



Call the Wizards Documentation

Thaum

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Game Summary

Enter a fantastical realm, summon elemental wizards, and defend ancient dragons against an onslaught of monsters, in this exciting and imaginative MR/VR game that puts the power of magic at your fingertips.

Game Genre: Single player / Tower Defense

Theme/Mood: Fantasy, Colorful, Playful

Target Audience: Teenagers

Play Time: 10 mins (Demo), 300 mins (Full)

Platforms: Meta Quest 2/3/Pro

Price/Distribution: \$12.99 (App Lab)

Release Date: Oct 2023

Developer: Thaum Games

Key Features:

- Combine elements to summon 10 wizards with unique spells and talents.
- Pick up ultimate spells and unleash them upon enemies.
- 9 levels across 3 worlds, with dragons to protect and monsters to defeat.

Mixed Reality Features:

- Transform your room into a magical landscape, with mountains and trees.
- Play in a sky world, or turn on cameras to see your room walls.
- Perfectly designed to pick-up and play with your hands.

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About this Document

This document describes the design and project plan for Call the Wizards, an upcoming MR/VR game for Meta Quest.

The final product may vary slightly from the design presented here, as further challenges and opportunities arise.

This project is the recipient of funding as part of an MR App program to produce Mixed Reality vertical slices for App Lab by the end of 2023. The purpose of this document is to satisfy Milestone 1 of this program.

Author & Contact Information

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Lead / Engineer / Designer

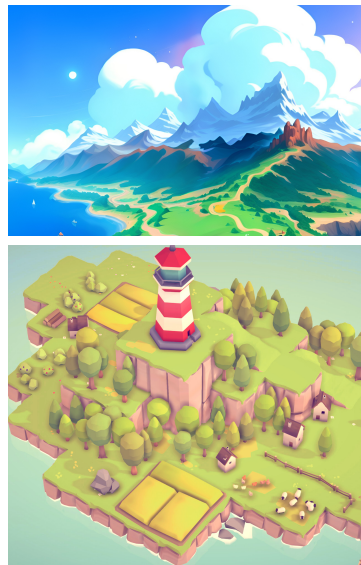
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Aesthetics

Key Art / References



Brand / Wizards



World



Enemies

Story

"Goblins grunting at your gates? Skeletons scurrying in the sewer? **Call the Wizards!** We're only a hop, skip and a summoning away, to save the day! Purchase a Summoning Circle today!"

A staff of ten elemental wizards are on-call to provide magical services to those in need.

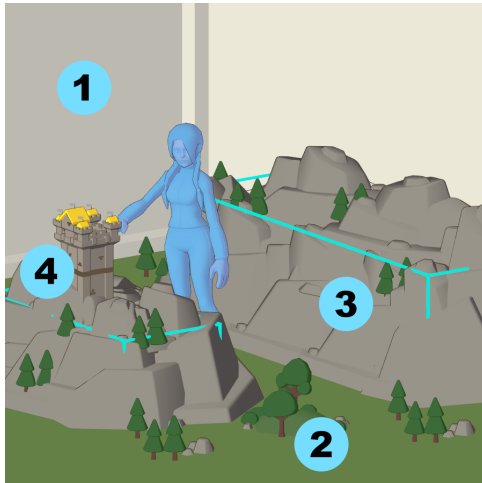
Xenomancer, an evil monster from the Void Realm, is attacking the eggs of peaceful dragons across the world. Luckily, there's always Summoning Circle and a few gems lying around...

Mood References

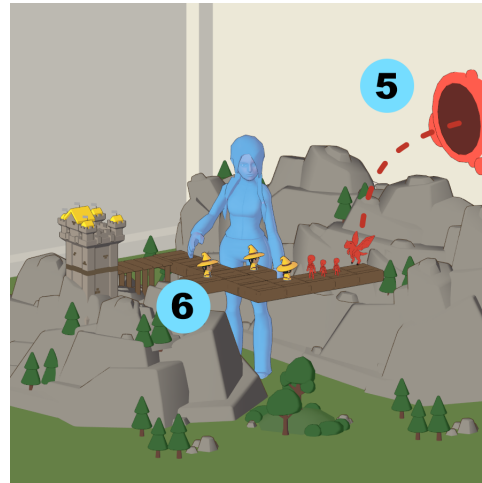


MR/VR Design

Passthrough & Scene Understanding Usage



- 1. Passthrough/Walls/Skybox
- 2. Floor
- 3. Volumes



- 4. Tower placement (deprecated)
- 5. Creep portal in air.
- 6. Wizards and creeps on land.

Background: The visual skin applied over the player's room objects. Each world will use the same generation methods, but with different visuals.

Passthrough/Skybox: If passthrough is enabled in Settings, then the walls and ceiling will show the camera view. Otherwise, this will show an illustrative skybox texture.

Floor & Walls: The floor shape is filled procedurally with objects, such as clouds. The border of the floor is tiled with taller objects, to create a stronger visual boundary.

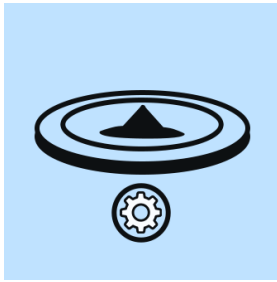
Volumes: Volumes are replaced by procedurally generated cliffs/terrain with vegetation. This creates the feeling that the room is transformed into something fantastical. If there are too few volumes, then some small/low fake volumes will be created, so the room isn't empty.

Capture/Loading: At launch, the scene is loaded, if present. If there is no scene, then the game uses Guardian Mode. In the Settings, there are 2 buttons: Use My Room & Setup My Room.

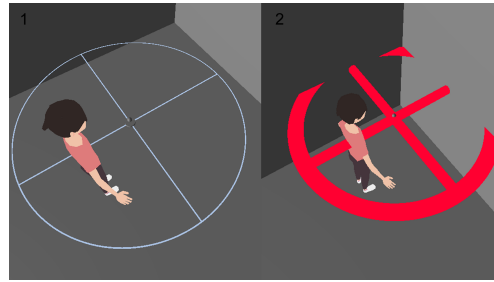
Guardian Mode: If Room is disabled/not configured, then Guardian is used to generate walls.

Abstraction: The app uses its own Room System as an abstraction on top of Scene Understanding. This allows other APIs including easier/faster testing. If there is any problem loading the above rooms, then a Fallback room is loaded.

Play Scale & Position



Hub Gizmo & Settings Button

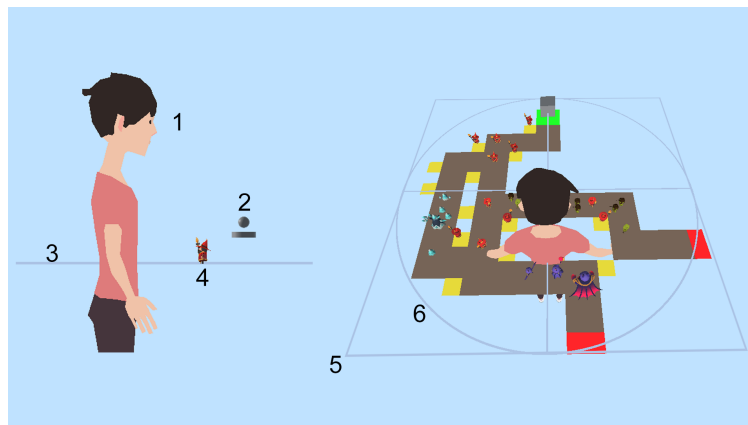


1. Valid Hub position

2. Invalid Hub position

Hub: The midpoint of the play experience. It appears as a prominent, physical gizmo, but also acts as the anchor point for other UI. The player can easily move it to a new location/height.

At launch, the Hub is automatically placed near the centroid or a nearby optimal position. The Hub position must meet the requirements of the playable area; it cannot be too close to a wall, floor or volume.



1. Eye level 2. Hub 3. Gameplay Height

4. Character size 5. Gameplay Boundary 6. Gameplay Safe Area

Height: Gameplay is intended to take place at relaxed elbow height. During automatic Hub placement and manual positioning, this height will be favored.

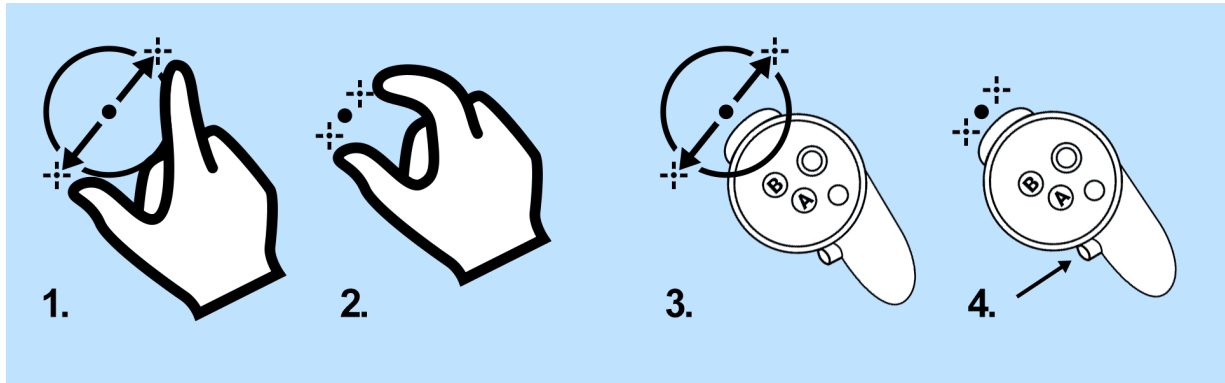
Boundary: Gameplay requires a horizontal space of 2x2 meters.

Virtual Locomotion/Scaling: There is no mechanic for the player to virtually relocate or scale their viewpoint. This game is **Room Scale Only**.

Controls & UI

Controls

The entire game is built to work with abstract controllers that provide positional pointer & trigger input data. The pointer provides 2 finger positions and a midpoint, with a third axis pointing away from the controller. The trigger provides a variable between 0-1 that indicates selection.



1. Hand unselected 2. Hand selecting 3. Controller unselected 4. Controller selecting.

Controller	Pointer Position	Select Trigger (%)	Select (Boolean)
Hands	Thumb/Index midpoint	Relative distance between thumb/index (with max ~7cm)	OVR Pinch gesture
Hardware	Offset on forward axis of controller	A/B ButtonDown = 1 Index/Grip: Trigger value	A/B ButtonDown Index/Grip Triggers > 0.95

Accessibility & Ease of use

The game is fully playable with only 1 Pointer. Some interactions will support dual pointers, but it's not required. With hand tracking, only "pinch" is supported as the selection gesture. With hardware, all buttons are mapped to the same input (selection) so it should be easy to play any way that feels natural to the player.

Very few VR games use a pointer like this, so it is quite an experimental part of the experience. The aim is to provide an experience similar to what players get with a mouse on PC and touch screens on mobile, but with a natural and approachable 3D interface.

Interactive Types

Wherever possible, interactable items will be presented as an icon on a 3D spherical or cylindrical button. A tooltip will appear when the interactable is hovered.

Hoverable: Triggered when pointer is hovering.

Button: Triggered when pointer is hovering and selected.

Draggable: Triggered when pointer was hovering, selecting, and then moved without releasing. It may have a validation check before dropping, and snap to original position or a 'drop zone'.

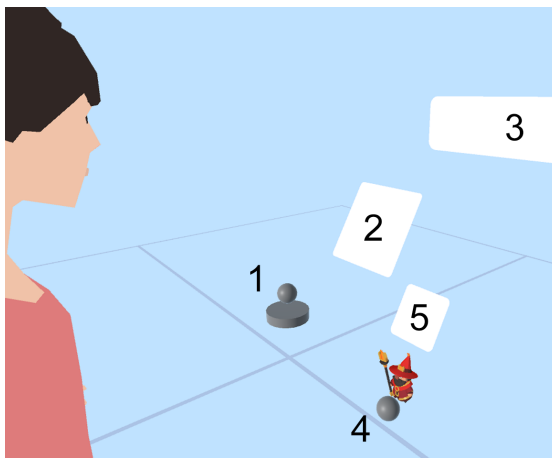
GUI / Menu Guidelines

Minimize GUI: Use diegetic designs and popup hints to avoid cramming the scene with UI.

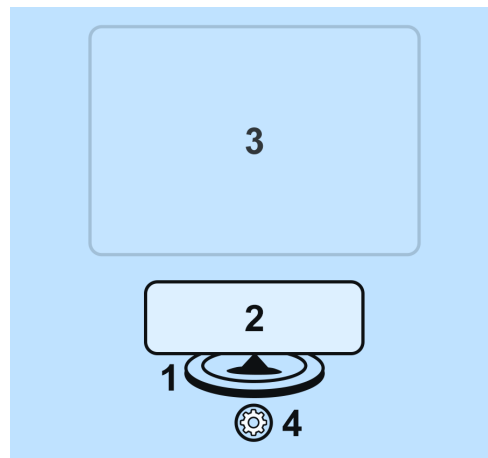
Common Panel Poses: The below image shows how the Home Menu, Modal Panel and Status Panel fit into the space. The other frequently used interaction is Wizard context.

Button Considerations: Buttons must be consistent in diameter (~2cm), behavior, and spacing. Use icons and floating tooltips, rather than static text, to simplify the UI.

Avoid Clashes: Menus must not intersect with each other. Lower-priority menus should nudge themselves into a valid position. Avoid placing information below buttons, occluded by hands. If a gameplay object is an anchor for world UI, then it should never be too close to another object.



1. Hub area
2. Modal Panel
3. Status Panel
4. Wizard Context Button
5. Wizard Context Panel.

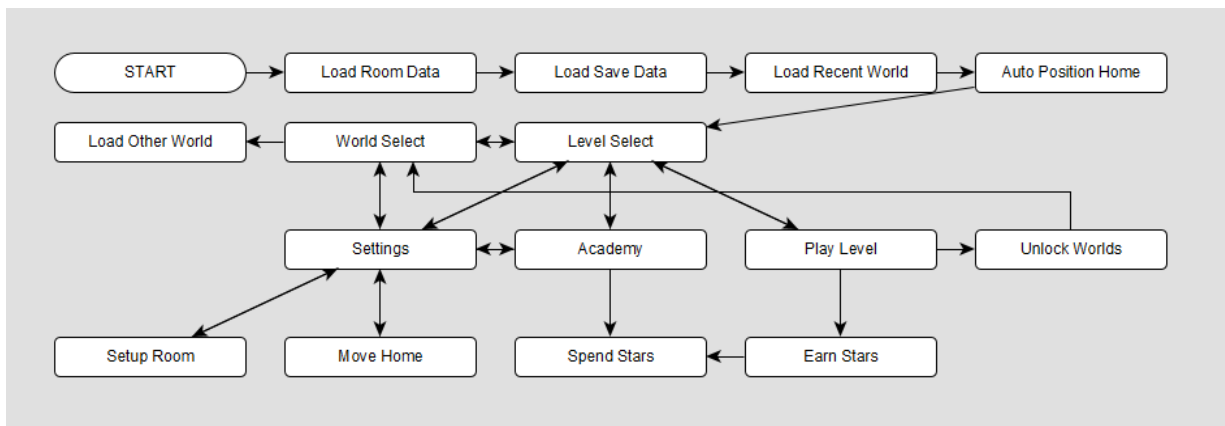


1. Hub Object
2. Hub Panel
3. Modal Panel
4. Settings Button

Game Loops

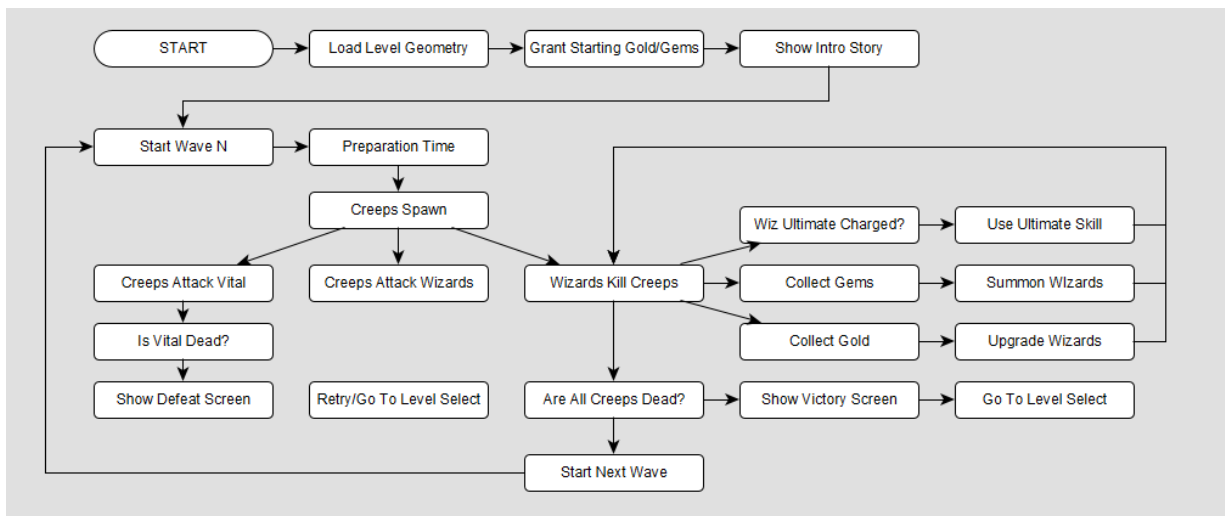
Game Loop

The game loads directly into the first (or last played) World. There is no hub world. All gameplay occurs within a world - the player can **Select a Level** and start it, change world in the **World Map**, change **Settings** (including MR setup), and upgrade wizards in the **Headquarters**. Completing Levels grants **Stars**, which are spent in the Headquarters to make wizards stronger, so more stars can be earned.



Level & Core Loop

The level has the states **Intro**, **Combat**, **Victory**, **Defeat**, and **Paused**. During combat, Wizards kill Creeps, which drop Gems & Gold, which are used to make more wizards (or upgrade them).



Worlds

World

A World is a group of Levels that share assets such as backgrounds, level art, audio, and characters. The player can view the World Map, a list of worlds to travel to. There is no 'hub world' - players travel directly. When a World is loaded, all the assets and instances that may be required are loaded into memory, so there are no other loading delays.

There are 3 Worlds, each with 3 Levels. More Worlds and Levels may be added post-release. Each world has a unique background, set of enemies and audio.

Levels are locked until the previous level has at least 1 star achieved. When all levels in a world have at least 1 star, then the next World is unlocked.

World Elements

The World contains the Hub, Level Select, World Map, Headquarters, and Settings.

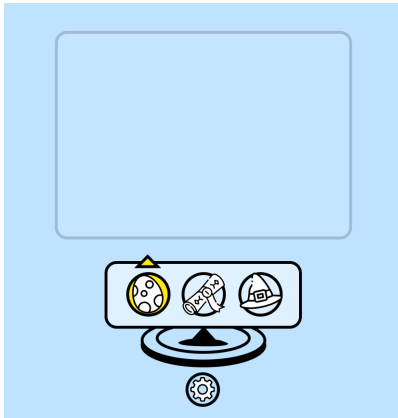
The appearance of the World is generated based on the player's room setup - it's simply a natural environment with some fragmented/stub level elements - see **VR/MR Usage above**.

The World Ally (a Dragon) is displayed, and encourages the player to select a level, which is represented by an Egg.

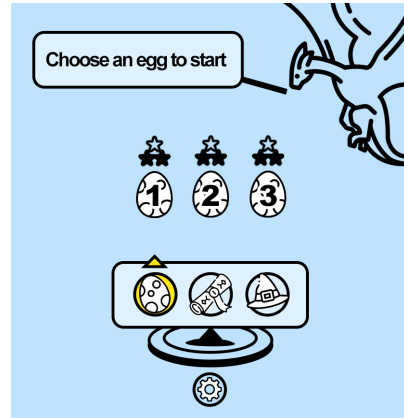
World List

World	Background	Ally	Creep Families
1	Alpine Mountains	Dragon & Egg	Goblins & Bats
2	Jungle Mountains	Dragon & Egg	Lizards & Golems
3	Smokey Mountains	Dragon & Egg	Zombies & Demons

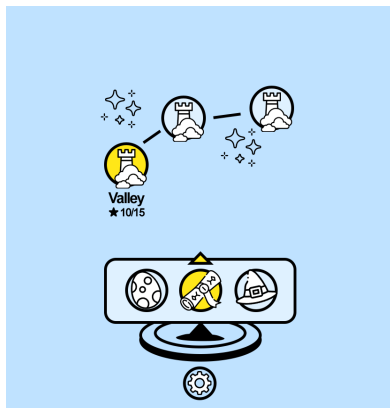
World UI



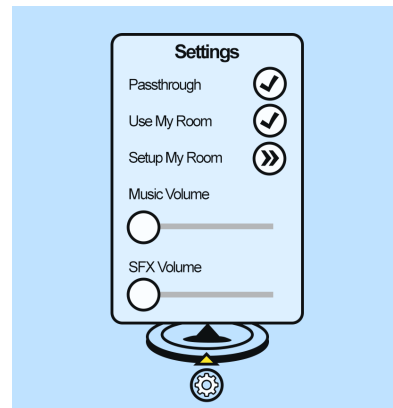
Hub, World Control, Settings



Level Select



World Map



Settings

World Characters



Dragon & Egg/Baby

Mother dragon is a friendly creature that leaves an egg on a tower. The player must protect the egg. At the end of the level, the egg hatches and the baby dragon flies away. Each world has a different coloured dragon.



Xenomancer

The major antagonist. It appears in all worlds. During the introduction to each level, it speaks about its desire to destroy the dragon egg, and creates the portal.

Levels

Level Mechanics

Play Area: A cylindrical volume of 1m radius and 0.5m height, centered on the Hub position. This means the player must have a minimum area of 2x2m.

Layout: The layout of each level, including Vital, Portals, routes, and runes.

Vital: The primary objective is to defend the Vital. It has health. Creeps attack the vital. If it dies, then the player has lost the level. The Vital is represented by a Dragon Egg.

Tower: A prominent structure upon which the Vital sits. The Tower is usually near the boundary of the play space, but its position may vary across levels.

Victory/Defeat Condition: If the Vital dies, then the player is defeated. If the last creep dies, then the player is victorious.

Ally: A large NPC that provides the main objective (Vital), in this case, a Dragon with her Egg.

Antagonist: A large NPC that provides the main obstacle (Creeps), in this case, it is Xenomancer, a powerful Void creature.

Portal: A magical disc floating in space. It is created by Xenomancer. Creeps emerge from the portal as magical balls, then pop into existence when they reach land. The position of the portal is designed per level, but snaps to a nearby wall.

Creep: An enemy creature. It is created as part of the Invasion plan.

Invasion: A data structure that describes the quantity, type and route of each creep, as well as Gem Loot. The designer has fine-tuned control through waves and deployments. Some difficult waves are displayed in the UI as a flag, with a "Large Wave is Approaching!" message.

Route: A static, predetermined path for Creeps to travel from spawn to the Vital. They generally follow the route, with some deviation for local avoidance/attacking wizards.

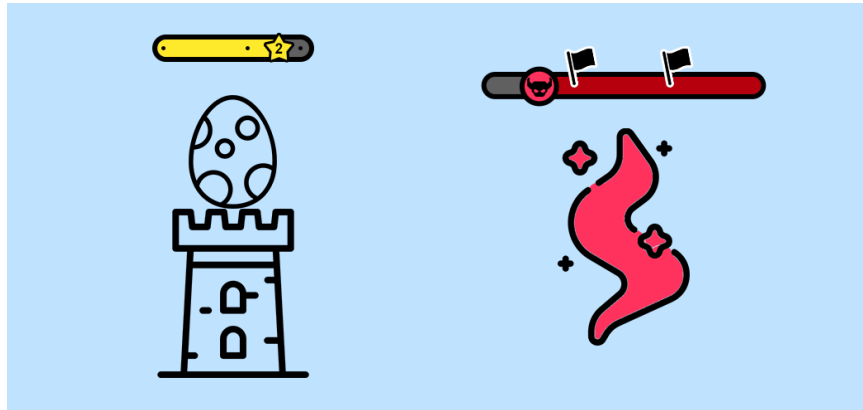
Rune: A valid location for a wizard. Players cannot freely place wizards anywhere.

Gem & Gold Loot: Loot items drop from killed creeps. The item waits on the ground for the player to collect by hovering the pointer over it. Gem and Gold inventory is shown at the Hub.

Starting Inventory: The player is granted an amount of Gold and Gems at the start of the level.

Difficulty Balancing: The main variable to alter will be enemy health, followed by gold loot and damage. The number of wizards/creeps, and time-related features will be mostly static during balancing.

Level UI



Vital UI & Invasion UI

Creep Mechanics

During the Combat phase, enemies (“creeps”) emerge from portals, then navigate a path along floating platforms until they reach the Vital.

Creeps have different health, speed and damage. Creeps can attack Earth wizards, and usually have a melee attack range. Any creeps with ranged attacks can be difficult for the player to deal with. Some creeps can perform a special skill, or have a passive skill.

Immunity and Flying

Resistance to an element is calculated according to its base elements. Some creeps have elemental resistance. For example, an Ice Monster takes:

- 50% Damage from any combination including Air or Water (except Ice)
- 25% Damage from Ice.

Another special rule involves Flying monsters. Only Wizards possessing the Air element can attack flying monsters; the other Wizards will ignore them.

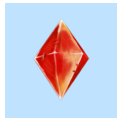
Level Completion & Stars

Each level can grant the player 3 Stars, based on health of the Vital (1 for completion, 1 for >50%, 1 for >90%). Stars earned are saved in persistent data, and allocated in the Wizard Headquarters. Acquisition state is shown in Level Select UI. Save data can be reset in Settings.

Core Gameplay

Gems

Gems are granted at the start of a level, and given as loot by creeps during combat. When collected, they join the player's inventory. They are spent to summon wizards.



Fire



Water



Earth



Air

Wizard Summoning

A **wizard** is summoned into the playing area by combining 2 **gems**. There are 4 gem types, and a total of 10 wizard types. There is no limit on how many of each wizard can be summoned.

Wizards must be placed on Runes. Wizards can be moved while out of combat. They can be refunded, which returns the gems, but only a fraction of the gold spent on upgrades.

Summoning Circle: A diegetic UI, located on the Hub. Select 2 gems to preview the wizard.



1. Select Gem A 2. Select Gem B 3. Pick Up Wizard 4. Place Wizard on Rune

Rune: A small, magical rock with a glowing icon on it. Wizards can only be placed on a vacant rune. There are 2 types: Normal (for non-Earth wizards) and Earth (for any Earth wizards). Earth runes are always located along Creep routes; that's because Earth wizards are 'tanks'.



1. Occupied Normal Rune 2. Occupied Earth Rune 3. Vacant Normal Rune

Wizard Base Stats

Each wizard has a unique personality, visual and audio style. They also have varying ultimate charge rates (mana), attack range, and attack speed. Earth-based wizards have **Health**. When an Earth wizard dies, it shrinks into its hat and is dormant for a short duration, after which the player can spend gold to revive it at full health.

Wizard Skills

Basic skill: A weak spell, usually a projectile. Auto-attacks creeps. Each basic attack is unique.

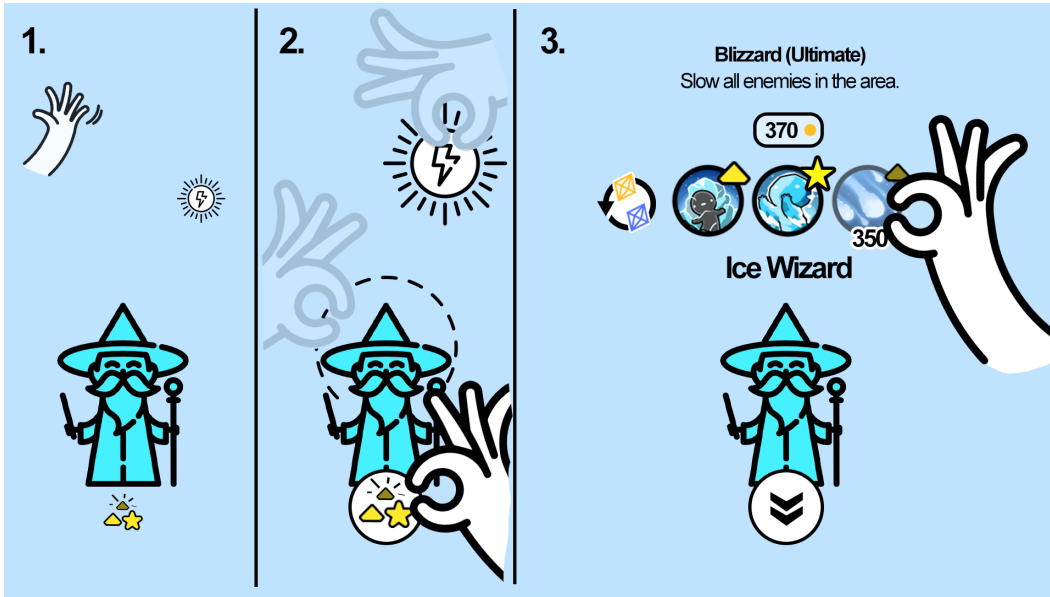
Ultimate skill: A powerful spell, charged up by each basic attack performed. When the ultimate skill is fully charged, then the player may choose when & where to activate it. The ultimate is only unlocked by Talent C. The player can concurrently activate multiple ultimates! **Timing and targeting ultimates is a super exciting, skillful and impactful gameplay moment!**

Wizard Talents

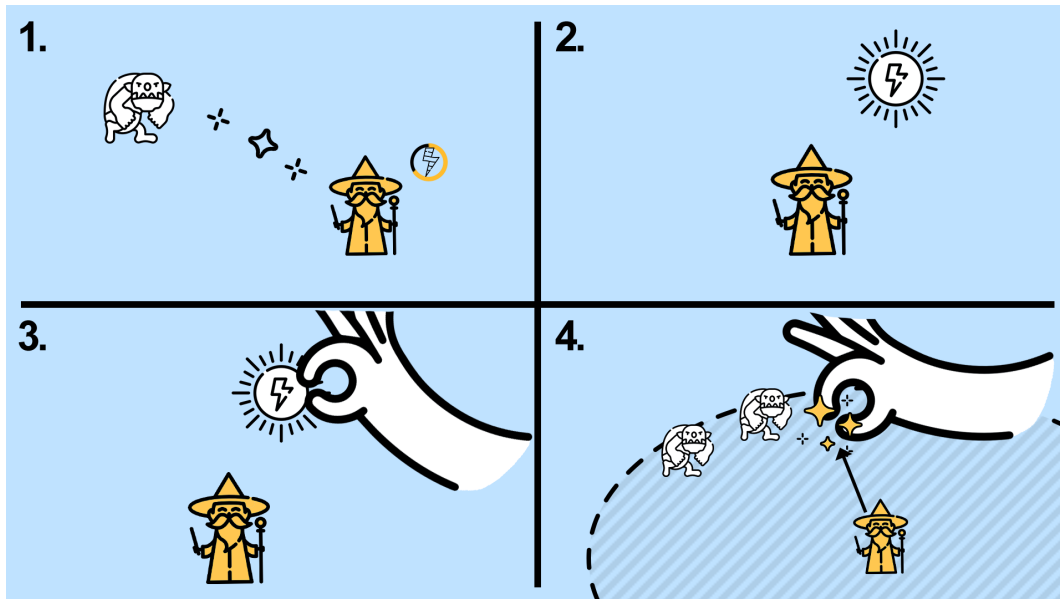
Each wizard has 3 Talents, which can be learned by spending gold (similar to tower defense upgrades). The player can choose to upgrade any/all, in any order; the limiting factor is gold.

Talents A and B will augment the basic attack, and/or the wizard's base stats, and/or the ultimate skill. Talents are not simply modifying a number - they often do something mechanically, visually unique and interesting. **Talent C** unlocks the ultimate skill.

Boosted Talents: The player can spend **Stars** in the Headquarters to boost a talent. Boosted talents are 150-200% more effective. This gives some depth to explore through progression.



1. **Inactive State:** When pointers are not nearby, Ultimate & Talent Icons are small.
2. **Alert State:** When a pointer is nearby, 3 interactables are active: Ultimate Button (if charged), Body Draggable (centered on hat), and Context Button (opens Context state).
3. **Context State:** All the information and actions the player can take. Only 1 Wizard can have context at a time. Context automatically collapses if the player's focus moves away.



1. Ultimate charges upon attacking.
2. Ultimate button appears when fully charged.
3. Select button.
4. Wizard uses ultimate towards your finger, in range.

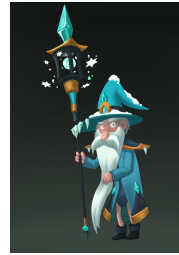
Wizard List



Flame Wizard

Fire + Fire

Fireball: Homing attack
Explode: AoE on hit
Scorch: DoT on hit
Meteor: Massive AoE/stun



Ice Wizard

Water + Air

Icicle: Basic attack.
Frostbite: Slow attacks
Snow: Slowdown
Blizzard: Massive slow



Ocean Wizard

Water + Water

Rain: Arcing attack
Flood: Rapid bursts
Splash: Heal nearest
Geyser: Channeled laser



Wood Wizard

Earth + Water

Apple: Attack/Heal projectile
Squirrel: Stun/Give Mana
Blossom: Spawn flower
Forest: Transform to Tree



Rock Wizard

Earth + Earth

Earthquake: AoE attack
Epicenter: +dmg nearby
Mountain: Extra HP
Crystal: Reflect Damage



Storm Wizard

Air + Fire

Spark: High dmg attack
Surge: Bounce on hit
Shock: Blind on hit
Strike: Massive Damage



Wind Wizard

Air + Air

Puff: Penetrating attack
Twist: Boomerang
Whirl: Faster attack rate
Tornado: Huge knockback



Sand Wizard

Earth + Air

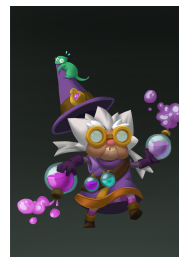
Dune: Wide, slow projectile
Journey: Knockback
Mirage: Dodge/blind
Ancient: Invulnerability.



Lava Wizard

Fire + Earth

Hammer: Cone attack
Aftershock: Stun chance
Mantle: Extra Max HP
Eruption: Frenzy attack rate



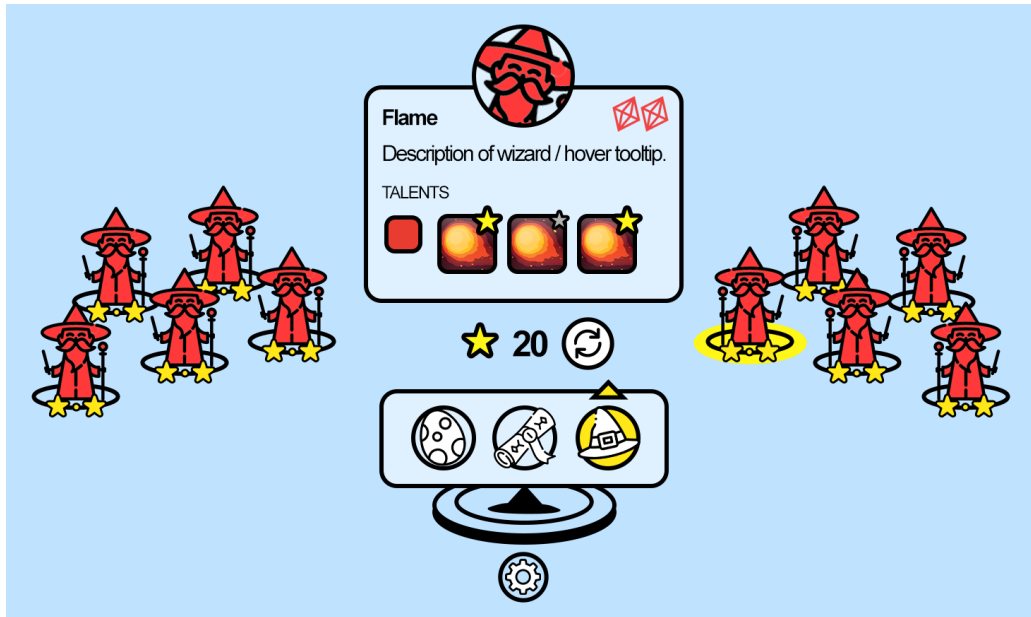
Potion Wizard

Fire + Water

Concoction: Long-range AoE
Strongarm: Extended range
Poison: DoT
Waste: Summon newt.

Headquarters

The Headquarters Screen is accessed from the World (not in Levels), and also includes information about the wizards and their skills. Stars acquired in levels are spent to improve wizard talents. Star spending can easily be refunded and reassigned to other talents.



Headquarters Screen, showing Wizard upgrades and stars

“Give ‘em hail!”



Level Designs

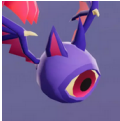

Level List

World 1	Level 1.1	Level 1.2	Level 1.3
World 2	Level 2.1	Level 2.2	Level 2.3
World 3	Level 3.1	Level 3.2	Level 3.3

Level 1.2

This level will be playable during Alpha 1 & 2.

Creeps

Basic	 Goblin Warrior Basic melee attack.	 Goblin Archer Basic ranged attack.	 Orc Slow, high HP.
Special	 Goblin Healer Heals nearby creeps.	 Ice Minion	 Ice King Ice King summons Ice Minions. Ice monster.
Flying	 Blink	 Stare	 Glare When a Magic Bat dies, it is replaced by a lower-level bat. Air monster.
Void	 Earth Vortex	 Air Vortex	Vortexes grant nearby creeps a resistance to a base element type.

Project

Contract Milestones

The requirements of the MR project are aligned to be completed alongside the development of the full game, which is targeting MR as the primary mode.

Date	Milestone	Deliverable Details	Internal MS
2023-06-05	Contract	Contract signed	
2023-06-12	Documentation	PDF including Game Design, Art Design, Technical Requirements, Milestone Descriptions, Product & Key Staffing (this document).	Design 2
2023-08-01	Mechanical Proof of Concept	Playable build. Distributed in private App Lab channel. Implementation of each type of VR interaction, demonstrating its use case for this project: Room, Passthrough, Hands.	Alpha 2
2023-10-01	Final Review (1 month earlier than contracted)	<p>Playable build. Distributed to public on App Lab with full product page assets.</p> <p>Relevant to MR Contract:</p> <ul style="list-style-type: none">• 1 end-to-end playable level.• All gameplay mechanics implemented.• All VR/MR interactions implemented.• Final, polished art is implemented.• Operates at 72 FPS <p>This beta is our public soft-launch, and will be monetised. It includes all content intended for the product launch in November.</p>	Beta / Soft Launch

Studio/Team

Thaum Games is a new studio, founded by Shaun Norton, who previously produced Unstung and Moon Slime for the Oculus Quest.

Name	Role	Begin	End
Shaun Norton	Lead/Engineer/Designer	(Present)	November 2023
Andy Nguyen	Producer/QA	July 2023	September 2023
Tam Bien	Concept Artist	(Completed)	N/A
TBD	3D Artist or Hire Studio	July 2023	August 2023

Sales & Marketing

Distribution/Price: \$12.99 on Oculus App Lab.

Target Demographic: Aged 13-18, any gender, predominantly US-based

Audience Profile: Owns a Quest, interested in fantasy, tower defense, cheerful games.

Marketing Overview:

- Build Discord community, starting during Beta
- Publish to App Lab with high quality trailer & store assets
- Organic & paid promotion on social media

Performance Goals:

- Sell 3000 copies within the first 3 months.
- Receive 300 reviews with an average of 4.5 stars within the first 3 months.

QA & Feedback

Build Phase	Audience	Reporting Method
Alpha 1	Internal	Direct
Alpha 2	Close Affiliates	Direct
Alpha 3	Limited Community	Discord
Beta / Soft Launch	Community	Reviews, Surveys, Discord & Email
Release	Community	Reviews, Social, Discord & Email