

Power Play is a game for two or more players. You will need a deck of cards numbered 0 through 9 (you can make your own, or print the set from the following page).

Game Play:

Each round, two cards are turned over from the top of the deck to create a two-digit target number. Every player then attempts to write the target number as a sum of two or more powers.

For example, if the cards turned are a 5 then a 2, players attempt to write a sum of powers that is equal to 52. There are two rules:

1. All exponents must be greater than 1.
 $7^2 + 3^1 = 52$ is not allowed.
2. You may not use the same base more than once.
 $2^5 + 2^4 + 2^2 = 52$ is not allowed.

There are three ways to write 52 as a sum of two or more powers using the rules above. They are listed upside-down at the bottom of this page.

Sometimes, the target number is impossible to write as a sum of powers. In this case, the goal is to write a sum of powers that is as close as possible to the target.

Scoring:

Each game lasts 5 rounds. The goal is to have the lowest score after the final round.

Score each turn as follows:

If your expression equals the target number, you get 0 points.

If your expression does not equal the target number, your score is the difference between the value of your expression and the target number.

Add your score for each of the five rounds to get your total score. The winner is the player who scores the fewest points.

Variations:

You may set a time limit for each round.

To make the game easier, you may eliminate rule 2 above.

0

1

2

3

4

5

6

7

8

9