

Piecepackman

A cooperative maze game for the piecepack matchsticks by Dan Burkey
Inspired by the video game Pac-Man, designed for Namco by Toru Iwatani

Special thanks to playtesters Mary Burkey and Tony Brandl, and to Hunter Burkey for suggesting the cooperative focus of the game.

Required equipment:

Piecepack, Piecepack matchsticks (note: flat or 3D matchsticks work just fine. If you have a stash of spare 3/8" cubes in Piecepack colors, you can combine them with a flat matchsticks set for easier manipulation), optional pawn saucers

Players: 1-4

1 player- Player controls all 4 ghosts (pawns)

2 players- Each player controls 2 ghosts

3 players- Remove one ghost and its color die from play. Cubes of that ghost's color become wild for both the ghosts and Piecepackman.

4 players- Each player controls one color ghost

The Story So Far

Once upon a time, four ghosts lived peacefully in a cozy house at the center of a maze powered by four magical coins. Every day, they cultivated the corridors of their maze with energy cubes, a pleasant-tasting geometric fungus that harmonized with each ghost's ectoplasmic signature. But one dark night, while the ghosts cuddled together in their little ghost house, a treacherous disk-shaped creature known as Piecepackman invaded the maze. Now he's tearing the place apart, indiscriminately eating their energy cubes and devouring their power coins in frenzied ghost-eating rampages. Worst of all, he can regenerate himself with his stock of extra lives. But ghosts know a thing or two about returning from the dead. And now it's time to fight back...

Object of the Game

Players cooperate as the ghosts with the objective to take all of Piecepackman's lives, or end the game with more Energy Cubes than Piecepackman.

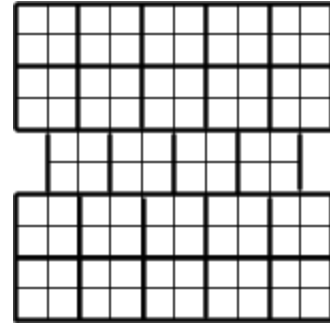
Meanwhile, Piecepackman is trying to collect all the Power Coins and Energy Cubes on the board, and stay alive until the board is cleared.

Setup

The game is played on a maze constructed from piecepack tiles and piecepack matchsticks.

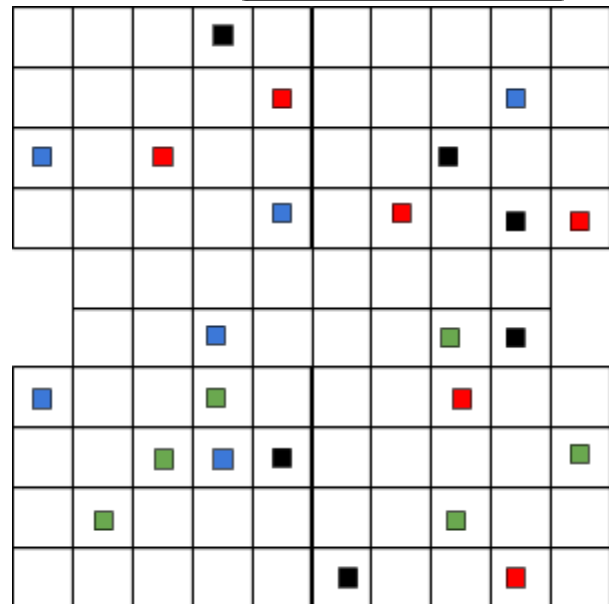
Arrange board tiles

Arrange the 24 piecepack tiles facedown as a 5x5 square, with the center row squeezed in to leave indentations on the sides:



Scatter Energy Cubes

Gather all 24 null cubes from the piecepack matchsticks set in a big handful. These will become Energy Cubes, one of the objectives in the game. Sprinkle them around the board at random, aiming for a relatively even distribution. If any fall off the board, toss them back on. Then straighten them out so the cubes are centered on the squares they landed on, with a maximum of one cube per square. If a cube straddles a line, nudge it into the square it is mostly on. If two cubes are on one square, move one to an adjacent square.



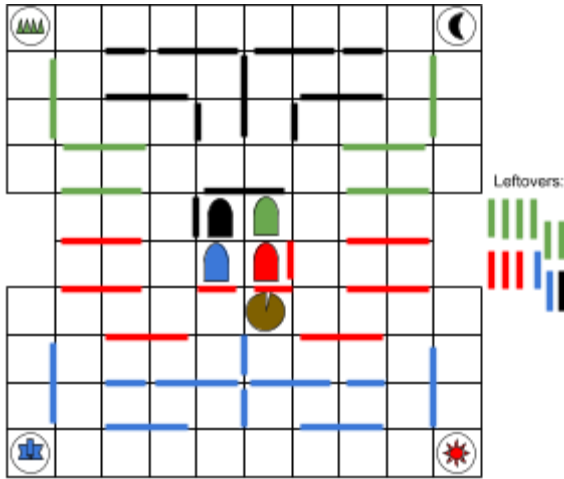
Sample Energy Cube scatter: One cube per square.

Set aside marker coins (see Sample Table Layout on p. 4 for recommended placement)

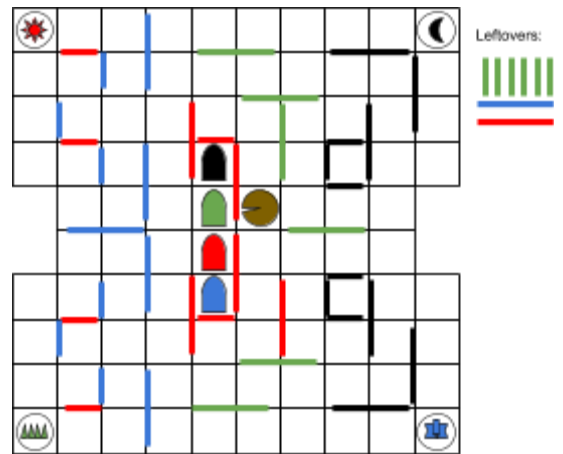
1. Set aside null coins to mark Piecepackman and his extra lives.
2. Set aside Objective and Hunger Timer Marker coins: Ace of arms, 2 of suns, 3 of crowns, 4 of moons.
3. If Piecepackman is headed toward an objective, place the coin of that suit on him until he reaches his goal. If he is in a state of Ghost Hunger, use the numbered coins to mark how many turns of Ghost Hunger he has remaining.
4. Looking at the bottoms of other coins can reveal information about Ghost Hunger duration, so no peeking! Turn the suit sides up and mix up coins, then place one of each suit as Power Coins. Set others aside as Immunity tokens (pawn saucers may replace coins as Immunity Tokens), Ghost Energy Stash markers, and Ghost Movement Order markers
5. Set aside an Ace, 2, 3, and 4 matchstick to use as turn order indicators. If all A's and 3's are needed to build the maze, mark order as follows: no stick=1st, 2=2nd, 4=3rd, 5=4th
6. To increase challenge, remove 2 and 3 coins from the pool used to draw Power Coins.

Choose a maze level to play, and build the maze around the scattered Energy Cubes
 If there are any null cubes in the Ghost House or Power Coin spaces, move them to adjacent squares.

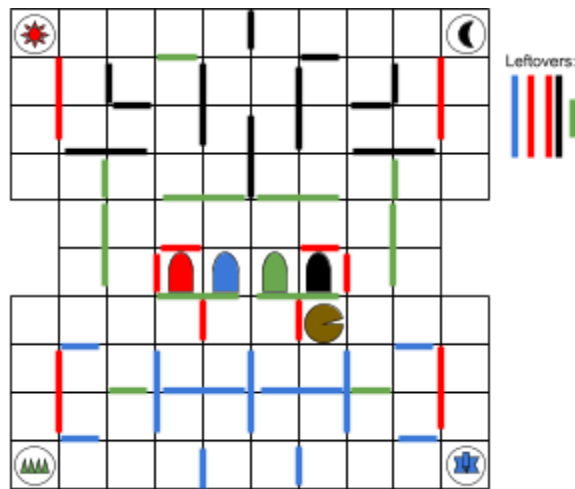
Maze level maps and starting positions (shown without Energy cubes for clarity)



Roundabout (24x 3-sticks, 12x A-sticks)

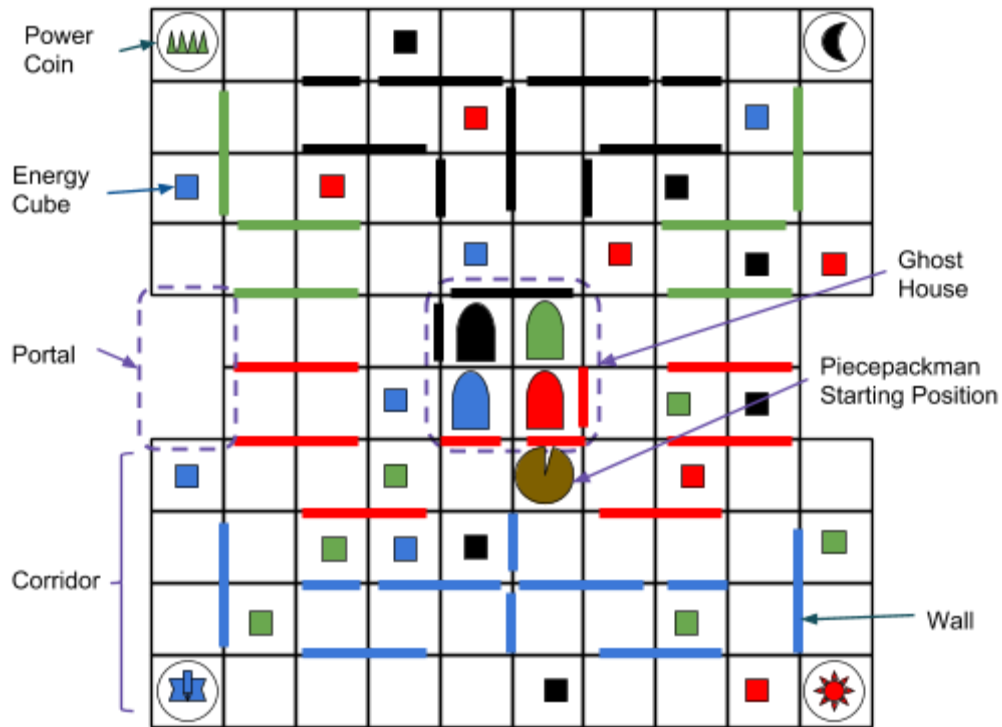


Slip Around the Corner (22x 3-sticks, 18x A-sticks)



The Long and Winding Road (20x 3-sticks, 23x A-sticks)

Anatomy of a Maze (Starting setup for Roundabout)



Discarded lives and power coins

Immunity tokens (stored in the Ghost house until needed during Ghost hunger). May be coins or pawn saucers.

Extra Lives (Null coins)

Piecepackman's Energy Cube stash

Piecepackman wearing green objective marker

Spare objective & hunger timer markers

Ghost Movement order markers (matchstick values A-4 if available, or 2,4,5 if all A's and 3's are used)

Ghost energy cube stashes (Note: Green and Black are currently Dangerous, Blue and Red are Vulnerable)

Sample table layout, mid-game.

Set up markers in the separate areas indicated in the layout on the previous page.

They don't have to be in that exact configuration, as long as everyone knows what is what:

- 4 Objective and Hunger Timer Marker coins: Ace of arms, 2 of suns, 3 of crowns, 4 of moons
- 4 coins as Movement Order markers, with 4 different length matchsticks available nearby as indicators.
- Markers for Ghost Energy cube stashes (Energy cubes will still be on the board). These may also be placed in front of the players controlling each ghost.
- A designated area for the Coin Discard pile.
- A designated area for Piecepackman's Energy Cube Stash
- Immunity markers (coins or pawn saucers) staged in the Ghost House underneath their matching ghost pawns

Now you're ready to play!

Beginning the Game

Turn Phases

Each turn of the game is divided into three phases:

- 1. Piecepackman moves**
 - a. Piecepackman moves autonomously, choosing Energy Cube objectives through dice rolls, and taking the most efficient path to reach his objective, according to the rules in the "Moving Piecepackman" section
- 2. Players negotiate ghost turn order before rolling.**
 - a. This is a time to strategize and think about all the possibilities for what might come next. What if the blue ghost rolls a null and blocks that pathway? Which ghost will need to escape fastest if a hungry Piecepackman approaches? Use piecepack matchsticks of different lengths to mark turn order.
- 3. Ghosts move.**
 - a. Ghosts roll dice of their own color and move according to turn order. Each ghost must use its full roll. Players are still welcome to discuss options, but it is up to the player controlling each ghost to make the final call. Movement is final once the next player moves or PPM's dice are rolled for the next turn, whichever is first.

Moving Piecepackman

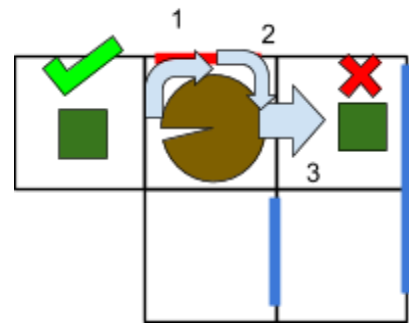
Piecepackman's movement is determined autonomously as the first phase of each turn. During regular movement, Piecepackman's speed is based on movement points from his dice rolls. A quarter rotation costs one point, as does moving forward one space. This system helps Piecepackman make decisions about how to reach his objective: he will always choose the path that costs the fewest points to reach his objective. If that path is blocked by a Dangerous ghost (a ghost that has more energy cubes of its own color than PPM does), he will choose the path that costs the next fewest points, or a different energy cube of the same color. Note: His movement is not affected by Dangerous Ghosts that are not directly in his path.

1. Roll all 4 dice.

- a. Dice values for Piecepackman are: Null=1, 2-5= face value, A=6.

2. Determine Piecepackman's next objective.

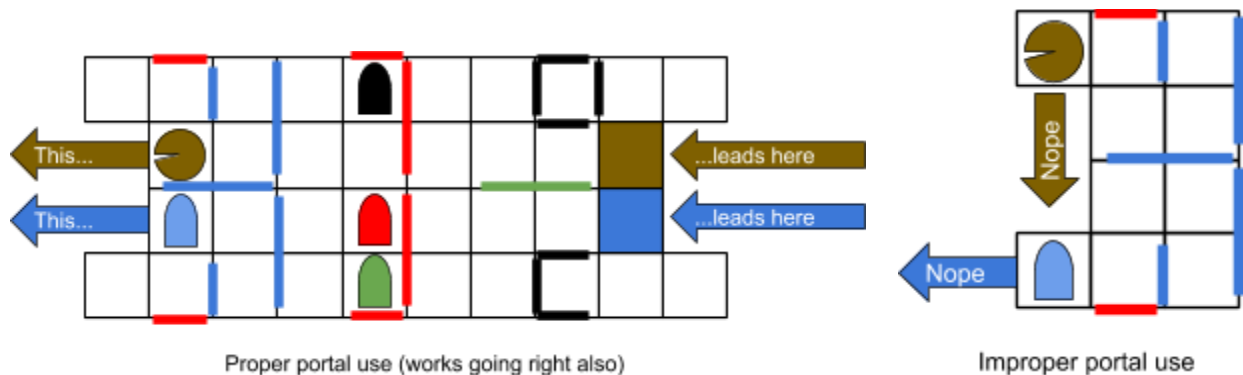
- a. The highest-value die determines the suit of Piecepackman's next objective, and the number of movement points he can spend to get there on this turn.
- b. One square of movement OR one quarter turn costs one movement point.
- c. Piecepackman will move toward the nearest Power Coin or Energy Cube of that suit. *With 3 players, an energy cube of the missing ghost's color is wild until it's collected. Once collected, it is considered the color of the objective suit.* In this image, getting to the energy cube on the right from this position costs 3 points: one for each quarter rotation, and one to move to the next square. If he rolled a green objective, he would choose the cube on the left, which he can reach with one movement point since he's already facing it.
- d. If Piecepackman rolls a high Ace, his next objective is the Power Coin of that suit, if it has not been collected yet. He will continue toward the Power Coin even if he collects an energy cube of that suit.
- e. If there is a Dangerous Ghost (a ghost who has more Energy Cubes of its color than Piecepackman does) on the closest path between Piecepackman and his objective, follow the nearest path that avoids the ghost, or the closest objective of the same suit that avoids dangerous ghosts- whichever is closer. Note: His movement is not affected by Dangerous Ghosts that are not directly in his path.
- f. If two dice tie for the highest value, Piecepackman will choose the one with nearest objective (the one that costs the least movement points to reach).
- g. If the Power coin of his objective suit is closer than the nearest energy cube of that suit, Piecepackman will move toward the coin.



3. **Move Piecepackman orthogonally along the quickest path to his objective.**
 - a. Use all the movement points from the highest die. Remember to count a quarter rotation as a movement point
 - b. Remove any Energy Cubes Piecepackman lands on or passes through (regardless of suit), and add them to his stash.
 - c. Piecepackman will not pursue ghosts unless he is Ghost Hungry, but if he crosses paths with a Vulnerable Ghost (has equal or fewer Energy cubes of its color than Piecepackman), he takes any Energy Cubes it possesses and sends the ghost back to the Ghost House.
 - d. If Piecepackman reaches his objective with extra movement points, he will use them to move toward the next objective of the same suit. (but will re-roll for suit next turn)
4. **If Piecepackman did not reach his objective on this turn, he keeps that objective for the next turn.**
 - a. Place the objective marker coin for Piecepackman's objective suit on top of him with the direction marker aligned with his mouth. You'll remove it when he reaches his objective.
 - b. He will still roll all four dice and use the highest value for his movement points
5. **If Piecepackman collects a Power Coin to initiate Ghost Hunger, finish his movement, then flip the coin value-side up on top of him and follow the Special Rules for Ghost Hunger (p. 9-10).**

A Note about Portals

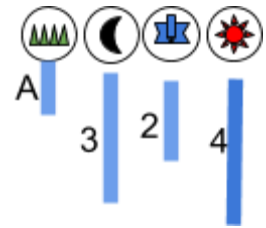
The indentations on either side of the board are portals that teleport a piece to the square on the same row on the opposite side of the board. They may be used by Piecepackman or ghosts. If a ghost uses a portal, its movement ends after the jump; Piecepackman can continue using his movement points to finish his movement after portaling. Portaling does not cost extra movement points- it is the same as moving from one square to another.



Paranormal Activity (Ghost Actions)

Negotiating Movement Order

Because ghosts cannot pass through each other, movement order is an important part of their strategy. After Piecepackman's movement phase, players discuss and decide what order they will move when they roll. They can place turn indicator tokens in movement order or mark this with piecepack matchsticks of different lengths: The shortest stick goes first. In this illustration, players have decided that green will move first this turn, then blue, then black, then red.



Note: Ghosts are not obligated to move to a particular destination based on this planning phase. Players may make their own choices about where to move when it's their turn.

Ghost Movement

- Each ghost moves every turn. After negotiating turn order, ghosts roll dice of their own color.
- Ghosts must use the full value of their roll: Null=0, Ace=1, 2-5=face value. They may backtrack, as long as they end movement on a different square than they started on.
- Ghosts can't pass through other ghosts or occupy the same space as another ghost.

Collecting Energy Cubes

- A wise ghost needs to collect energy cubes of its color in order to attack Piecepackman. Be careful, though: if he eats you, he will take them all.

Attacking Piecepackman

- A ghost can attack Piecepackman if it has more Energy Cubes of its color than he does, or if it is in an immune state during Ghost Hunger.
- Ghosts attack by landing on or passing through the space Piecepackman occupies.
- **If a ghost attacks Piecepackman, the turn ends immediately.**
- The attacking ghost takes back any energy cubes of its color that he has collected.
- Ghosts return to the ghost house to begin the next turn.
- Remove any coins marking Piecepackman's objective or Ghost hunger duration and set them aside
- Remove Piecepackman from the board and place one of his Extra Lives on his starting position. If there are no extra lives to place, the ghosts win the game.

Getting Eaten

If Piecepackman eats a ghost, he takes any Energy Cubes in the ghost's possession, and the ghost pawn is moved back to the Ghost House. The ghost loses a turn and remains in the ghost house for the next movement phase. If this happens during Ghost Hunger, the ghost also receives an Immunity Token for the remainder of Ghost Hunger, and can attack Piecepackman once it leaves regardless of its cube collection.

Note: It is perfectly acceptable to move into Piecepackman's path or even commit ghost suicide and return to the Ghost House for a turn (for example, to receive Immunity during Ghost Hunger).

Special Rules for Ghost Hunger

When Piecepackman eats a Power Coin, he becomes Ghost Hungry. During Ghost Hunger, Piecepackman's only objective is to eat the nearest Vulnerable ghost. His hunger is so frenzied that he can even eat ghosts who have more energy cubes than he does.

As soon as Piecepackman collects the Power Coin, he gets an immediate bonus roll. Roll all 4 dice and use the highest value (Null=1, A=6) to move him toward the closest vulnerable ghost of any color (During ghost hunger, all ghosts are vulnerable until they are eaten and receive Immunity). While he is Ghost Hungry, he can turn corners for free (he will still choose the path with the least turns if two ghosts or pathways are equally close). After taking his initial roll, he flips the coin over to determine how many turns he will remain Ghost Hungry.

Ace coin: Ghost Hunger ends after the bonus roll, but Piecepackman gains an extra life. Add the ace coin to the Extra Lives next to the board.

2-5 coin: Ghost hunger continues for that many turns after this turn. Place the Power Coin value side up on top of Piecepackman to signify the number of turns after this turn Ghost Hunger will last.

During Ghost Hunger turns, Piecepackman begins his movement phase by rolling all four dice and choosing the highest value for movement (Null=1, A=6). Piecepackman will pursue the nearest vulnerable ghost who is not blocked by an immune ghost. If the nearest ghost is blocked by an immune ghost, he will go by the nearest clear path or toward the closest unblocked ghost. When all ghosts are immune, he will use remaining moves to go toward the nearest Power coin. If he is trapped in a corridor by two immune ghosts, he will move to the center point between them.

If Piecepackman eats a ghost, he takes any Energy Cubes in its possession. The eaten ghost returns to the Ghost House and loses its next turn, but it becomes Immune for the remainder of

Ghost Hunger. This means that during the current Ghost Hunger, the Immune ghost can attack Piecepackman and take one of his lives, along with any of its own Energy cubes in his possession. Place an Immunity Token under the ghost to signify that it is immune from Ghost Hunger. This is removed when the Ghost Hunger phase ends.

If Piecepackman is lucky enough to consume another Power Coin while Ghost Hungry, the effects of that coin are added to his current Ghost Hunger, except that he does not receive the immediate bonus roll. Any Immune ghosts lose their immunity.

At the beginning of each Ghost Hunger turn, place the next lower number coin on PPM as a reminder of how many Ghost Hunger turns remain.

Ending the Game

The level ends when all power coins and cubes are off the board, or when all of Piecepackman's extra lives have been taken (Note: the piecepackman on the board also counts as one life, so he starts with one life and three extra lives).

If the ghosts have taken all of Piecepackman's lives, or if they hold a majority of the total energy cubes, the ghosts win!

Glossary:

- **Dangerous-** A ghost is Dangerous if it can attack Piecepackman:
 - If it has more energy cubes of its color than Piecepackman
 - If it is Immune during Ghost Hunger
- **Energy cube-** A null cube from a piecepack matchsticks set, which can be collected from the board by Piecepackman or a matching color ghost. If Piecepackman eats a ghost, he gets the ghost's energy cubes. If a ghost attacks Piecepackman, it takes back any energy cubes of its color that are in his possession.
- **Ghost-** A pawn representing one of the friendly native inhabitants of the maze.
- **Ghost House-** The partially enclosed starting position for the ghosts, and where they return if eaten. Piecepackman may not enter it. After ghosts leave it, they may only re-enter it if they have been eaten
- **Ghost Hunger-** A state where Piecepackman's objective temporarily changes from collecting energy cubes and power coins to eating ghosts. Ghost hunger duration is determined by the value of the power coin that Piecepackman consumed to start the frenzy.
- **Immune-** A ghost becomes Immune to Ghost Hunger when it returns to the Ghost House after being eaten during a Ghost Hunger frenzy. It is marked by placing a spare coin under the immune pawn. This only applies when eaten during a Ghost Hunger phase (not when a ghost with fewer energy cubes is eaten in passing). An Immune ghost is Dangerous regardless of how many energy cubes it has. Immunity only lasts for the duration of the current Ghost Hunger.
- **Piecepackman-** A null coin representing the vicious, crazed invader who terrorizes the ghosts' home.
- **Portals-** Indentations on either side of the board that transport ghosts or Piecepackman to the same row on the opposite side of the board. A ghost ends its movement after using a portal, while Piecepackman continues movement through the portal to use the full value of his roll.
- **Power Coin-** A suit-side-up coin that can induce Ghost Hunger for Piecepackman. It becomes Piecepackman's goal if he rolls an ace of that suit.
- **Vulnerable-** A ghost is vulnerable if it can be eaten by Piecepackman:
 - During Ghost Hunger
 - When the ghost has as many or fewer energy cubes of its own color than Piecepackman (except during Ghost Hunger Immunity)

ALTERNATIVE GAME MODES FOR THE ADVENTUROUS

Piece and Harmony Mode (AKA Casey at the Bat Mode)

Attempt to reach an endgame without eliminating all of Piecepackman's lives, winning solely by collecting more energy cubes than he does.

Daedalus Mode: Design Your Own Maze

In Daedalus Mode, design your own maze and then play in it. For an optimal experience, follow these constraints:

- Fill the maze with corridors one space wide.
 - If you have a large cluster of open squares (for example, a 2x2 square with no walls in the middle), add sticks to make corridors narrower
 - Exception: The interior of the Ghost House and the hallway outside it may combine to form a space more than one square wide.
- Avoid creating dead ends. This reduces choice and challenge.
- The ghost house can be any configuration of four connected squares partially enclosed by sticks with one or two exits.
- It's easier to conserve your wall pieces (Ace and 3-sticks) if you place the long ones first.
- Long corridors with no exit in the middle can increase tension, but they can also get monotonous if overused.
- A variety of shapes helps PPM make autonomous decisions. If one direction has more turns, it will cost more moves and he will go the other way.
- Any space that is completely enclosed on all sides is not accessible. Limit these to increase the playing area and pathway options.

Power-up Mode (Under construction- play at your own risk!)

Each ghost has a special power that can be used a certain number of times per level. At the beginning of each level, ghosts roll to determine how many times they can use that power per level (0-5). Players may use spare piecepack matchsticks to keep track of how many power uses they have (or possibly strength of power, depending on power)

Possible ghost powers:

- Pass through walls
- Pass through walls of their color
- Return to Ghost House to stockpile cubes
- Pass cubes to another player
- Can collect any cube
- Shortcutting through ghost house
- Gain additional cubes from PPM if successfully eaten
- Use portal without ending movement
- Teleport from one Power Coin to another
- Pass through other ghosts
- Attack Piecepackman without regard for cube number

- Cubes give ghost a movement bonus (a nod to Blinky's "Cruise Elroy" mode in Pac-Man)
- Drop a cube anywhere on the board to influence PPM's movement
- Go through an adjacent wall when they roll an Ace

If playing with ghost powers, give PPM extra movement for balance. Maybe one extra point for each cube he has the most of (e.g., if he has 5 red, 3 black, 4 green, 1 blue, he will add 5 to his roll)

Player vs. Player modes

Piecepackman vs. Ghosts (2 players)

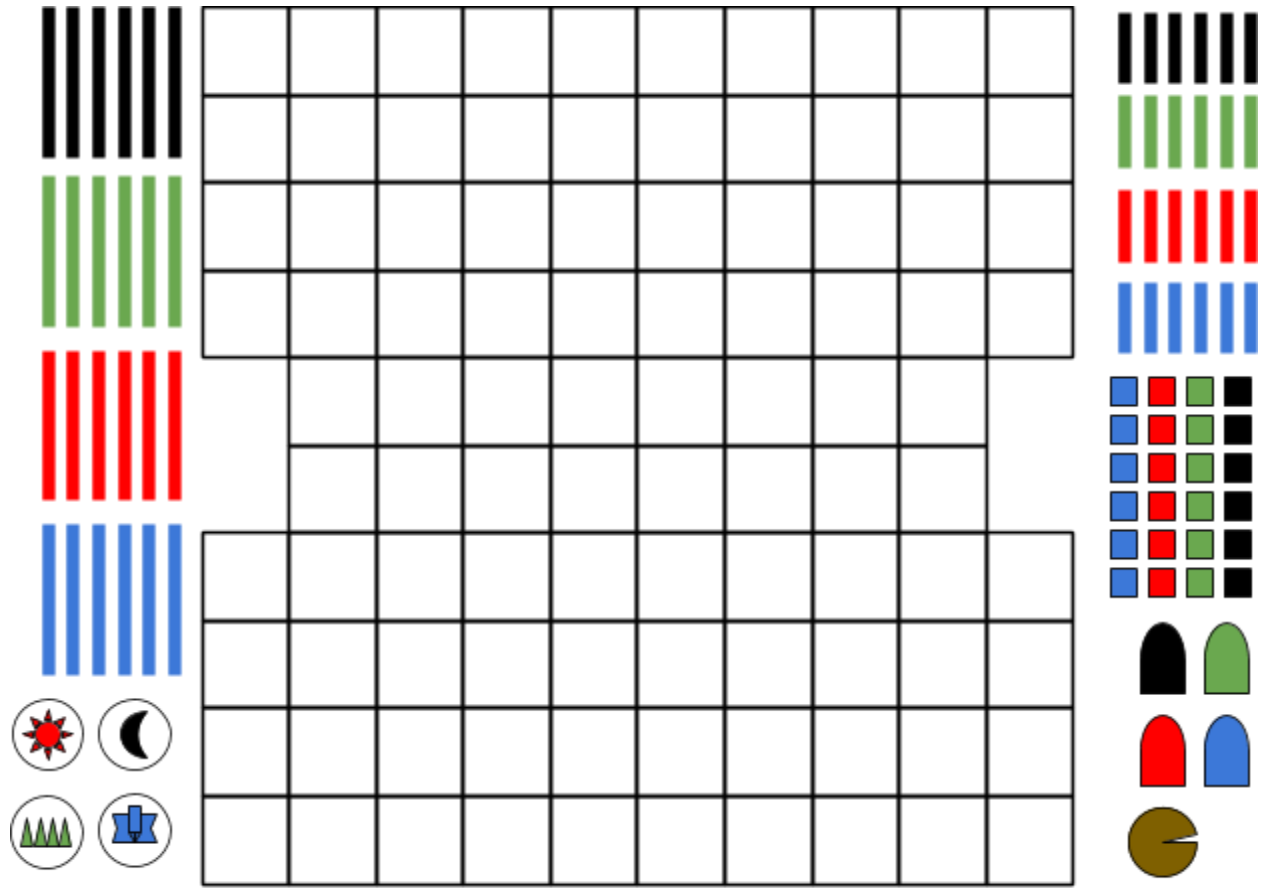
Instead of playing with an autonomous Piecepackman, play an asymmetrical game with one player playing as Piecepackman. Play as normal, with the following exceptions:

- Piecepackman does not need to declare an objective before moving.
- Ghost player does not need to declare movement order.
- Piecepackman begins with only one extra life.
- Piecepackman still rolls all dice and chooses the highest number, but Null=0 and Ace=1
- If Piecepackman picks up a second Power Coin to extend Ghost Hunger, any Immune ghosts keep their immunity until Ghost Hunger ends
- Ghosts become dangerous if they have cubes of their color EQUAL OR GREATER to Piecepackman's collection in their color
- Piecepackman's turn ends after a ghost is eaten
- Note: Ghosts still can't collect coins (but they can pass through them)

Energy Cube Collection Race (2-4 players)

Play as in Co-op Mode, but the new player objective is to be first to collect all Energy Cubes of your color, or to have the most cubes of your color when all cubes and coins have been collected.

- In this version, Piecepackman has infinite lives (but everyone still returns to start when attacked).
- During setup, adjust energy cubes until players agree that they are well-distributed across the board.
- Ghosts may collect the power coin of their color to initiate Ghost Hunger or end the game if it is the final objective.
- Ghosts must exit the Ghost House as soon as it is possible for them to do so.



Maze Template

If you are viewing this document in Google Docs, you can make a copy and use this Google Drawing template to keep track of your maze designs.