# Carving pumpkins

## General

The idea of “slice a shape into any other shape” was not applicable in my rolling game.

But it still works and it has potential, so let’s make a different game out of it. The most logical conclusion: a fighting game where you *literally* slice your opponents.

**Titles:** Carving Pumpkins and Dwarfing Dumplings

## Main mechanic

When slashing/attacking, you *literally (realistically)* *slice their shape*. They become the “biggest shape”, the other one is simply lost. Once the biggest shape is below a threshold, a player is considered completely dead.

## Objective

Multiple game modes

* **Deathmatch** => slice your opponents until they’re all gone
* **Collector** => you can *collect* the slices of opponents; the first one to get X of them wins.
* **Bullseye** => targets appear across the map; hit one with your knife to get it, the first to get X wins
* **Dumplings** => players can eat dumplings, which will *grow* you, and then *appear inside of you*. When slicing a player, if you hit a dumpling, you get it. (You grow, they shrink.)
* **Dwarfing Dumpling =>** each player/team gets their own *huge* dumpling. Players themselves cannot be hit (and are rather small), but if your *dumpling* is completely sliced, you lose.
* **Ropes =>** each player has a few objects attached to them with ropes. If another player slices through a rope, it comes loose, and you lose that “life”.
* **Capture the Flag** => one player from each team has a *flag* inside of them. However, this is hidden information. (The player who has the flag cannot throw knives, that’s how they know.) If you slice through that player, you capture the flag. The first to X captures wins.
  + This would require *teams*. I see no way to adapt it to single player or individual players.

Multiple player configurations (1-6 players max): Team-based, AI-bots

## Input

Arrow keys / Joystick = Move

Button = Slash

* Quick-press it to slice straight ahead. (The normal across your looking direction, with a small maximum range.)
* Long-press it to throw your knife.
  + This shoots a narrow rectangle, which functions as a bullet, and will keep flying until it reaches a non-player object.
  + There it gets stuck. Touch it to retrieve it again.

**NOTE:** Aiming is different between keyboard and controller

* Keyboard has “turn left” and “turn right”. (Because just using arrow keys only allows 8 directions for aiming, which isn’t enough.)
* Controller just follows your joystick.
* In both cases, if you hold it long enough, it slows down. (To get even more precise, but also force you to release quite quickly.)

I could add the “Totems of Tag” rule where *rotating adds curve*. But then the games look too much alike. (And doing so *loses* the ability to move around and re-aim.)

Instead, let’s keep it this way. Just add an item to the arenas like “curver”, which adds curve to any knife flying through it.

## Powerups

Powerups are shown as “packages”. You need to *slice them open* to see what’s inside. (You can also grab them the normal way, but then you don’t know what you get.)

As always, they are grouped by *category*, where each category follows the exact same color scheme.

### Shape

* **Grow**
* **Shrink**
* **Morph** => reset to a *different* shape (from predefined list)
* **Ghost (temporary)** => you are temporarily unslicable
* **Hungry (temporary)** => walking over pieces makes you *eat* them (to grow yourself)

### Knife/Slashing

* Longer range
* Shorter range
* Extra knife
* Lose knife
* Boomerang knives
* Curved
* Faster throw speed
* Slower throw speed
* Knife Repel
* **Repeater =>** Throw *all* your knifes at the same time. **=> TO DO**

### Moving

* Faster move
* Slower move
* Reversed controls (temporary)
* Ice (temporary)

### Collecting

* Magnet (temporary) => you *attract* stuff to yourself
* Duplicator (temporary) => any dumplings you eat/parts you collect are *duplicated*
* Clueless (temporary) => you can’t collect anything
* Auto Unwrap => automatically unwrap powerups when walking over them

### Throwables

* Dumpling => can be used to protect against knives or block/deflect them mid-air

### Misc

* **Switch teams!** (Randomly. Can’t really show all colors on such a thing.)
* **Vampire** =>
  + The game has light/dark. Vampires can’t enter the light?
  + A vampire can only slice you from *close range*, but does *more damage* if so. (As they “drink your blood”.)

## Arenas

* Ghost Town
  + Mostly open grass field, with a few bits of rubble and leftover stone walls
  + Switch between day and night?
    - At night, one of two things can happen.
    - Either all players become ghosts …
    - … or a big “ghost knife” appears. The ghost knife moves slowly, but will slice *anyone* it touches and has a “homing missile” movement
  + **Meant as a training ground,** so keep mostly open and free.
* Spooky Forest
  + Some trees deflect, others get your knife stuck.
  + Some trees can be *cut down* by throwing a knife (with considerable force?)
  + It has a layer “above” the players, so you’re actually walking underneath branches.
  + One tree in the center grows knives around it. After a while, it “explodes” and shoots those knives away.
* Graveyard
  + Tombstones to hide behind (which might move)
  + A light that constantly moves
* Dark Jungle
  + A big *wall of vines/grass/shrubs* between players that separates them => they need to slice their way through
  + These constantly regrow as well.
* Cheese Factory
* Haunted House
* Family Dinner
* Unfortunate Blackouts
  + Divided into rooms
  + Once in a while, the light in a room goes completely off. (You can also trigger this by throwing your knife against it?)

## Collision Layers

1. All
2. Players
3. Terrain
4. Powerups
5. Ghosts => used for dead players to interact in *some way* with the environment.

## Groups

* Players => actual, controlled player entities (includes bots)
* Parts => loose player parts; still have a rigid body and value, but can’t be controlled
* Deflectable => knifes get deflected by them
* Stuckable => knifes get stuck in them
* Sliceable => knifes slice through these
* Unpullable => can’t be moved by e.g. a magnet pulling on it
* Powerups
  + PowerupsRevealed
  + PowerupsUnrevealed
* KeepAlive => TO DO

## Throwables

* **Knife =>** slices stuff, has an owner (which it loses when no velocity), no body
* **Dumpling** => deflects knives, in-air and when on your body
* **Thor’s Hammer** => when hits body, slices you 1-3 times in random ways => when you hold the throw button, all hammers come flying back to you?
* **Bat** => chases the nearest player, simply shrinks you?
* **Spider** => pushes *players* aside, as they don’t want to come near the spider or touch it, but it does move incredibly slowly. (Or it copies your movement after being thrown??)

**Should these be a separate category from powerups?**

* But then, should the *boomerang* and *curved* knives also be part of this???

# TO Do

**Take some devlog images, early on.**

**Throwables:**

* **General =>** create “Throwable(Manager)” that can spawn them and set the correct type
  + Make distinction between “owner/no owner”, “body/no body” through settings.
  + If throwable has a body, it should be *excluded* from its own raycasts. (As knives have no body, *they* should pick up other throwables with their raycasts.)
  + Extend spritesheet to be *9 wide*, so “owners + no owner” fits in a row.
* Boomerang powerup => simply give you a single boomerang knife (owner)
* Curve powerup => simply give you a single curved knife (owner)
* Dumpling => add sprite, add body, add functionality
* Ghost knife => a grey knife that *ignores anything but players*, *moves at a slow constant speed*, and *acts as a homing missile*

**Fixes:**

* Ghost Town:
  + Each night, make a “Ghost Knife” appear from a cave
  + Don’t turn *everyone* into ghosts, just one player? The one closest to the cave? The one who did the best?
  + Make transition night <=> day gradual.
* Spooky Forest:
  + Flickering lights
  + Allow removing/slicing some trees
  + Light Occluders
  + FURY => auto-throws knives once in a while (make it a central tree, make it predictable/visible)
* Do we need a *settings* menu? Meh, just add “fx, bg, ui, fullscreen” to the *configurable settings*.
* Add feedback, mostly on the main menu. (“Can’t play solo – add a bot.”, “Current mode allows max 4 teams”, …)

**Better bots**

* Instead of only finding the “closest” of something, find them all, calculate distance, then sort based on that.
  + Applicable to knives, collectibles, and players/targets to attack
  + The first one that has a valid path, is chosen.
* Failsafes
  + Create a generail fail-safe against flipflopping. (Check vector over X subsequent frames. If the average “dot product” between them is too low, we’re flip-flopping, so go to the “unstuck”-phase again.)
* Niceties:
  + Give personality.
  + If no knives, *and* no knives for grabs, flee from others?
  + Add the general niceties.

**Game Modes:**

* “Frightening Feast”:
  + Spawn dumplings. (Spawn multiple types, some worth more points, some poisonous??)
  + When touched, grow (considerably), position dumpling randomly inside.
  + When sliced, check if line intersects dumpling circle. (Should be easy algorithm for that.)
  + If so, give dumpling to attacker.
  + *Question:* do you lose the dumplings that came loose as well? Can you eat them again?
* “Dwarfing Dumplings”:
  + Spawn one “huge dumpling” per team. (Predefined locations per arena?)
  + Players themselves are super small (to make space)
  + Also, can only play with *at most* 3 or 4 teams?
* “Ropeless Race”:
  + Figure out how to attach ropes to players.
  + At start, attach ropes, then attach something valuable at the other end.
  + When body is sliced from group “Ropes” => reconnect resulting bodies to the old PinJoints, remove this item from player. (Use collector for that.)

**Future To-Do:**

* Make collectors look better. Also allow placing them in *any* map layer. (Sometimes they should overlay, sometimes they should be ground.)
* All extra rules are untested …
* When possible, permanently show the effects of a powerup (in a unique, clear way, like a “magnet” shape or particle effect for the magnet)
* **Auto-**throwing: automatically use quick-slash when something is near
* Extra buttons in menus:
  + Controller button for *removing* bots
  + Controller button for *exiting* (completely)
  + Button for *changing bot teams* (if they ever learn about teams.
* Menus: Create Human/Bot version for all player colors, pick correct one.
* Mobile version as well?
* **IDEA:** Different *ground terrains*. As long as you’re on that terrain, you are influenced by its special effect (whatever it is).