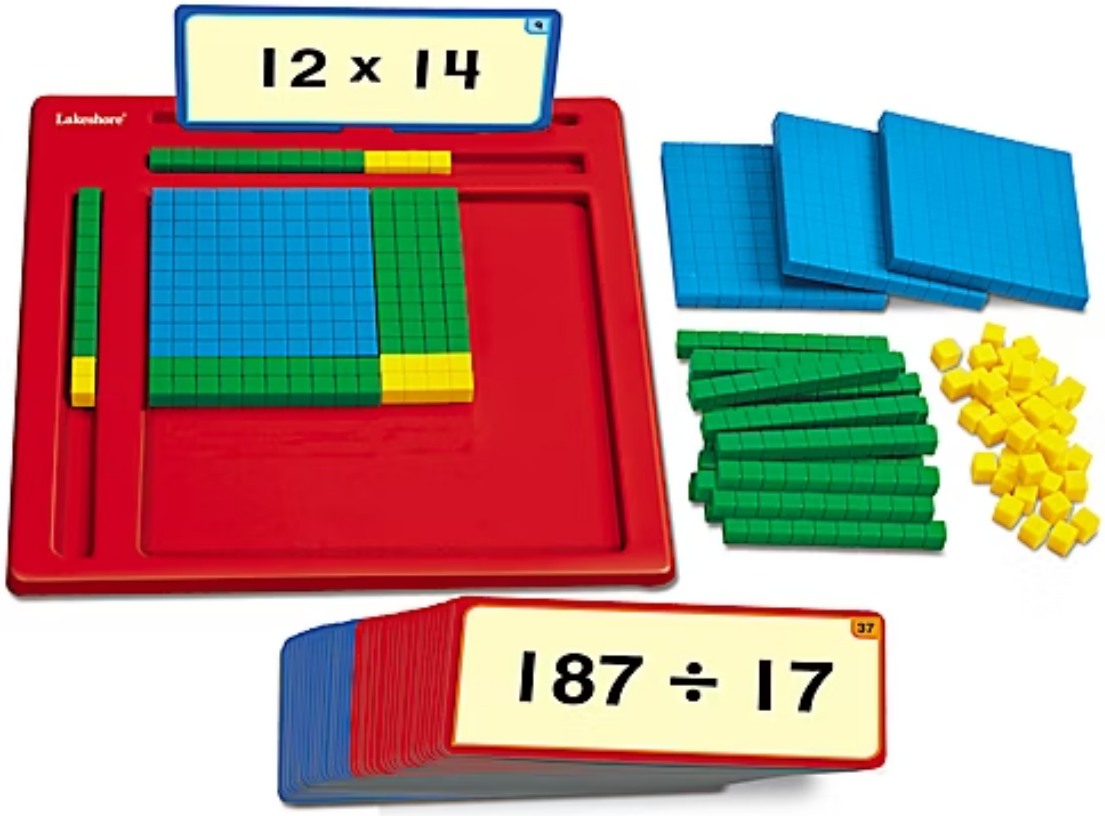
Multiplication & Division Support



Mid-Valley
STEM-CTE HUB

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Multiplication & Division Support

The Multiplication & Division Hands-On Support Kit provides tactile, visual learning tools to help students master multiplication and division through exploration and modeling. With array cards, counters, number tiles, and engaging activity cards, students can build a strong conceptual understanding of math operations. By physically representing problems and exploring patterns, students strengthen fact fluency, problem-solving skills, and math confidence in an interactive, collaborative setting.

Grade Level

2nd - 6th

Group Size

1 - 2 students per set

Time Duration

15 - 45 minutes-

Content of Kits

Components

- 15 multiplication / division kits
  - 15 activity boards
  - 15 challenge card sets
  - 15 sets of unit cubes

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Usage

Getting Started

1. **Introduce Kit Components -** Show students the array cards, number tiles, counters, and activity cards. Explain how each item helps visualize multiplication or division.

2. **Model a Basic Multiplication Problem -** Demonstrate how to use array cards and counters to model problems such as 4 x 3 or 6 ÷ 2.

3. **Encourage Hands-On Exploration -** Let students explore making their own multiplication or division models freely to build comfort with the materials.

4. **Use Activity Cards to Guide Practice -** Have students follow the activity card prompts and model each problem before writing solutions.

5. **Foster Discussion & Reflection -** Ask students to explain their models and discuss how visualizing problems helps deepen their understanding.

Storage

- Maintain an inventory sheet to ensure all components are returned to the provided storage bin after use.

Troubleshooting

- **Students Confused by Arrays -** Model the process step-by-step, using both rows and columns, and check for understanding.
- **Difficulty Moving from Concrete to Abstract -** Pair hands-on modeling with written equations to help students bridge concepts.
- **Overwhelmed by Complex Problems -** Allow students to start with small numbers and build confidence before progressing to larger numbers.

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Activity Guide

Beginner

Build Basic Arrays
Students use array cards and counters to build visual models of multiplication facts (e.g., 2 x 5 = 10), count totals, and record equations.

Intermediate

Model Division with Counters
Students use counters and array cards to divide quantities into equal groups. For example, model 12 ÷ 3 by forming 3 equal groups of 4.

Advanced

Fact Families & Relationships
Students use counters to model fact families (e.g., 6 x 4 = 24, 4 x 6 = 24, 24 ÷ 6 = 4, 24 ÷ 4 = 6). They create visual models for each equation.

Extension Activities:

Real-World Problem Solving
Students write their own real-world word problems (e.g., grouping objects, dividing supplies), then model and solve them using the kit materials.

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Learning Extensions

STEAM Connections: Math

Learning Objectives:

- Model multiplication as equal groups and arrays.
- Model division as partitioning or repeated subtraction.
- Understand and apply fact families.
- Strengthen math fluency and conceptual understanding of operations.
- Apply multiplication and division to real-life problem solving.

Career Connections:

- **Retail Manager -** Uses multiplication and division for inventory and sales analysis.
- **Chef -** Calculates recipe quantities and divides portions.
- **Engineer -** Applies multiplication and division in scaling designs and measurements.
- **Construction Worker -** Calculates materials needed and distributes materials evenly.
- **Financial Analyst -** Uses operations to analyze data trends and forecast outcomes.

Essential Employability Skills:

- Numeracy
- Critical Thinking
- Attention to Detail
- Problem-Solving
- Communication

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Resources and Accessibility

Safety Guidelines

- Supervise young children to ensure counters and small pieces are used appropriately.
- Keep pieces off the floor to prevent slipping hazards.
- Wipe counters and tiles regularly to maintain hygiene.
- Store all pieces properly after use to prevent loss or damage.

Accessibility

- Provide verbal activity card prompts or read them aloud as needed.
- Allow students with fine motor challenges to pair with a peer for manipulating counters.
- Offer extended time and flexible pacing for all activities.

Library Catalog

Library Resources

Feedback

QR to feedback survey