Dominoes

Mid-Valley
STEM-CTE HUB

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Dominoes

The Dominoes kit enables hands-on STEM learning through design and engineering challenges. Students create intricate domino setups to explore concepts in physics, engineering, and problem-solving. The kit supports projects that foster creativity, critical thinking, and spatial reasoning.

Grade Level

K - 8th grades

Group Size

Up to 10 students per kit

Time Duration

15 - 90 minutes

Content of Kits

Components

- Assorted Wooden Dominoes
- Assorted Wooden Accessories
- Plastic Stairs and Intersections
- Domino Line-Up Tool

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Usage

Getting Started

1. **Introduce the Dominoes**: Show the children the different colors and numbers on each domino.

2. **Basic Activities:** Students create intricate domino setups to explore concepts in physics, engineering, and problem-solving.

3. **Advanced Learning Activities:** Progress to more structured learning activities like sorting by color, counting, and creating patterns.

4. **Engage in Mathematical Exercises:** Use the dominoes to practice addition, subtraction, and understanding fractions.

Storage

Keep the dominoes in their storage box to avoid loss and ensure they are easy to access and organize. If dominoes become dirty or sticky, clean them with a damp cloth and let them dry completely before storing.

Troubleshooting

If dominoes are not standing up, ensure the domino is not damaged. If damaged, remove it from the activity and report the issue to the Mid-Valley STEM-CTE Hub.

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Activity Guide

Beginner

Color Sorting and Counting
Students will start by sorting dominoes based on color and counting the number of dots on each piece. This activity helps build early math skills, pattern recognition, and fine motor coordination. Once sorted, students can practice counting aloud or grouping dominoes by numerical value, reinforcing number recognition and sequencing.

Intermediate

Pattern Building and Basic Math
Students will arrange dominoes into repeating patterns, learning sequencing and symmetry. They will also use dominoes to practice basic math operations like addition and subtraction by counting and combining dot values. Through hands-on engagement, they will develop number sense and problem-solving skills, deepening their understanding of mathematical relationships.

Advanced

Fraction Games and Critical Thinking Challenges
Students will use dominoes to explore fractions, comparing dot values to represent parts of a whole. They will also engage in strategic games where they must analyze patterns, anticipate moves, and think critically to achieve objectives. These challenges strengthen logical reasoning, mathematical fluency, and strategic thinking, essential for higher-level problem-solving.

Extension Activities:

Domino Rallies
Students will design and construct elaborate domino rally courses, focusing on planning, precision, and cause-and-effect relationships. By experimenting with spacing, angles, and chain reactions, they will explore physics concepts like momentum and kinetic energy. This activity promotes creativity, engineering thinking, and collaboration, as students test and refine their designs.

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Learning Extensions

STEAM Connections: Engineering - Math - Physics

Learning Objectives:

- Enhance numeracy skills
- Develop fine motor skills
- Boost color recognition
- Foster critical thinking through structured and creative play

Career Connections:

- **Early Education –** Develops foundational skills in numeracy, pattern recognition, and problem-solving, essential for careers in teaching and childhood development.
- **Cognitive Psychology –** Reinforces understanding of how people process patterns, numbers, and logic, relevant to careers in cognitive science and behavioral research.
- **Recreational Therapy –** Encourages the use of hands-on learning tools to support motor skills, memory, and cognitive development, applicable to careers in therapy and rehabilitation programs.

Essential Employability Skills:

- Logical reasoning
- Problem-solving
- Hand-eye coordination
- Color differentiation

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Resources and Accessibility

Safety Guidelines

- Monitor children to ensure dominoes are used safely and appropriately.
- Ensure all play activities are conducted on stable surfaces to prevent accidents.
- Do not allow students to put dominoes in their mouths.

Accessibility

- Provide modified or larger dominoes for children who require tactile enhancements.
- Ensure that learning activities are inclusive and adaptable to various learning and physical abilities.

Library Catalog

Library Resources

Feedback

QR to feedback survey