Math Games

Mid-Valley
STEM-CTE HUB

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Math Games

The Math Games kit enables hands-on math learning through play and teamwork. Students will have the opportunity to interact with a variety of games that are focused on numbers, basic math, and geometry. The kit fosters math confidence, communication, and critical thinking.

Grade Level

3rd - 12th grades

Group Size

Up to 20 students

Time Duration

15 - 120 minutes

Content of Kits

Components

- 4x Shut the Box
- Bulk dice
- Yahtzee score sheets
- Buildzi and Buildzi challenge cards
- 2x Playing card decks
- Magic Magnetic cube and challenge cards
- Qwixx Mixx and score cards
- Solve the Brain Teaser cards
- Bulk Dominos
- 3x 28 double Six Tiles domino sets

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Usage

Getting Started

1. **Organize space:** Provide ample space for the games to be properly utilized. Ensure students have sufficient space to play and explore**.**
2. **Set up stations:** Arrange the games in a variety of stations to promote social exchange and opportunities to explore a variety of math games.
3. **Understand how the games work:** Review the rules and guidelines for each game so you can help students get started with unfamiliar activities.
4. **Encourage exploration:** Encourage students to try new games and stations at set intervals throughout class time.

Storage

Keep the games and their components stored securely in the kit's bin when not in use, preferably in a dry and organized space. Ensure all lids and boxes are secure to prevent losing or damaging critical game pieces.

Troubleshooting

Refer to the individual game instructions for troubleshooting guidance.

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Activity Guide

Beginner

Number Recognition & Basic Operations

- Use **Shut the Box** to practice addition and number recognition by rolling dice and flipping down the corresponding numbered tiles.
- Play a simple **domino matching game**, where students match tiles based on the number of dots to reinforce counting and visual number comparison.
- Use **playing cards** for a "Greater or Lesser" game, where students draw two cards and compare values to build number sense.

Intermediate

Probability & Strategy

- Play **Yahtzee** to explore probability, discussing which dice rolls are most likely and when to take risks for higher scores.
- Use **Buildzi** to challenge students to create stable structures while considering balance, sequencing, and spatial reasoning.
- Introduce **Magic Magnetic Cube** puzzles that require students to identify patterns and use logical reasoning to solve challenges.

Advanced

Multi-Step Problem Solving & Logical Reasoning

- Play **21 (Blackjack) with playing cards**, where students calculate probabilities of drawing specific cards and make strategic choices to maximize their chances of winning.
- Use **dominoes** for a multiplication and fractions game—students can line up tiles to create fraction equations or practice multiplication sequences.
- Challenge students with a **Magic Magnetic Cube** puzzle that requires recognizing patterns and developing a step-by-step solution plan.

Extension Activities:

Math Game Tournament

- Organize a classroom **Math Games Tournament**, where students compete in different games from the kit, earning points for accuracy, speed, and strategy.
- Rotate stations between **Yahtzee, Shut the Box, and domino math challenge**s, allowing students to apply different mathematical skills.
- Encourage students to create their own game variations or house rules, incorporating new math challenges or strategic twists.

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Learning Extensions

STEAM Connections: Math

Learning Objectives:

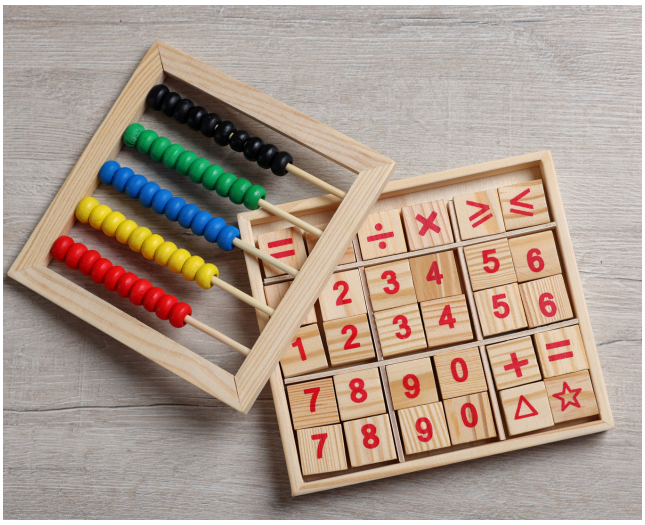
- Explore math concepts in a relaxed and engaging environment.
- Build math confidence through play and student teamwork
- Practice problem-solving and basic math techniques

Career Connections:

- **Data Analysis & Statistics –** Enhances skills in probability, statistical reasoning, and pattern recognition, essential for careers in data science, finance, and market research.
- **Education & Instruction –** Builds foundational math teaching skills, relevant to careers in early childhood education, tutoring, and curriculum development.
- **Game Design & Development –** Encourages logical thinking, strategy creation, and rule design, preparing students for careers in game development and interactive media.
- **Cognitive Psychology & Behavioral Science –** Develops problem-solving and decision-making skills, applicable to careers in psychology, behavioral research, and human factors engineering.

Essential Employability Skills:

- Critical thinking
- Communication
- Team work



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Resources and Accessibility

Safety Guidelines

- To avoid choking hazards, ensure students don't put small pieces in their mouths.

Accessibility

- **Visual Accessibility** – Use large-print or braille cards, high-contrast dice and dominoes, and magnifying tools for better visibility.
- **Motor Skill Support** – Provide cardholders, adaptive grips, alternative dice-rolling methods, and encourage teamwork to assist with handling pieces.
- **Cognitive and Processing Support** – Offer step-by-step visual instructions, color-coded components, and extra processing time with clear, simple game rules.
- **Sensory-Friendly Adaptations** – Create a quiet game area, use fidget-friendly materials, and provide digital game alternatives for students with sensory sensitivities.
- **Inclusive Participation** – Modify game rules, encourage cooperative play, and offer multiple ways to engage, such as verbalizing moves or using a whiteboard.

Library Catalog

Library Resources

Feedback

QR to feedback survey