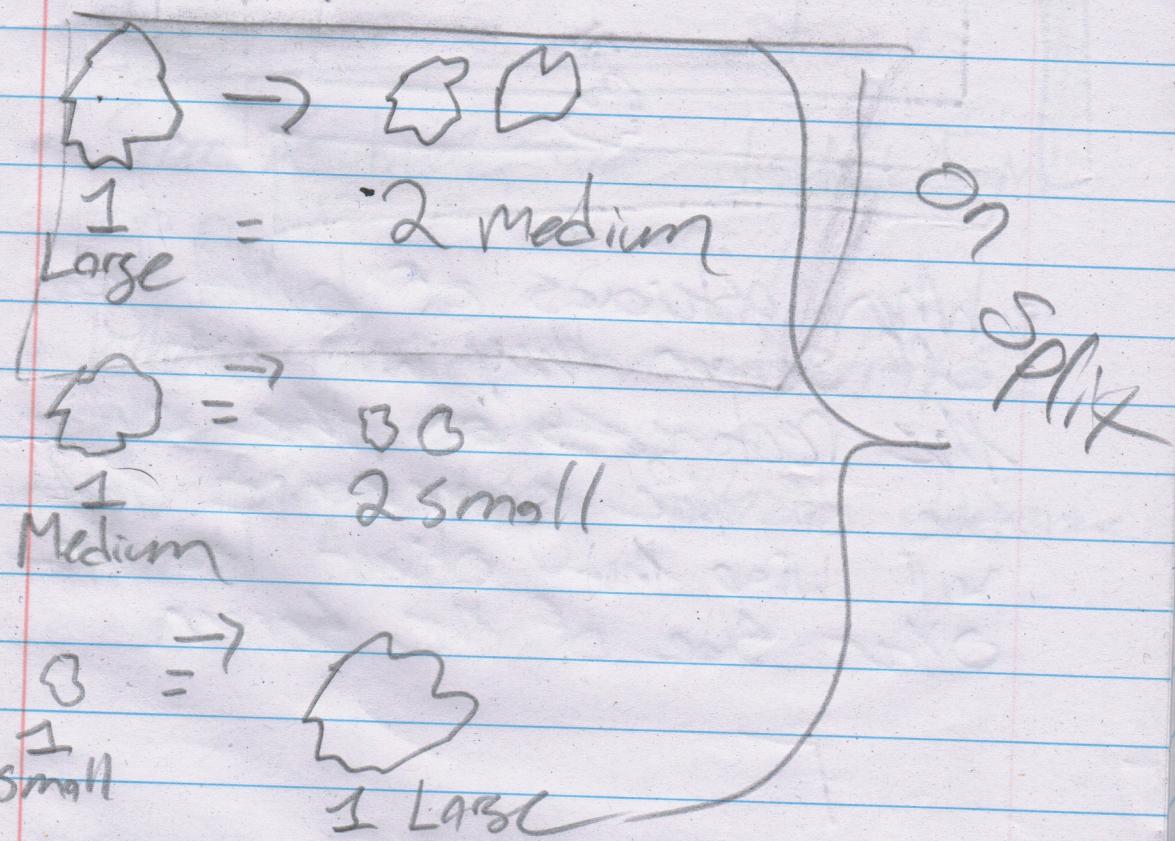
## [Asteroids spawn]



- Spawn 4 large asteroids in top half of the map when game starts

## [Asteroid Collision]

- When hit by bullet or player  
Split into small asteroids unless  
if it's already a small asteroid  
then Spawn 1 Large asteroid  
randomly on screen.



## [Game Wraps]

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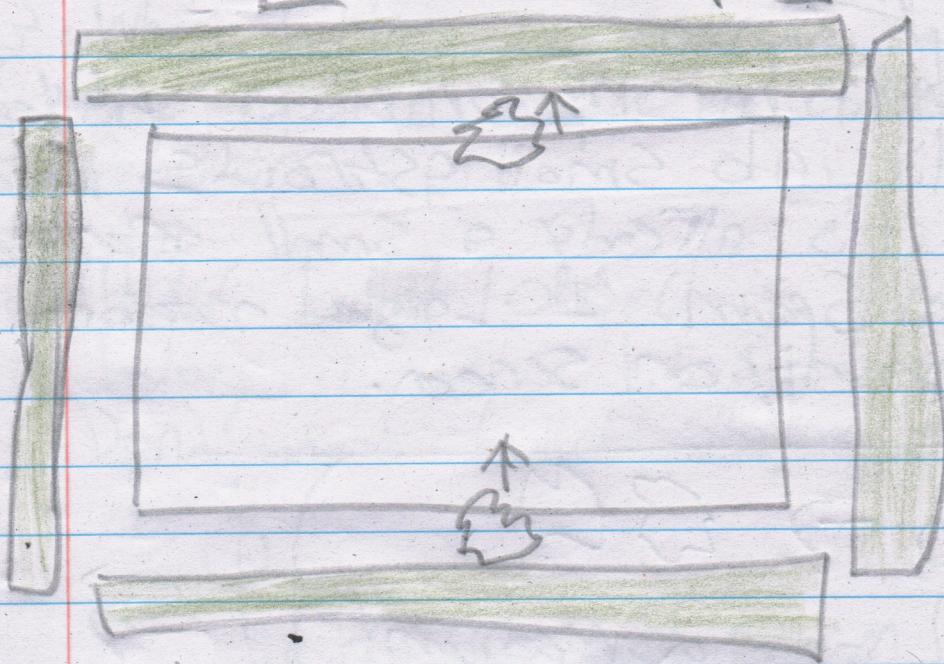
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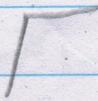
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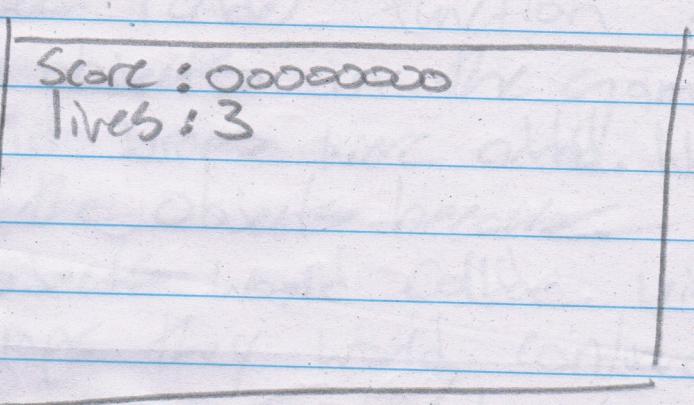
SUNDAY



When asteroids or bullet goes off screen they will hit the rectangles on the outside of the gameboard that will wrap that object to the other side of the screen



## [Game UI]



- Score & Lives are displayed in top right of screen.
- When asteroids are destroyed increase the score
- When player hits asteroid decrease lives

## [Challenges]

- Used render function to move all objects in the game. Worked until Wraps were added. Need rigidity on the objects because when the objects would collide with the Wraps they would continue in the same movement/direction because render function would overwrite the On Collider function.

### Position placement

- When a script would reference an object on the screen if the reference was left null it would mess up the whole function.

Ex.) Large asteroid would create a medium asteroid attribute so on collision it could split and add score but if I forgot to drag a medium asteroid object into the side panel all instances of collision wouldn't work just from a mistake