Experiments in Progress

These are new puzzles that aren't finished yet. You can try them out and let me know what you think.

- **Bee Donimoes** is a puzzle race game I designed where a swarm of dice bring nectar back to the hive. (1-6 players, double-six dominoes, 3-6 dice, and a timer)
- **Adding Donimoes** is a puzzle I designed where you add dominoes in the given order. (1 player, double-six dominoes)

Bee Donimoes

A puzzle race game where a swarm of dice bring nectar back to the hive.

Players

1-6

Equipment

- a set of dominoes from double blank to double six
- 3 to 6 six-sided dice
- a one-minute timer

Object

Bring the nectar back to the hive in as few moves as possible, faster than the other players. One die is chosen as the queen bee and doesn't move, the others have to form a connected group around her.

Setup

Decide how many dice you want to use: 3 or 4 are good for learning the game, and 5 or 6 make more challenging puzzles. Put aside all the dominoes with numbers higher than the number of dice, and shuffle the rest. Then place the shuffled dominoes face up to form a rectangle of numbers.

Look for the dominoes with a number at one end and a blank at the other. The number on each of those dominoes is the starting space for the die with the matching number. You can't have two of those dominoes next to each other, so swap them with their neighbours until none of them are touching.

Roll 2 dice, and place each one on its starting space. If a die matches the other die or doesn't match any dominoes, reroll it.

For example, here's one possible setup for four dice:
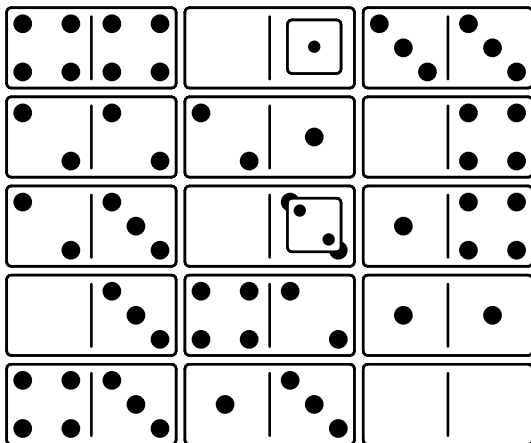
Play

The game is played in rounds, and each round starts by adding a die to be the queen bee. Take one of the dice that's not on the board, and roll it until it matches one of the empty starting spaces. Place it on the starting space.

The queen bee never moves during a round, and all the other bees have to bring their nectar back to her in one connected group. (Diagonal connections don't count.)

The dice can only land on their own numbers. They can move between numbers in two ways: 1. In a straight line along a row or a column. They can pass over other numbers, squares with their own number, or other dice. This counts as one move. 2. Changing direction over other dice. In the middle of a regular move, a die may make a 90° turn directly above another die. Later in the same move, it may make more turns directly above other dice. No matter how many turns it makes, this still counts as one move.

The blank on the other end of the queen bee's domino is wild. Any die can land there. A die may also leave the wild space on a later move.

See the example solution after the rules.

Solve

As soon as the queen bee is placed, all players try to solve the puzzle at the same time. Do not touch the dominoes or dice while you are trying to solve the puzzle! Once a player has found a solution, they say the number of moves they need, and start the timer. The other players have until the timer ends to find a better solution.

A solution with fewer moves is always better. If two players find solutions with the same number of moves, then the player with fewer points wins the tie. If they have the same points, then the player who said it first wins the tie.

If there is no solution, then the first player to say it's impossible starts the timer. They win the round if no other player can find a solution before the timer ends.

Demonstrate

Whichever player has claimed the best solution when the timer goes now has to demonstrate that solution, counting the moves out loud. Players should demonstrate with no more than a few seconds of hesitation. If they made a mistake or can't remember the solution, let the player who claimed the next best solution demonstrate it.

The player who successfully demonstrates a solution scores one point.

Next Round

Put the dice back on their starting spaces. If there are any empty starting spaces, start the next round by adding a queen bee on one of them. Otherwise, shuffle all the dominoes and set up again.

Example Solution

Let's solve the set up above if the 3 die is the queen bee. The first thing to do is check whether there are enough places for the bees to land around the queen bee. The queen is surrounded on three sides by 3s and 4s, so something has to land on the wild space. Next to that is a 4 and a 2, so you know that the 1 has to end up on the wild space with the 2 next to it.
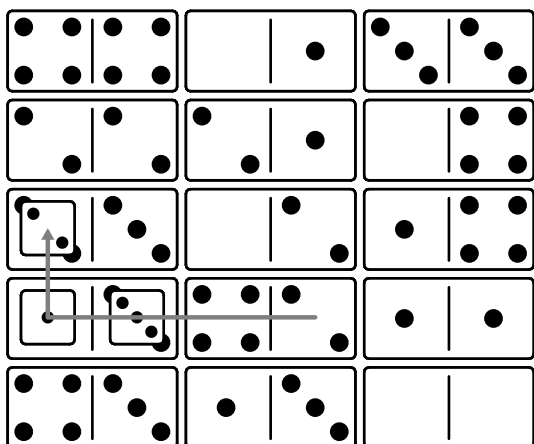
Now that we know where we're going, it seems best to start by moving the 2 where it can guide the 1 onto the wild spot:
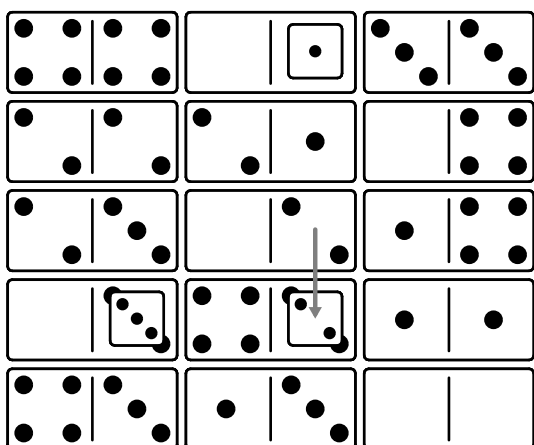
With the 2 in place, the 1 can get to its target.
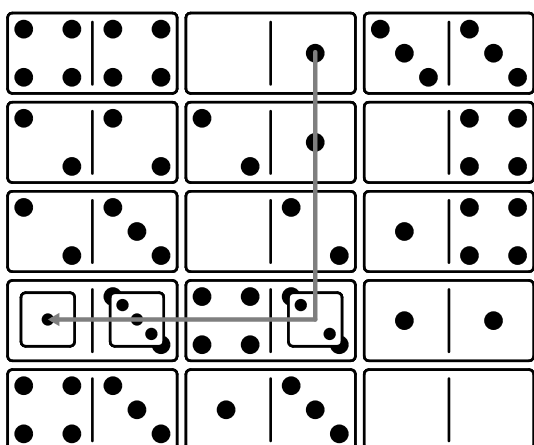
Finally, the 2 can get to its target with the help of the 1, in a nice leapfrog pattern.

End Game

Play for an agreed number of rounds, the player with the most points wins. In case of a tie, play an extra round.

To play a series of games, start with 3 dice and play 1 round. Add in another die and all the dominoes with numbers up to 4, then play 2 rounds. Continue with 5 and 6 dice for a total of 10 rounds.

Variants

If you find the race too stressful, play cooperatively. Choose a player each turn to move the dice, and have the other players give suggestions for how to solve it.

It can also be played solitaire, either with or without a timer.

Adding Donimoes

The idea was to avoid the slow setup phase at the start of the other puzzles.
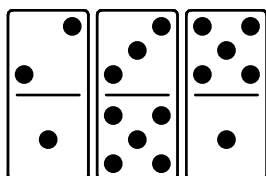
Goal

The goal is to add all the dominoes from the queue onto the board. Each problem shows the queue of dominoes to add, from left to right.
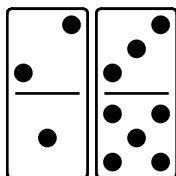
Start

Take the two dominoes from the left end of the queue and place them on the board in the same position relative to each other.
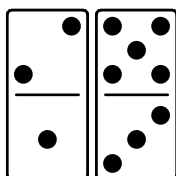
For example, if this is the queue:

Then the start position is like this:

Not like this:

Moves

There are only two ways a domino can move.

Adding

The next domino from the queue can be added to the board if it matches at least two of the adjacent numbers on neighbouring dominoes. Those two adjacent numbers can match the two ends of the domino, or both match one end.

In this example, the 13 can be added, because it matches the 1 below and the 3 below.
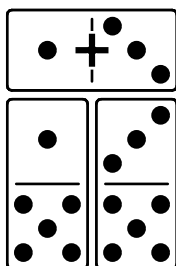
In this example, the 52 can be added, because it matches the 5 beside and the 5 above. The 52 could also be added in the vertical position.
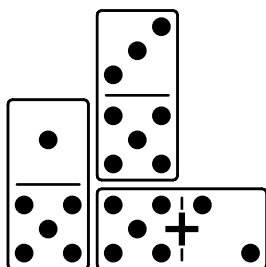

Sliding

Move a domino one space along its long axis so that it ends up with at least one of its numbers next to an adjacent number that adds up to six, or it matches at least two of the adjacent numbers on neighbouring dominoes.

In this example, the left domino can move down, because the 1 and the 5 add to six.
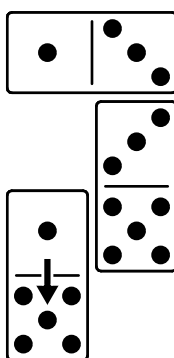
The left domino can move back up, because the 1 matches the 1 above, and the 5 matches the 5 to the right.
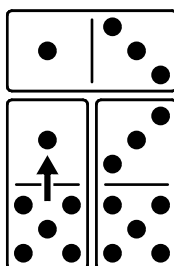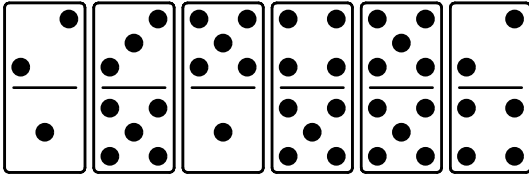

Stay Connected

All the dominoes on the board must stay in one connected group, you can't split the group after moving a domino.

Problems

Here are the starting positions for several Adding Donimoes problems. The solutions are listed at the end.

Solutions

Adding Donimoes Solutions

Here are the solutions to the Adding Donimoes problems. For each step, move the listed domino left, right, up, or down. Adding moves contain the domino numbers, (H)orizontal or (V)ertical direction, and the position to place it. The top left corner is 11, one space to the right is 21, and one space below is 12.

1. 36D, 23V21, 33D, 53V32, 25H21, 36D, 23D, 22H13, 33D, 53D, 22R

Donimoes is an original puzzle designed by Don Kirkby.