Math Minds in Motion

Mid-Valley
STEM-CTE HUB

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Math Minds in Motion

The Math Minds in Motion STEAM Kit uses hands-on materials to engage students in developing foundational math skills. By exploring sorting, sequencing, pattern recognition, and fraction concepts. This kit encourages active learning and problem-solving. Students work with sorting trays, bead sets, pattern blocks, and fraction cubes to enhance their understanding of math concepts through visual and tactile experiences. This kit is designed to be flexible for use in various classroom settings from early elementary through middle school.

Grade Level

PreK - 2nd

Group Size

2 - 4 students per group

Time Duration

15 - 30 minutes

Content of Kits

Components

- 1 Hands-On Math Sorting Trays
- 2 Bins of Sorting Items
- 1 Bead Sequencing Set
- 1 Pattern Blocks
- 2 Fraction Cubes

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Usage

Getting Started

1. **Introduce Each Tool -** Show students the hands-on math sorting trays, bead sequencing sets, pattern blocks, and fraction cubes. Explain the different functions of each item and how they will help with math concepts like sequencing, patterns, and fractions.
2. **Allow for Exploration -** Let students freely interact with the materials for a few minutes. Encourage them to notice how the shapes and numbers fit together and what patterns they can create.
3. **Demonstrate Sorting Techniques -** Start by demonstrating how to sort the items by color, size, or shape. Ask students to sort the materials and discuss their choices, helping them understand categorization.
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Storage

- Use the provided storage container for the entire kit and ensure everything is kept dry and away from moisture.
- Return all items to storage container in an organized manner.

Troubleshooting

- N/A

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Activity Guide

Beginner

Sorting Fun!
Students will use sorting trays to group items (beads, blocks, etc.) by shape, size, or color. Discuss the criteria they used to sort the items and encourage them to create their own sorting rules.

Intermediate

Sequence It!
Students will create a sequence using the beads (e.g., red, blue, red, blue). Then, ask them to continue the sequence and explain why they chose that order. Challenge them to create their own sequences and patterns.

Advanced

Fraction Fun!
Students will use fraction cubes to represent different fractions (1/2, 1/4, etc.) and then combine them to form wholes. Ask them to explain how different fraction cubes can be combined or divided to create new fractions. Challenge them to find equivalent fractions using the cubes.

Extension Activities:

Create Your Own Fraction Blocks
Students will design their own fraction problems and use the cubes to visually demonstrate how they solved them. They can also create their own "fraction blocks" by dividing a whole into different parts and labeling the fractions.

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Learning Extensions

STEAM Connections: Math

Learning Objectives:

- Develop foundational skills in sorting and categorization.
- Strengthen understanding of patterns and sequences.
- Introduce basic fraction concepts using visual and hands-on tools.
- Foster critical thinking by identifying and creating patterns and sequences.
- Enhance problem-solving and logical reasoning skills.

Career Connections:

- **Mathematician -** Uses patterns, sequences, and fraction analysis to solve problems.
- **Engineer -** Applies understanding of patterns and sequences in design and construction.
- **Teacher -** Teaches mathematical concepts using hands-on tools to make learning engaging.
- **Data Analyst -** Uses categorization and sorting skills to organize and analyze data.

Essential Employability Skills:

- Critical Thinking
- Problem-Solving
- Collaboration
- Communication
- Creativity

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Resources and Accessibility

Safety Guidelines

- Ensure beads are not a choking hazard for younger learners; supervise as needed.
- Keep all materials stored properly to avoid mixing sets or losing small pieces.

Accessibility

- Provide tactile materials and allow students with visual impairments to explore by touch.
- Offer extended time for students with motor challenges to manipulate small items like beads and fraction cubes.
- Provide visual and verbal prompts to guide them through activities.

Library Catalog

Library Resources

Feedback

QR to feedback survey