Fraction Tower Cubes

Mid-Valley
STEM-CTE HUB

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Fraction Tower Cubes

The Fraction Tower Cubes Classroom Kit provides a student-friendly Fraction Tower Cube sets for collaborative, hands-on learning. These brightly colored, interlocking cubes represent fractions from 1 whole to 1/12. Students build towers to visualize equivalence, compare fractions, explore addition and subtraction, and understand decimal and percent relationships. The kit fosters a concrete understanding of abstract concepts through tactile learning, making it ideal for both whole-class and small-group instruction.

Grade Level

2nd - 6th

Group Size

1 - 2 students per set

Time Duration

15 - 30 minutes

Content of Kits

Components

- 18 sets of Fraction Tower Cubes

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Usage

Getting Started

1. **Introduce the Cubes & Concept of 1 Whole -** Show that stacking all 12 cubes equals 1 whole. Let students explore how smaller fractions fit within the whole tower.
2. **Practice Free Play -** Give students time to build and break towers freely to explore fraction relationships and become comfortable handling the cubes.
3. **Model Equivalence -** Demonstrate with a visual example (e.g., 3/6 = 1/2) and have students replicate using their own cubes.
4. **Introduce Addition/Subtraction Tasks -** Guide students to model and record simple fraction operations using the cubes.
5. **Reflect Through Discussion -** Have students explain in pairs or groups why two towers are equivalent, and how their results connect to real-world math.

Storage

- **Store Each Set in Zip Bags -** Keep each of the 15 Fraction Tower Cube sets in a separate labeled zip-top bag.
- **Central Bin Storage -** Store all sets in a large, clearly labeled tub for easy classroom access.
- **Regularly Check for Damage -** Inspect cubes periodically for wear or breakage and replace them as needed.

Troubleshooting

- **Missing Pieces -** Assign “clean up captains” to check under tables and count cubes at the end of each session.

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Activity Guide

Beginner

Build and Compare
Students build towers for basic fractions such as 1/2, 1/4, 1/3, 1/6, and 1/12, comparing their heights and recording observations about size relationships.

Intermediate

Fraction Equivalency Towers
Students stack cubes to build towers that represent equivalent fractions (e.g., 2/4 = 1/2, 4/6 = 2/3). They record multiple combinations for common equivalencies.

Advanced

Fraction Operations
Students model addition and subtraction of fractions (with like or unlike denominators) using cubes. They physically build towers to represent problems and compare results.

Extension Activities:

Decimals & Percents
Students build a fraction tower (e.g., 3/4), then convert that value into a decimal and percent. They check answers against a conversion chart and explain their reasoning.

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Learning Extensions

STEAM Connections: Math

Learning Objectives:

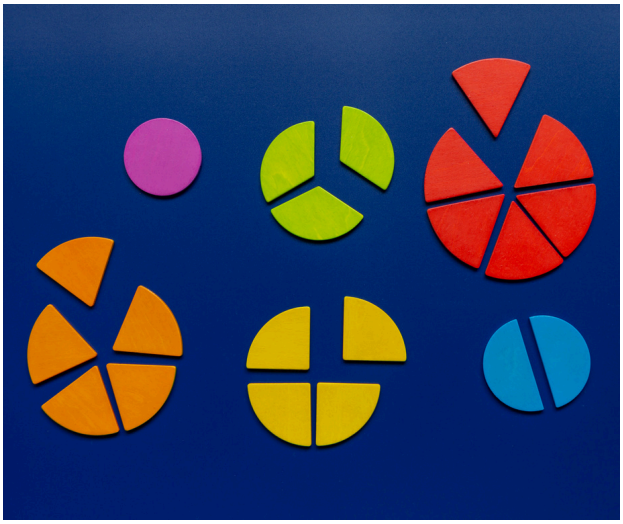
- Identify and compare fractions using visual models.
- Understand and create equivalent fractions.
- Perform addition and subtraction with fractions.
- Explore relationships between fractions, decimals, and percents.
- Apply fraction understanding to real-world problem solving.

Career Connections:

- **Chef/Baker -** Uses fractions in recipes and portioning.
- **Carpenter/Builder -** Uses precise fractional measurements in construction.
- **Engineer -** Applies fractions in design and material specification.
- **Financial Analyst -** Works with fractions, ratios, and percentages in data analysis.
- **Pharmacist -** Calculates precise dosages using fractional measures.

Essential Employability Skills:

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



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Resources and Accessibility

Safety Guidelines

- Supervise younger students; cubes are small and could pose a choking hazard for children under 3.
- Keep cubes off the floor to prevent slipping hazards.
- Clean cubes periodically between uses.

Accessibility

- Offer larger-print or color-coded equivalency guides for students with visual impairments.
- Allow students with fine motor challenges to collaborate with a peer when building towers.
- Use guided verbal prompts to support understanding and engagement.
- Provide flexible pacing and extended time for students who need additional processing time.

Library Catalog

Library Resources

Feedback

QR to feedback survey