

MAGEBALL

GAME DESIGN DOCUMENT | ALEX LANTHIER | EGD-320-102 | SPRINT 1

OVERVIEW

Mageball is a fast-paced, 4-player split screen game where two teams of prestigious mages compete in a widely celebrated magical sport. Players compete in teams of 2, attempting to score the most points in this fast-paced, strategic sport. Using their magic abilities, players can support their team, attack their opponents, and keep the ball away from their goal. Mageball intends to create an experience that forces players to think on their toes and make snap decisions in the moment, all while speedily traversing the arena.

GAMEPLAY

SUMMARY

At the beginning of a match, each player assigns themselves a role. Both teams have an offensive and supportive role, with each one granting a player two specific spell abilities. Each role plays a crucial part in that team's success and forces players to cooperate with their teammate.

Teams start at opposite ends of the arena next to their goal. After a short countdown, the ball drops in the arena's center and both teams must rush in, attempting to gain possession of the ball. To score a point, one player must throw the ball through their opponent's goal. When one team possesses the ball, their objective is to push through the opposing team and reach the other side of the arena to score a point. On the other side of the coin, the team without the ball has the goal of disarming their opponent to gain ball possession. When one team successfully scores, the scoreboard will update and both teams will respawn at their starting position.

MOVEMENT

Mageball has tight movement with simple controls and a set of mechanics that create lots of traversal possibilities for players. The movement also has a very fast pace, encouraging players to stay on their toes at all times and never fall stagnant. Some spell abilities are designed to limit opponents' movement by creating walls or

obstacles but that only forces the affected players to find a new path of travel using their moveset. If players don't keep moving, they won't have any success in a match of Mageball.

Players can jump, dash, and move around in any direction relative to their first-person view. The jump will launch players to about 3x the height of their character, encouraging highly vertical movement in the arena. The dash mechanic can be used repeatedly like the jump but requires a short cooldown to complete after each use, which is invisible to players. Dashing will launch the player forward towards the direction they aim in at a nearly instantaneous speed. This mechanic creates more options for players in pursuing the ball, their opponents, or teammates and helps them avoid incoming threats. The dash also gives players a way to further traverse the arena because it can be executed once while in the air, acting as a double jump when used properly.

ARENA

The center area of the arena measures 110 meters wide by 220 meters long with half-circle shaped caps at each end that mark the player spawn areas and goals. Tunnels and underground areas are 7 meters deep and have varying widths. Buildings are 44 meters wide, 24 meters tall, and 36 meters deep. The first floor in each building is 9 meters tall, and the second floor is 13 meters tall. Walls and floors should always be 1 meter thick. The longest tunnel is 7 meters wide and runs the full 220m across the arena with a room directly in the middle measuring 82m x 35m. From this room, there are other tunnels measuring 14 meters wide and 20 meters long that lead to the basements of the buildings.

The arena resembles a grand, prestigious coliseum. As such, it includes buildings and underground areas that give the space lots of verticality. In turn, players can use their movement options in creative ways to navigate the vertical structures of the space, which will benefit them in evading threats when crossing the arena with ball possession. This arena has been used by mages for thousands of years to play Mageball, so although it appears to simply be built around an old area of the city, it should almost look like a stage that has been specifically set up to be an arena for this sport. The buildings and other large, non-moving parts of the arena should look worn, but some of it should look like it was specifically added to make the sport more interesting. Since these new additions are meant to be refinements to the game that

already existed, they will also have some use for the players, for example, metal grates will allow the player to see tunnels below them. Towards the edges of the arena there should be some obstacles around, which are posed as leftover supplies and set pieces that would normally be used for staging the arena. These obstacles serve to obstruct lines of sight in more open areas of the arena to emphasize short distance combat and chases.

SPLIT-SCREEN

This game is meant to be played by four players at once in teams of two, however, the game will not be networked, so the screen has to be split between the four players. Teams are either on the left or right half of the screen, and each player has half of their team's space dedicated to their camera view.

HEALTH AND DAMAGE

Each player starts with 100 health points, which decreases as they take damage from opponents' attacks. Once a player's health reaches 0, they are knocked out and return to their spawn area. If the player is carrying the ball when they are knocked out, the ball is dropped.

BASIC KIT

Besides the spells that come with the role they choose at the beginning of a match, the player also has some abilities that they can use at any time. Movement in this game is very important, so besides just running around, the player also has a dash ability that pushes them forward 5 meters which they can use both on the ground and in the air. Additionally, players should be able to jump about 5 meters high in order to move around more effectively and get over some obstacles. With their right hand, players can use basic attacks to ward off enemies. To deal damage at a very close range, players have a melee attack that does 40 damage and makes the opponent drop the ball.

BALL HANDLING

In order to pick up the ball, a player must simply walk into it while it is on the ground. If the player is holding the ball, their melee is replaced with the ability to throw the ball. While this ability may not deal any damage to enemies, it is required in order to get the ball into the goal, and if the need arises it may be useful to pass the ball to

your teammate. Players are not able to use their melee attack while holding the ball, but their left hand is still free to use their abilities so that they are not totally helpless.

SCORING

Players have two different means of scoring, they can either carry the ball across the field into the opposite team's spawning zone to score 1 point or they can throw the ball through the goal hoop to score 3 points. This creates a more robust risk-reward relationship when it comes to scoring, as players are rewarded more for being precise and taking the risk to throw the ball rather than just running it across.

SPELLS

At the beginning of a match, each player can choose between two roles: attack and support. Teams must have one player with each role, so there are never situations where one team has too much offensive ability to the point where the game becomes unbalanced. Each role has 2 special spells that are more powerful than basic abilities, but have a cooldown, so they cannot be used as often. Players always have one active spell. Once the player uses that spell, it remains active until the player switches to the other one, so if they want to cast it again they can just wait for the cooldown without needing to switch back to it.

Spell Spawners

Spells spawn in the arena above spell spawners where players can collide with them to pick them up. At the start of each round, the spell spawner will start with an ability above it, ready to be picked up. Once the player picks up a spell, that spawner has a cooldown until it spawns a new spell.

Spell Spawning Options (TBD Through Testing)

- Randomized Spawning
 - The next spell to spawn is randomly chosen from the total 4 spells
- Randomized Spawning Within Spell Type
 - The next spell to spawn is randomly selected from the type of spell that spawner is set to
 - Ex: Support spell spawners will randomly select either the jump pad or raise wall spell when spawning a new one

- *** Fixed Spell Spawning (Will Likely Be This)**
 - Each spell spawner only spawns one type of spell and no others
- Explosion Spell
 - This grenade-like spell simply causes an explosion that deals 30 damage in a certain radius. This spell is useful as a long-range attack if you can't get close enough to hit the opponent with a melee, and it can be useful if you want to deal damage to both opponents with one attack.
- Fire Lake Spell
 - Once cast, this spell creates a lake of fire on the floor that deals 5 damage every .25 seconds to all players that are within its radius while it is burning. This burning area has a 5 meter radius and lasts for 20 seconds, so besides dealing damage it can also be used to block a certain area as a way to route your opponents to a particular location.
- Jump Pad
 - This spell allows the user to toss out a disc that expands into a jump pad when it touches the ground. If any player steps onto the jump pad, they get launched 20 meters into the air where they can then move around and use their dash to get to higher locations or soar over walls. Although the primary purpose of this spell is to give your team more options for movement, if used effectively it could act as a way to launch opponents into the air to trip them up and make them easy targets.
- Raise Wall
 - This earth-based spell allows the user to raise a wall horizontally in front of them. Although this does not do any damage, it is an extremely useful and powerful utility spell that can be used for movement and defense. The wall raises slowly enough that you can jump onto it, allowing you to use it to reach higher areas and block lanes of travel all at once. You could even use a wall as a bridge of sorts to get over gaps that you normally wouldn't be able to jump over.

Spell and Character Variables

Name of Spell	Damage	Cast Distance	Size
Melee Attack	40 dmg	3m	3m/3m/1m cube in front of the player
Ball Throw	N/A	30m	30m arc in front of the player
Explosion Spell	30 dmg	50m	5m spherical radius
Fire Lake Spell	5 dmg every .25 sec	30m	5m circular radius
Jump Pad	N/A	30m	2.5m circular radius
Raise Wall	N/A	10m	7m tall, 20m wide, 10m deep

CONTROLS (XBOX CONTROLLER)

- Left Stick - Move Character
- Right Stick - Rotate Camera
- Left Bumper - Switch Active Spell
- Left Trigger - Cast Active Spell
- Right Bumper - Melee Attack
- A - Jump
- X - Dash

USER INTERFACE

As a result of having a 4-player split-screen display, Mageball's interface will look clean, easily readable, and very unobtrusive in gameplay. In order to achieve this, the UI will be small but readable on each player's screen. All players require awareness of their current health and ability status at all times, but also need to clearly see their teammates and opponents' status. To properly communicate this information, our team is emphasizing a heavy focus on the UI's readability above all else. To achieve this, we will put the game through rigorous testing procedures and get real player opinions throughout many steps of production.

- **Health**

- Each player has a health bar on their respective section of the screen. Players also have a smaller health bar that hovers above their head in-game so that everyone playing can easily know the health of anyone they are looking at. When a player takes damage, their screen flashes with a red tint and a directional indicator will appear to show them which direction they are taking damage from.

- **Score/Timer**

- The scoreboard and timer are placed at the exact center of the screen and should be as symmetrical as possible. This will minimize the amount of screen space the scoreboard is taking from each player and ensures that no player has an unfair disadvantage. The scoreboard and timer are shown at all times so that players can easily tell the score of the game if they need to. This UI grows larger when a goal is scored to bring attention to all players that it has been updated. When the timer gets low, an alarm will sound that tells players that they only have a limited time to try to score more goals.

- **Abilities and Spells**

- On the bottom-left of each player's camera view is a pair of diamond-shaped sockets, each containing an icon that represents one of the two spells associated with that player's chosen role. The diamond containing the icon for the currently active spell is larger than the other, and when the player swaps active spells, the two diamonds swap position and size. Each player can see both of their hands hovering in their camera view. The right hand is reserved for basic abilities, while the left hand is used to cast spells. The right hand should indicate whether the player is holding the ball so that they know whether or not they can use their melee attack. The left hand should have a visual indication of what the current active spell is.

- **Player Feedback**

- This game will require a lot of player feedback so that players know what is happening at all times. This primarily involves making sure that players know when they have used an ability or when they have been hit by an ability. For example, when the melee attack is used, the player using it must have some screen shake or "kick" that gives them a clear indication that they actually used the spell and the player that is hit must know that they are taking damage. Each ability needs to have

different player feedback so that players know exactly which spell has been cast. For example, the fire lake spell should have a different sound than the explosion spell.