# To Do

What I **should** have done:

* Focus entirely on first (or first two) mode(s)
* Make *everything* a throwable. (Powerups as well.)
* Make the rest a *feature of the arena itself*. (Such as places around which the knives curve. Things like that are awesome + don’t need to be *taught*.)
  + In general, build arenas from the ground up to support what I need: dead players have something to do, encourage throwing from distance, everything can be sliced (or interacted with in some way)
* Write cleaner code from the start so all those bug fixes and patches aren’t needed

## General To-Dos/Questions

* **Quite crucial:** add a “counter rotate” button to the default control scheme?
* **Training Ravines (arena):** Also add “stuckable” stones? (Now all of them are just deflectable.)
* More throwables: At least something for *close range* (although not sure anymore now that I’ve discouraged this so much) And something really uniquely Halloween, unique to this game’s mechanics.
* Make collectors look better. Also allow placing them in *any* map layer. (Sometimes they should overlay, sometimes they should be ground.)
* **Quite crucial:** Sometimes, when knives get stuck in something they still rotate the wrong way around? (It seems their raycast hits the *back* of the object, instead of the *front*. Which suggests the raycast starts *inside* the object because it’s too fast?)
* **Quite crucial:** Similarly, sometimes knives tunnel through some object, deflect loads of times, the never get out of it => I already keep their velocity when overlapping NonSolids, and knives are regularly removed (if not held), so that should compensate a fair bit
* When possible, permanently show the effects of a powerup (in a unique, clear way, like a “magnet” shape or particle effect for the magnet)
* **Extra mode:** all players start *really small* (minimum size). You grow *automatically* and you win when you’re *maximum size*.
* **The extra modes (besides the first two) are very much untested …**

## Better bots

* More properly test the bots on other modes.
* Bots can “insta-press” buttons. Add *some* delay between press/release cycles to make it more manageable?
  + Similarly, smooth out rotations (to prevent flipflopping)
* Change the *global* weight of things also based on distance? (Mostly applicable to less important things. For example, if the closest powerup is quite far away, don’t consider their vector as much.)
* Niceties:
  + Give personality.
  + If no knives, *and* no knives for grabs, flee from others?
  + Add the general niceties.

## Nudging player behavior

* Change arenas to modify player behavior:
  + Tiles in the floor that fall away as players walk over them. (More chance/quicker if there are *more* players.)
  + Lilypads with the same idea: too many, and the whole thing sinks.
* Keep score/data over multiple rounds and use it to change player priorities.
  + Maybe the winner from the last round is marked “Winner!” and therefore painted as a target.
  + Or the best defensive player is marked “Defensive!” (and players are incentivized to try and break that streak)
  + The person with the longest throws gets a bonus the next round?­

## Really, really optional

* Pirate Curse
  + Add some torches (probably in the stones) for lighting? (Would require particles and animated sprite, otherwise it just doesn’t look good.)
* Family Dinner
  + Occlusions also on objects themselves (make them their own sprite to ignore that), food uses the “multicolor” coloring … which doesn’t look good at all.
* Haunted House
  + Not sure about lighting + the completely empty walls and space
  + Sound effect on arena change
* Swimming pool:
  + Make light distribution nicer (symmetric?) => in general, find ways to make it look slightly better
  + Explain the “drain” with some extra particles and stuff?
* Dumplings: give different types a different *trail*?
  + Isn’t it confusing that dumplings have their own color *which has nothing to do with player owner*, while other throwables *have a color that shows owner*?
* ~~Button for~~ *~~changing bot teams~~* ~~(if they ever learn about teams).~~
  + **Don’t see a good solution in current system.** For next game, allow player to *traverse* all logged-in **bots** (with arrow keys/joystick). So we can edit each bot specifically by going to them.
* **IDEA:** Different *ground terrains*. As long as you’re on that terrain, you are influenced by its special effect (whatever it is).
  + Icy movement, sticky movement, keep growing/shrinking?
  + Curver => curves any throwables through it. (Might be more intuitive to make it a “magnet” or “hurricane” or something.
* **IDEA:** A way to really *separate* a map between players, locking them into a certain zone
  + **AMAZING (but weird) IDEA:** There’s an actual *minimap* of the arena available somewhere. Slicing it will *actually* divide the arena into those portions.
  + **Maybe something for a different game. =>** would be cool though, maybe for a pirate game about slicing the actual map, or a puzzle game.

**Things that are probably already fixed:**

* Make dumplings *also* deflect knives in the air. (That’s the whole reason I gave them a *body*.) => I think they already do this by default! (Their body is never actually reset, which makes all their functionality possible.)
* On old playtest, there was an issue with owner not being reset on knives standing still. I think it had to do with max capacity, and I fixed that clear bug, but not sure if that solved all issues.
* On old playtest, some losers (or winners?) didn’t get an award handed to them at the end. Is that fixed?

## Playtest Results

* **Visual clarity:**
  + **~~The aim helper~~** ~~could be brighter + more visible + animated~~
  + ~~Way thicker outline around players~~
  + ~~Larger UI windows (for tutorial, game over, etc.)~~
* ~~Longer reminders + non-immediate-skip protecetion~~
* ~~Die sooner (while you’re still large) + start larger~~
* ~~Max # throwables (just remove overflow after a while; think this was already built-in, just not strong enough)~~
* ~~Enforce strict minimum size, even in modes where you cannot die.~~
* **~~Ghost town:~~** ~~(And maybe two ghost knives 100% of the time is too much?)~~
* **~~Jungle:~~** ~~keep vines removed for longer + completely remove them earlier.~~
* **~~BUG:~~** ~~Add bot/add player buttons reversed?~~
* ~~Gracefully degrade when no powerup types available. (Just place nothing?)~~
* **~~Feedback~~**~~: slightly larger, wait longer before fading~~
  + ~~Make “no throwables” shorter (like “empty!”), or limit how often they can appear~~
* **~~BUG:~~** ~~In ghost town, ghost knives don’t~~ *~~always~~* ~~seem to go away after a hit~~???
* ~~Feedback when you’ve become a ghost, but have not died. (Conversely, when you’ve died, but don’t become a ghost immediately.)~~
* **~~BUG: Frightening Feast:~~** ~~shows leftover parts (permanently), why?? => forgot to set fade\_rubble to true in GlobalDict settings~~
* **~~Starting rules:~~**
  + ~~Enable “area-shrink” by default~~
  + ~~Enable “active knife in front” by default~~
  + ~~No powerups. Only standard knife throwable.~~
* **~~Jungle:~~** ~~shut down teleporters after a while?~~
* **~~DOUBT: Remove/rethink~~** ~~the dumpling throwables???~~
* **~~DOUBT:~~** ~~Is limiting players to a single knife an idea?~~
* **~~DOUBT:~~** ~~Are players moving too fast by default? (Now that they’re bigger, and they move faster if close, I think I can tone it down?)~~

## Reddit post

* ~~Tutorial arena:~~
  + ~~Players are forced to stay spread out~~
    - ~~4 different locations, can’t visit each other~~
    - ~~At the start, assign a location to each team.~~
    - ~~Then place players inside their location (based on team num) => modify the code to allow this as a possibility~~
  + ~~There are some elements for cover, though they can be sliced through (after which the knife is deleted).~~
  + ~~You have to throw across a distance to hit others~~
* ~~Limited fire rate (shown through progressing black border around player)~~
* ~~When hit, you are~~ *~~invincible~~* ~~for a couple of moments. The more close-by the hit was, the~~ *~~longer~~* ~~you’re invincible.~~
  + ~~=> more feedback for this (shield icons across body?)~~
* ~~When hit, you are briefly~~ *~~stunned~~*~~.~~
  + ~~=> extend to bots as well, as it now only happens in~~ *~~player~~* ~~Input module~~
  + ~~Switch icon to a stunned face~~
  + ~~Show a starry pattern across the body?~~
* ~~The closer you are to another (enemy!) player, the faster you move.~~
* ~~Holding button charges up speed. If knife doesn’t have enough throw speed, it will just bump off the other player. => mainly make this speed difference~~ *~~much more obvious~~*
  + ~~Also show this powering up on the~~ *~~aim helper (dotted) line~~*~~?~~
* ~~When really close to someone else, you cannot throw. Instead, pressing the button just does a~~ *~~repel~~* ~~on the other. => decided not to do this, as repelling already happens, and it would make throwing inconsistent~~