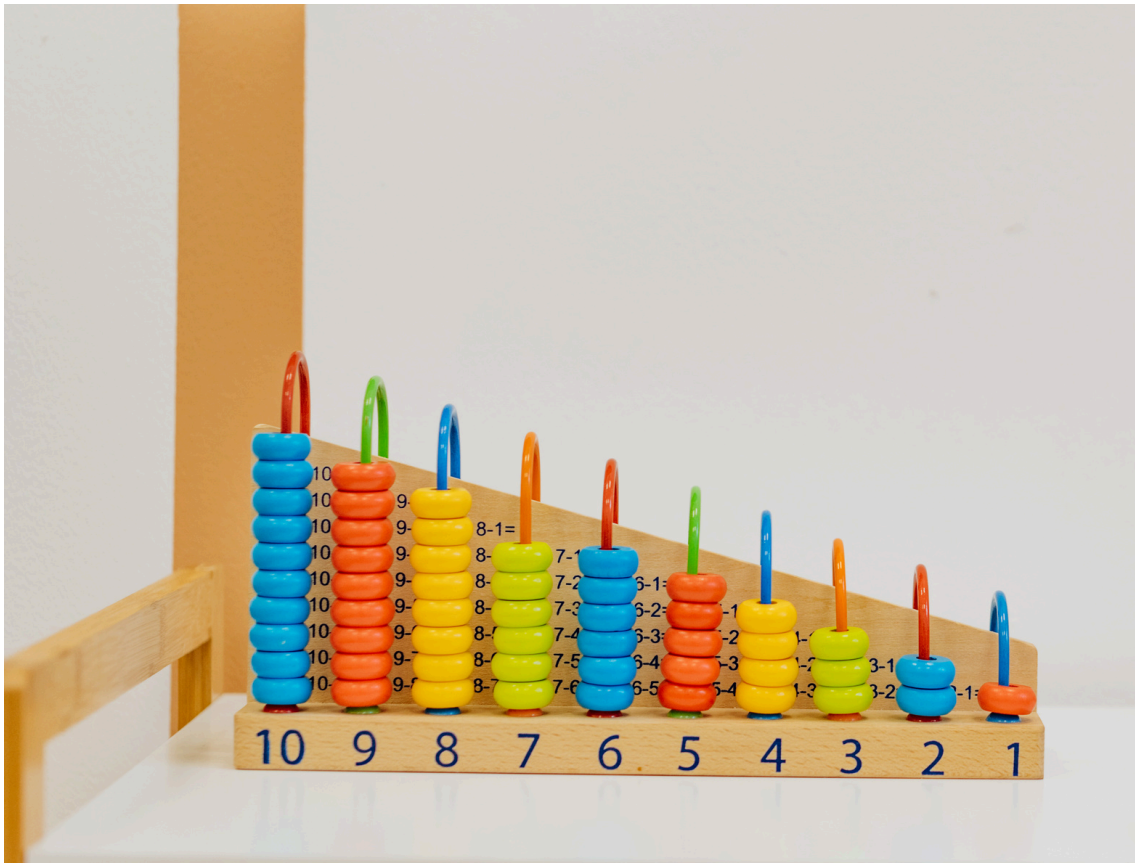
Number Builders and Bonding Math Kit



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Number Builders and Bonding Math Kit

The Number Builders and Bonding STEAM Kit gives students a playful, hands-on way to strengthen number sense, place value understanding, integer concepts, and sorting/classification skills. Featuring the House of Number Buddies Math Games, Hands-On Math Sorting Trays with manipulatives, and integer chips, this kit supports a wide range of math exploration. Students engage in collaborative math games and visual, and tactile activities that build fluency, critical thinking, and flexible number strategies.

Grade Level

K - 3rd

Group Size

2–3 students per activity

Time Duration

15 - 30 minutes per activity

Content of Kits

Components

- 2 × House of Number Buddies Math game
- 4 × Hands-on math sorting trays
- 2x bins of sorting items
- 1x Package of assorted integer chips

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Usage

Getting Started

1. **Introduce the Kit Components -** Show the House of Number Buddies Game, Sorting Trays & bins, and integer chips, explaining how each tool supports different number skills.

2. **Model a Round of Number Buddies -** Demonstrate basic gameplay and point out connections to place value and number combinations.

3. **Explore Sorting Trays -** Let students explore sorting items freely, then introduce challenges (ex: sort by number, value, or pattern).

4. **Introduce Integer Chips -** Model integer chips with a number line or "zero pairs" to show addition and subtraction of positive/negative numbers.

5. **Station Setup -** Use the kit for small-group rotations or focused number-sense intervention groups.

Storage

- Store Number Buddies Games in original boxes
- Keep manipulatives in provided containers.

Troubleshooting

- **Students Confused by Negative Numbers -** Use a physical number line and integer chips to model the concept visually.
- **Uneven Participation -** Assign roles (builder, sorter, checker, recorder) within groups to ensure all students contribute.

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Activity Guide

Beginner

Build It & Bond It
Students play House of Number Buddies with a focus on combining numbers to form larger values (ex: 10s, 100s). Use sorting trays to physically sort numbers and objects that represent different place values.

Intermediate

Integer Operations with Chips
Students use integer chips to model addition and subtraction of positive/negative numbers. They record number sentences and visually show solutions on a number line. Challenge: Solve word problems involving gains and losses, using chips to model the story.

Advanced

Sorting Patterns & Algebraic Thinking
Students use sorting trays and bins to classify number patterns or properties (ex: multiples of 3, odd/even, prime/composite, perfect squares). They create and describe sorting rules to peers and challenge classmates to guess their rules.

Extension Activities:

Real-World Number Challenge
Students design a real-world math game or simulation (ex: board game, store inventory, money management scenario) using kit components. They present their game and explain how number bonds, integer operations, and sorting concepts apply in the context.

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Learning Extensions

STEAM Connections: Math

Learning Objectives:

- Develop number sense, place value understanding, and number bonding strategies.
- Understand integer operations and their representations.
- Build fluency with positive/negative number patterns and problem-solving.
- Apply sorting and classification to explore mathematical patterns.
- Strengthen mathematical communication and reasoning.

Career Connections:

- **Accountant -** Uses integer operations and place value in financial calculations.
- **Data Analyst -** Sorts, classifies, and interprets numerical data patterns.
- **Inventory Manager -** Tracks quantities, gains/losses, and categorization of items.
- **Software Developer -** Uses logical thinking and number operations in coding.
- **Game Designer -** Applies number patterns and strategies in-game mechanics.

Essential Employability Skills:

- Numeracy
- Critical Thinking
- Problem-Solving
- Collaboration
- Communication

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Resources and Accessibility

Safety Guidelines

- Clean manipulatives regularly to maintain hygiene.
- Supervise the use of small items to avoid choking hazards for young children.

Accessibility

- Offer tactile number lines or raised sorting labels for students with visual impairments.
- Use verbal sorting challenges and allow for collaborative grouping for students with motor challenges.
- Give flexible pacing and alternate recording options (oral, visual, or written).

Library Catalog

Library Resources

Feedback

QR to feedback survey