

“Pickled!” Mechanics

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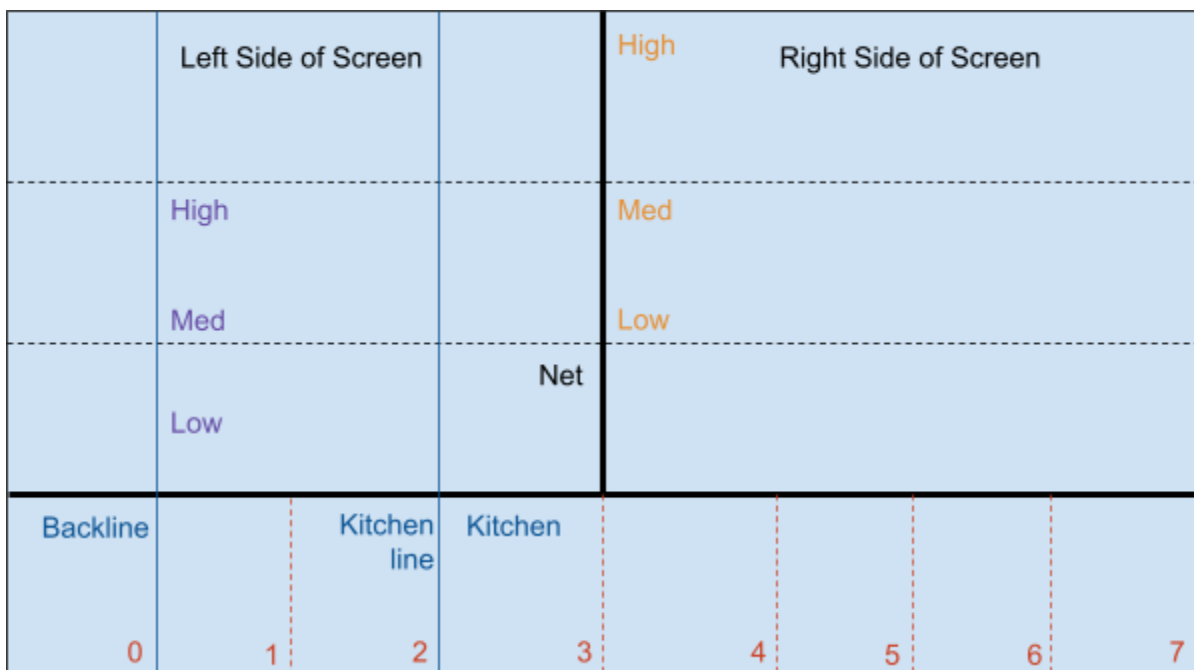
Preface

“Pickled!” is a mobile Pickleball arcade game where, like the real sport, is easy to learn, but has fast and intense back and fourth action. There won’t be too many mechanics at play, only those for hitting shots, ball physics, player movement, Pickleball rules, and calculating a Highscore.

The Core Mechanic: Hitting Shots

Just like a real game of Pickleball, players will hit a variety of shots, all with different execution, properties, and purposes. They will do so by performing touch gestures on the right side of the screen while the ball is at certain heights and spaces on the court. Note: for the entire game the playable character, Jules, will always stand on the left side. Thus, when saying forwards, this means right or towards the opponent, and back means left or away from the opponent.

Players can tap and swipe forward, back, up, or down; and can do so at low, med, and high heights. Shots will have 3 main properties: speed, distance, and arc height. Speed can be fast, med, or slow; distance is measured between where the ball was hit and its first bounce; and arc height is the max height the ball reaches in its arc. Below is a rough diagram of the court each level will be played on showing: the net and left/right sides of the screen (black); the spots which players can move Jules between (blue); the ideal heights at which to hit the ball (purple); the distances the ball can travel (red); and the arc heights of the ball after being hit (orange):



Below is a table of the resulting shots that can be hit with their corresponding gesture, ideal place and height to hit, speed, distance, and arc height.

Shot	Gesture	Place to hit	Height to hit	Speed	Distance	Arc Height
Serve	Tap (to drop), swipe forward (to hit)	Back line (locked in during serve)	Med	Med	5	Med
Super Serve	Tap (to drop), swipe forward (to hit)	Back line (locked in during serve)	Low	Fast	5.5	Low
Drive	Swipe forward	Back line	Med	Med	5	Med
Super Drive	Swipe forward	Back line	Low	Fast	5.5	Low
Dink	Tap	Kitchen line/Kitchen	Low/Med	Slow	1.5	Low
Volley	Tap	1- Kitchen line/Kitchen 2- Back line	1- Med 2- High	Med	1- 3 2- 4	1- Low 2- Med
Lob	Swipe up	Kitchen line/Back line	Low	Slow	3.5	High
Spin	Swipe back	Kitchen line/Back line	Med	Med	3.5	Low
Smash	Swipe Down	Kitchen line	High	Fast	3	Low
Short Serves	1- Tap (to drop), Swipe up (to hit) 2- Tap (to drop), Swipe back (to hit)	Back line (locked in during serve)	1- Low 2- Med	1- Slow 2- Med	3.5	1- High 2- Low
Out Shots	1- Swipe forward 2- Swipe forward	1- Kitchen line 2- Kitchen	1- Low/Med 2- Med	1- Fast/Med 2- Med	1- Out 2- Out	1- Med/Low 2- Med

Net Shots	1- Swipe forward 2- Tap 3- Swipe back 4- Swipe Down	1- Kitchen 2- Back line 3- Back line/Kitchen line 4- Back Line	1- Low 2- Med 3- Low 4- High	1- Fast 2- Med 3- Med 4- Fast	Hits net	Hits net
Shots That Don't Make it to Net	Tap	Back line	Low	Slow	Doesn't make it to net	Doesn't make it to net
Missed Shots	1- Swipe forward/ Swipe back/ Swipe up 2- Swipe down 3- 1- Tap (to drop), failing to do serve before 2nd bounce	All	1- High 2- Low 3- Misses	Misses	Misses	Misses
Shots That Set Up Smash	1- Tap	1- Kitchen line/Kitchen	1- High	Med	1- 3.5	Med

Supporting Mechanics

Ball Physics

The ball will always experience a downwards velocity, in other words, gravity. By hitting shots players will exert the forwards and upwards velocities which make the ball move around. It's important to note that the gravity should be fine-tuned to have a good balance between keeping the ball low enough so that it stays on screen and mostly in the court, and keeping it in the air long enough that players have a fair amount of time to hit it. Also, in combination with the velocities applied by the

player, the ball should almost always be hit towards the 3 playable areas, giving players the most fair chance at returning the ball.

Player Movement

Using swipe gestures on the left side of the screen, players will be able to move Jules between 3 points on her side of the court: the backline, kitchen line, and inside the kitchen. Swiping forward moves her to the next available area to the right, and swiping back to the next available area to the left. Given the shot mechanics and ball physics, these 3 areas should be ball receiving hot spots. Thus, like the real sport, positioning at these 3 areas gives players the most opportunity to hit shots, create plays, and partake in the action.

Pickle Ball Rules

The game will share the same rules as its real-life counterpart. To be more specific, the following rules will be implemented in the game:

- If the ball is sent and bounces twice on the receiving side, then the sender wins that rally
- The ball must bounce on the 1st serve and return of each rally
- If the ball is sent and lands out of the court on the receiving side, then the receiver wins that rally
If the ball is sent but fails to go over to the receiving side, then the receiver wins that rally
- Players can only score on their serve
- Players must win a rally to regain their serve
- For each return, if a player enters the kitchen before the ball has bounced in it, then it is a fault on the entering player and their opponent wins the rally
- If a serve is sent but lands in the kitchen of the receiving side, then the serve is short and the receiver wins the rally

Highscore Calculator

Different from the in-game Pickleball score, the game will also calculate a Highscore which players can share on social media at progress checkpoints at the end of each level; as well as their final Highscore upon completion of the game. Listed below are the factors which affect the player's Highscore and their subsequent effects:

- Minimum Highscore = 0
- Points won: +50
- Points lost: -25
- Point spree multiplier: every 3 points in a row, adds a +1 multiplier to each point scored (1st 3 points in a row → x2 score from points won, 2nd 3 points in a row → x3 score from points won, etc.)
- Super Serve, Super Drive, Smash bonus: +10

- Super Serve, Super Drive, Smash return bonus: +20
- Games won: +200
- Games lost: -100
- Pickled bonus (winning a game 11-0): +500
- Matches won: +300
- Matches lost: -300