

Everyone can participate in these puzzles, compare notes, and share solutions. *Enjoy!*

## The Domino Effect

The earliest historical record of dominoes is from 13th century China. Since then, dominoes have become known around the world and are still popular in many areas as a favorite game and toy.

There are many international domino competitions; some involve playing championship games of dominoes, and others involve using the dominoes as a building toy to create record-breaking rows of tiles that can knock each other down in order.

Dominoes rank in the top 20 greatest strategy games of all time. The game does not require batteries or an internet connection; it can be played anywhere, any time.

## Domino Lingo

The phrase *domino effect* refers to a series of events that occur as a chain reaction, with one event setting off the next. The phrase has gained meaning in everyday life, independent of dominoes themselves.

A *domino* is a small rectangular tile with a line down the middle and dots representing numbers on each side of the line. Most dominoes today are 2 inches long by 1 inch wide and a little less than half an inch thick. The dots on a domino are *pips*.

The most popular domino set used today is the *double-six set*. The tiles contain all possible combinations of 0 (blank), 1, 2, 3, 4, 5, or 6 pips. Other sets include *double-9*, *double-12*, *double-15*, and *double-18*.

Each domino is described by the number of pips it has on each side, with the smaller number going first. For example, a 2-5 *domino* has 2 pips on one side and 5 pips on the other. A tile with the same number of pips on both sides is called a *double*. The tile with 3 pips on each side is the *double-three*.

The dominoes containing a certain number belong to a *suit*. All dominoes with 1 pip on one of the sides are in the ones suit. Most dominoes belong to two suits.

The domino with the highest total number of pips is known as the *heaviest* domino in the set. The domino with the lowest total number of pips is the *lightest* domino.

## Domino Statistics

Apply the domino lingo to answer these questions.

Answer each question for a double-six domino set. Then think about the answers for the larger sets and talk about patterns you see in the answers.

- How many suits are in the domino set?
- How many domino tiles are in each suit?
- How many domino tiles are in the set?
- Which is the heaviest domino in the set?
- Which is the lightest domino in the set?
- What numbers are possible sums for the pips on a domino?
- How many different tiles contain each possible total value?

## Domino World Records

Some people enjoy the challenge of building domino constructions. Some people build up, trying to make the tallest domino tower; others build out, trying to make the longest chain of dominoes that will topple each other once the domino effect is started. Some people set world records by playing dominoes at the same time.

Here are some recent world records.

- The longest domino train to be toppled to show the domino effect had over 4.5 million dominoes.
- The highest number of domino tiles resting on top of a single domino for over an hour is 1,002.
- Over 580 high school students have played dominoes at the same time.

## Dominoes Determine the Name of a Town

Titusville, Florida may have earned the nickname of “Space City, USA” because it is the home of Kennedy Space Center, but its formal name was determined by a game of dominoes! In the late 1800s, Clark Rice and Henry Titus were both involved in building the community and had hoped to name the town after themselves. They challenged each other to a game of dominoes to determine the town’s name. Apparently, Henry won.

## Rules for Playing Dominoes

There are hundreds of variations for the game of dominoes.

Here is a set of rules for the basic domino game that people of all ages can play.

- Two to four players can play this game with a double-six domino set.
- For more than two people, decide the order for turns (to the right or left around the table).
- Determine a point total goal for the winner, if score is kept.
- Place the dominoes face down (so no one can see the pips) on a table or tray and shuffle them to mix them up.
- Each player draws seven tiles and sets them up so they can see the pips but no other player can.
- The player with the heaviest domino (the one with the highest total) begins by playing that tile face up in the middle of the table. The double-six is the heaviest tile.
- A turn consists of connecting tiles to the dominoes already played so that the number of pips on the touching sides are the same. Players can play on any open end of a tile. For example, if the starting domino is a 4-6, the next player can play a tile that has either 4 or 6 pips on one side; the number on the other side of the tile just played determines a possible match for the next player.
- When a doubles tile is played, it can be put perpendicular to the open end of the tile on the table. That way, players can build off either side of the doubles domino.
- When a player has no tiles with pips matching an open end on the table, she must draw tiles from the bank of face down tiles until a matching tile is drawn.
- Play ends when one player has used all of her tiles or no one can make a move.
- If multiple rounds are played, the person who ends a round by going out is awarded as many points as there are pips on the other players' tiles that have not yet been played.
- The next round may be started by the player with the heaviest tile.

## Domino Statistics Answers

Apply the domino lingo to answer these questions.

Answer each question for a double-six domino set. Then think about what the answers might be for the larger sets and discuss your ideas.

### Double-Six Domino Set

- How many suits are in the domino set?  
Answer: There are 7 suits in the double-six domino set. They are blank or 0, 1, 2, 3, 4, 5, and 6.
- How many domino tiles are in each suit?  
Answer: There are 7 tiles in each suit. They include the suit number paired with every number from 0 to 6.
- How many domino tiles are in the set?  
Answer: There are 28 tiles in a double-six domino set. All tiles except the doubles belongs to two suits; they should not be counted twice. The tiles are: 0-0, 0-1, 0-2, 0-3, 0-4, 0-5, 0-6, 1-1, 1-2, 1-3, 1-4, 1-5, 1-6, 2-2, 2-3, 2-4, 2-5, 2-6, 3-3, 3-4, 3-5, 3-6, 4-4, 4-5, 4-6, 5-5, 5-6, 6-6.
- Which is the heaviest domino in the set?  
Answer: The 6-6 double tile is the heaviest.
- Which is the lightest domino in the set?  
Answer: the blank-blank, or 0-0, tile is the lightest.
- What numbers are possible sums for the pips on a domino?  
Answer: The pips on a domino can total any number from 0 to 12.
- How many different tiles contain each possible total value?  
Answer:

<b>Total</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>
<b>Tiles</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>4</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>1</b>