

# 3D Tower Defence Game

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**Description:** This game has the player strategically place a number of upgradeable defence towers on a grid in 3D space to destroy waves of drones before they reach a finish line.

## Tower Types:

Linear “drill” tower: Fires a beam at the drone causing steady damage while the beam is active. Special Upgrade: The beam arcs to multiple drones after hitting its target (one drone per upgrade).

Radius attack tower: Emits a circular blast about the base of the tower when drones are near, damaging any drones in range. Special upgrade: Drones that are hit by the blast have a chance of being frozen for a period of time.

Laser tower: Powers up a powerful, singular laser shot that deals high damage to a single drone. Special upgrade: Perforates and damages any drones in the way of the laser before it hits its target.

Artillery tower: Lobs a projectile at a drone, causing splash damage where it lands. The shot has inherent inaccuracy due to the nature of artillery. Special upgrade: Increases splash radius.

Swarm tower: Releases a swarm of “locus” that individually try to fly toward and damage a uniquely prioritized target. Special upgrade: Increases the number of locusts that may be active at one time.

SAM tower: Fires a homing missile that may hit aerial or land based drones. If its target dies before the missile has reached it, the onboard tracking system finds a new target to destroy. Special upgrade: Smaller missiles branch off of the main missile in flight, deal half the damage of the original missile, and find the closest target when they are launched.

**Tower Upgrades:** Every tower can be upgraded in four ways: damage, rate of fire, range and special. The cost of each upgrade increases in a linear fashion and as such there are no upper bounds on any upgrades (with exception to the radius tower, which has a single special upgrade to begin freezing enemies).

**Targeting priority:** The player will be able to choose the targeting priority for each tower as either front drones, back drones, strong drones or weak drones. All targeting priorities will benefit different types of towers, for example a laser tower with penetration power would benefit from aiming at the back of a group of drones to maximize the number of drones hit, whereas a linear may wish to destroy the weakest drones to guard the finish line.

**Game play:** Drones are simple geometric objects that traverse the grid over a hard-coded path. The player earns cash by destroying the drones before they fully traverse their path. If a drone manages to reach the finish line, the player loses a life. The game is over when the player loses all their lives. The drones get progressively more difficult as well as becoming geometrically more advanced as the game progresses. The game has a total of 20 levels where each level excluding boss levels have a set number of identical drones.

**Levels:** There are 20 levels in the game. Every fifth level is a “boss” stage in which the player must destroy some drones from the previous four levels, as well as two special boss drones which give the player extra cash and lives if they are defeated.

## Key commands:

- “a” toggles anti-aliasing
- “p” pauses the game
- “+” and “-” zoom in and out respectively
- left click pans the camera about the grid
- right click centers the camera to a cell
- cheat code: type in cp411 to get \$411,000 cash and again for even more :)

Have fun!