

Midterms Proposal

Tower Types:

- **Basic Tower**
 - Shoot 1 bullet at a time at detected enemies within a certain radius.
 - Upgrades available for this tower are increasing the detection radius, along with increasing firing rate. Upgrade will fire rate and detection radius by certain increments, up to level 5.
- **Buckshot Tower**
 - Shoots 3 bullets in a cone, short detection radius.
 - Upgrades include increasing the bullet count and spread size. Spread size increases by certain increments per level. Bullet count increases to 4 bullets at level 3, then 5 at level 5.
- **Multishot Tower**
 - Shoots 3 bullets around the tower, medium detection radius.
 - Upgrades include increasing the bullet count and detection radius. Detection radius increases by certain increments. Bullet count increases by 1 bullet per level, up to 8 bullets.

Math Concepts for Each Tower:

| Tower Type | Mathematical Concept |
|-----------------|--|
| Basic Tower | Vector Normalization, Exponential Scaling (Fire Rate) |
| Buckshot Tower | Trigonometry (Angle-Based Spread), Arithmetic Progression (Bullet Count) |
| Multishot Tower | Unit Circle (360° Spread), Linear Growth (Bullet Count) |