Sumblox

Mid-Valley
STEM-CTE HUB

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Sumblox

The Sumblox kit enables hands-on STEM learning through interactive, math-based block activities. Students use stackable blocks to visualize and solve math problems, developing skills in addition, subtraction, multiplication, and division. The kit supports projects that foster critical thinking, problem-solving, and spatial reasoning.

Grade Level

PreK - 5th grades

Group Size

1 - 2 students per set

Time Duration

30 minutes - 1 hour

Content of Kits

Components

- Three Sumblox sets
- Sumblox Activity guide

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Usage

Getting Started

1. **Introduce the Blocks**: Explain to students how the height of each block corresponds to its numerical value.

2. **Simple Math Operations:** Start with basic addition or subtraction by stacking blocks to match heights.

3. **Advanced Mathematical Concepts:** Progress to more complex operations like multiplication and division as students become more comfortable.

4. **Interactive Learning:** Encourage students to explore different combinations and discover relationships between numbers.

Storage

Store the blocks in a dry, secure place to avoid damage. Keep wooden blocks away from moisture to maintain their durability.

Troubleshooting

- Ensure all blocks are accounted for after each session to prevent loss.

- Regularly check blocks for wear and tear to ensure they are safe for use.

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Activity Guide

Beginner

Counting and Simple Addition
Students will use blocks to represent numbers and practice counting by stacking them to match given values. They will then engage in simple addition by combining different stacks and counting the total.
This hands-on activity reinforces number recognition and basic math operations while providing a tactile learning experience.

Intermediate

Exploring Fractions
Students will use blocks of varying sizes to visually compare and combine fractions. By stacking smaller blocks to match the height of a larger one, they can explore fraction equivalencies and addition. This activity helps them understand fractional relationships in a concrete way, enhancing their comprehension of division and proportional reasoning.

Advanced

Visualizing Multiplication
Students will create arrays and stacks of blocks to model multiplication problems. By organizing blocks into rows and columns, they can see how repeated addition forms multiplication tables. This activity strengthens their ability to recognize patterns and solve multiplication equations using spatial reasoning.

Extension Activities:

Math Construction Challenge
Students will work in teams to solve multi-step math challenges using blocks. They may be tasked with building specific structures based on mathematical equations or using the blocks to model real-world problems. This collaborative activity promotes problem-solving, critical thinking, and mathematical communication.

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Learning Extensions

STEAM Connections: Math

Learning Objectives:

- Build a foundational understanding of basic math operations.
- Strengthen visual and spatial reasoning skills.
- Improve fine motor skills.

Career Connections:

- **Mathematics Education –** Reinforces number sense and arithmetic skills, foundational for careers in teaching, tutoring, and curriculum development.
- **Engineering –** Develops spatial reasoning and structural understanding, applicable to fields like civil, mechanical, and structural engineering.
- **Architecture –** Encourages design thinking and proportional reasoning, essential for careers in architectural design and urban planning.
- **Data Analysis –** Enhances pattern recognition and quantitative reasoning, skills valuable in data science, finance, and research.

Essential Employability Skills:

- Critical thinking
- Creative problem-solving
- Computational thinking
- Teamwork

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Resources and Accessibility

Safety Guidelines

- Supervise younger children to ensure safe use of blocks and prevent choking hazards.
- Maintain a clean and organized play area to prevent accidents.

Accessibility

- Offer alternative activities for students who may have difficulty handling smaller blocks.
- Adapt the learning environment to ensure that all students can reach and handle the blocks comfortably.

Library Catalog

Library Resources

Feedback

QR to feedback survey