

Mixed Operations

— STAKE YOUR CLAIM —

GAME

Have a paper with a number line from 0 to 99 to share. On a turn, a player uses two random cards from 0 to 9, choosing the order of these two digits, to generate a number from 00 to 99, and then puts that number on their side of the number line. The first player to get four numbers in a region without any of the opponent's numbers in between wins. The game can also be played from 000 to 999 if you like.

— GRABBING FACTORS —

GAME

Use a board with a 4 by 6 grid of numbers from 1 to 24. On a turn, a player chooses a number that is uncovered and has at least one factor uncovered – the player gets the selected number and the other player gets any or all of the uncovered factors (their choice as to how many). Play alternates until there are no legal numbers left. The players add up their numbers and the higher sum wins.

This can also be played as a solitaire puzzle, sometimes called Taxman. In this version, the one player selects each number and the taxman gets all the available factors. Play continues until the player no longer has a legal move - at that point, the taxman receives the remaining numbers. The goal is to have as large a sum as possible - bigger than the taxman when that's possible.

Make the range of numbers suit the ability of the players - it could be 1 to 12 or as high as 1 to 60.

— PARENTHESES PUZZLES —

PUZZLE

These puzzles are very easy for an adult to create. Take any equation, such as $9 = (2 + 7) \times (5 - 2 \times 2)$ and remove the parentheses. The challenge for your child is how to take $2 + 7 \times 5 - 2 \times 2$ and add parentheses to it so that the result is 9.

— COUNTING NEIGHBORS —

GAME

Use three dice and an 8 by 8 board of numbers from 1 to 64. A player rolls the dice and uses addition, subtraction, multiplication, and division to make any unmarked number on the board. The player marks this square and receives one point for the square plus one more point for each marked square that it touches, including diagonally. If a player cannot make a play, any other player who finds a play can claim that score. Play five or more rounds, with the largest score winning.

Some game options are to use a fourth die, and to use a smaller or larger board.