

COUNTDOWN

Background

A version of this numbers game is played on the popular television program, Countdown (called Letters & Numbers in Australia).

Materials: Large numbers (100, 75, 50 and 25) and small numbers (1 – 10), two of each

Game Objective: To make the target using some (or all) of the given numbers and the four basic operations of addition, subtraction, multiplication and division. (Note: Each number can only be used once).

Summary:

- A player chooses the combination of 6 numbers they would like to select, e.g. 1 large and 5 small or 2 large and 4 small numbers, etc.
- All players must use these numbers
- A target number is generated between 101 and 999
- Players use some (or all) of the numbers and any of the four basic operations (addition, subtraction, multiplication and division) to reach the target number (or get as close as possible)
- Each number in the list can only be used once
- Division can only be used if the result is a whole number (no fractions are allowed)
- The winner is the player closest to the target number

Timers and Scoring

In the television version of the game, players only have 30 seconds to complete their calculations before having to show their result. Players are also awarded points depending on how close they are to the target number. For example, if the target number was 564:

- 10 points for reaching the target exactly
- 7 points for getting within 5 of the target number, higher or lower, e.g. 569 or 571 for a target of 564
- 5 points for getting within 10 of the target number, e.g. 564 or 574 for a target of 564.

Variation:

Rather than simply trying to reach the target number, an alternative version of this game encourages players to make as many numbers that are as close to target number as possible. For example, if the target number is 564, players could try to make 562, 563, 565, etc.

General Advice:

It is important to encourage students to record equations using correct mathematical notation. The process may need to be modelled as the student explains their method to the class. Often students will write equations as they perform each step. This can result in an equation that mathematically is incorrect.

For example, imagine that the target number is 564 and the numbers selected are 100, 25, 5, 4, 10 and 1. A student might record $100 \times 5 + 500 + 4 \times 10 + 25 - 1 = 564$. Although the solution is correct the 'grammar' of the equation is incorrect as $100 \times 5 \neq 500$. Instead the equation could be correctly recorded as $100 \times 5 + 4 \times 10 + 25 - 1 = 564$.

Resources:

There are many online versions of Countdown that include example solutions, including:

- Numbers Game: <http://theproblem.com/countdownnumbers.php>
- Countdown Practice (includes a Book): <http://www.maths.com.au/comcountdownonline.htm#numbers>