Shut the Box

Mid-Valley
STEM-CTE HUB

www.midvalleystem.org
midvalleystemctehub@linnbenton.edu
Linn-Benton Community College
Albany Campus - CC-212

Mid-Valley
STEM-CTE HUB

Shut the Box

The Shut the Box STEAM Kit engages students in math fluency, probability, and critical thinking through a classic wooden dice game. With 5 four-player Shut the Box sets included, this kit allows small groups to explore number combinations, addition strategies, and risk-based decision-making in a hands-on, social environment. The game encourages quick mental math, pattern recognition, and strategic reasoning—perfect for integrating STEAM learning into playful, collaborative settings.

Grade Level

2nd - 8th

Group Size

up to 4 students per group

Time Duration

15 - 45 minutes

Content of Kits

Components

- 5 - four player Shut the Box games

Mid-Valley
STEM-CTE HUB

Usage

Getting Started

1. **Introduce the Rules -** Explain the objective: roll dice and close numbered tiles by matching the sum of the dice roll. The goal is to close all tiles or have the lowest score when no more moves are possible.
2. **Demonstrate a Sample Round -** Play a few example turns as a class so students can see how to select number combinations and think through their choices.
3. **Group Students Strategically -** Arrange students in groups of 2–4 per game board. Encourage mixed-skill groups so students can learn strategies from each other.
4. **Encourage Math Talk -** Ask students to explain out loud how they chose which numbers to close. This promotes verbal reasoning and reinforces mental math.
5. **Set Up Rotation or Tournament Play -** For longer sessions, rotate groups between boards or run a mini-tournament to increase engagement and practice.

Storage

- **Store Boards Flat -** Place game boards flat in a sturdy storage bin to prevent warping or damage to tiles.

Troubleshooting

- **Tiles Stick or Don't Move Smoothly -** Wipe tiles and board surfaces with a dry cloth. Avoid using liquids that may cause swelling or damage to wooden parts.
- **Confusion About Number Combinations -** Encourage students to count out loud and try multiple combinations before making a decision.
- **Players Forget Score Tracking -** Use whiteboards or paper score sheets for each group to help track rounds and reinforce addition practice.

Mid-Valley
STEM-CTE HUB

Activity Guide

Beginner

Play & Learn Basic Addition
Students play standard Shut the Box rounds while focusing on quickly adding dice totals and finding matching number combinations. Teachers encourage verbalizing math strategies (e.g., "I rolled a 7, so I can close 3 and 4, or 7") to build confidence in addition and mental math.

Intermediate

Probability Discussion & Strategy
Before and during play, students discuss which sums are most likely to appear when rolling two dice. They practice using this knowledge to make more strategic choices (e.g., leaving low-number tiles for later rolls). After rounds, students reflect on what worked and why.

Advanced

Analyze & Optimize
Students play several rounds, record which number combinations they used most often, and analyze their results. They use this data to refine their strategies and test whether certain approaches consistently improve their scores.

Extension Activities:

Custom Game Variations
Students design their own Shut the Box variations by adjusting rules (e.g., using only one die, closing numbers in pairs, adding a bonus round). They test and play each other's versions, promoting critical thinking and innovation.

Mid-Valley
STEM-CTE HUB

Learning Extensions

STEAM Connections: Math

Learning Objectives:

- Develop fluency with addition and number combinations through engaging gameplay.
- Strengthen mental math and quick-reasoning skills.
- Apply basic probability concepts to inform strategic decisions.
- Collect and analyze gameplay data to identify patterns and refine strategies.
- Foster creativity by exploring game variations and custom rule design.

Career Connections:

- **Mathematician –** Analyzes number patterns and applies probability theory to solve problems.
- **Game Designer –** Creates engaging, balanced games based on mathematical and strategic thinking.
- **Financial Analyst –** Uses statistical reasoning and risk assessment to inform decision-making.
- **Operations Research Analyst –** Optimizes processes and strategies using probability and mathematical modeling.
- **Educator –** Teaches mathematical fluency and critical thinking through game-based learning.

Essential Employability Skills:

- Numeracy
- Critical Thinking
- Problem-Solving
- Communication
- Creativity

Mid-Valley
STEM-CTE HUB

Resources and Accessibility

Safety Guidelines

- **Supervise Younger Students -** The game contains small dice, which can pose a choking hazard for younger children—ensure appropriate supervision and age-appropriate use.
- **Handle Game Boards Gently -** Encourage students to flip tiles softly to prevent wear and prolong the life of the boards.
- **Designate Dice Rolling Areas -** Use the built-in dice tray to prevent dice from rolling off tables and creating tripping hazards.
- **Clean Game Surfaces Regularly -** Wipe down boards and dice between uses, especially when used by multiple groups or in public/shared learning spaces.

Accessibility

- **Provide Large Dice or Dice Apps -** For students with visual or fine motor challenges, use larger dice or a digital dice roller.
- **Allow Verbal Play -** Let students verbalize which tiles to flip rather than physically manipulating them if needed—teammates can assist.
- **Incorporate Peer Support -** Pair students strategically so that those needing assistance have a supportive partner during gameplay.
- **Encourage Flexible Roles -** Allow students to take on different roles (roller, flipper, scorer, announcer) based on their individual strengths and comfort levels.

Library Catalog

Library Resources

Feedback

QR to feedback survey