

# Shut the Box

Shut the Box is one of my favourite math games and I have collected several wooden versions of it. It can be played with 2-4 players or in solitaire form for students in grades 1-9. It focuses on developing computational fluency and flexibility as well as developing an understanding of probability.

**Original sources:** Historical references site the game as coming from the north of France as early as the 12<sup>th</sup> century, a game that was commonly played by sailors and those that fish by trade.

## Materials needed:

- 1) Shut the Box wooden game (available in toy and game stores, online, etc) or
- 2) Regular playing cards (Ace-9) or
- 3) Cardboard box, bamboo skewer and heavy paper (to make your own)

## Instructions for playing as a solitaire game:

The goal of the game is to have the lowest sum of numbers left on your gameboard.

- 1) A player rolls both dice and adds both numbers together.
- 2) The player turns down the number tile for the sum or any combination of tiles that equal the sum.
  - a. For example, the dice roll results in a sum of 9. You can turn down the 9 tile or any combination that equals 9 - (4+3+2) (7+2) (6+2+1) etc.
  - b. Once a tile is turned down, it cannot be used again. For example, later in the game, if the sum of 9 is rolled and the 5 tile is already turned down, then you cannot use the combination of 5+4 or 5+3+1.
  - c. Once the 7, 8, and 9 tiles are turned down, the player can choose to roll 1 or 2 dice for each turn.
- 3) When a player cannot play (cannot complete a turn by turning down numbers to make the sum), they are out of the game and has a score of the sum of the remaining UNCOVERED numbers.
- 4) The player can keep track of their scores to compare and try and improve on their "best" score.

**To play with two or more players:**

- 1) Players take turns playing a game each, as per the solitaire game.
- 2) At the end of each player's game, they record their score for the round.
- 3) The player with the lowest score at the end of the round, wins that round.
- 4) After playing multiple times, players can also average their scores and the player with the lowest average wins the whole "tournament".

After a game, the teacher can ask questions to promote thinking, computational fluency and flexibility, and reflection such as:

- a. If this  $<$   $>$  sum was the goal, what different number combinations could you turn down?
- b. What sums are more or less likely to come up? How does this help you think about strategies to play this game?

**BC Mathematics Curricular Content and Competencies:**

- computational fluency develops from a strong sense of number
- addition and subtraction facts to 20
- use reasoning to explore and make connections
- develop mental math strategies
- develop, demonstrate and apply mathematical understanding through play
- explain and justify mathematical ideas and decisions