Pre-Algebra Support

Mid-Valley
STEM-CTE HUB

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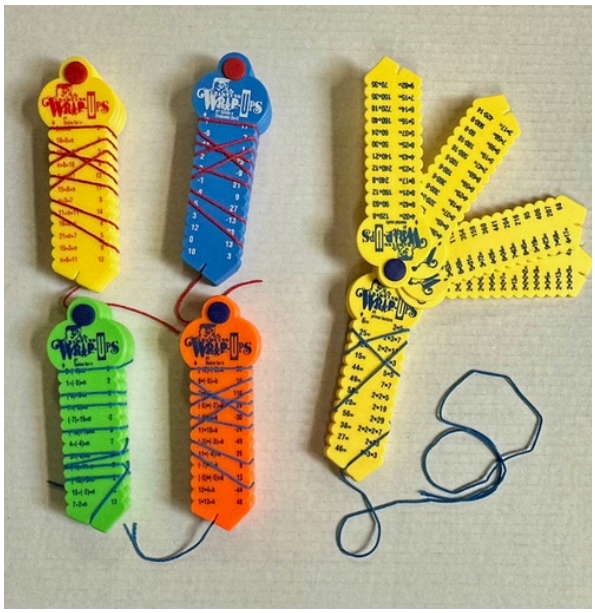
Pre-Algebra Support

The Pre-Algebra Support Kit is designed to support students in mastering foundational pre-algebra concepts such as operations with integers, fractions, decimals, equations, and number patterns. This kit contains Pre-Algebra Wrap-Ups, a hands-on tool that helps students practice math skills through a unique self-correcting system. The kit includes 3 sets of Pre-Algebra Wrap-Ups that allow students to explore and reinforce essential algebraic concepts independently.



Grade Level

4th - 7th

Group Size

1 - 2

Time Duration

10 - 30 minutes

Content of Kits

Components

- 15 pre-algebra wrap-ups

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Usage

Getting Started

1. **Unbox and Inspect Components:** Begin by carefully unboxing the Pre-Algebra Support Kit. Verify that all items are present and undamaged, including the 3 sets of Pre-Algebra Wrap-Ups.

2. **Organize the Wrap-Ups:** Each Pre-Algebra Wrap-Up set contains 10 different wrap-ups, each focusing on a specific concept such as operations with integers, solving for unknowns, or simplifying expressions. Sort the wrap-ups by topic and place them in the provided storage pouches for easy access.

3. **Introduce the Wrap-Ups:** Explain to students how to use the Pre-Algebra Wrap-Ups. Each wrap-up has a series of problems printed on one side and a corresponding answer key on the other side. Students will solve the problems by following the numbers around the wrap-up, and once completed, they can check their answers against the solution on the reverse side.

4. **Set Up for Independent Learning:** Provide students with a set of Pre-Algebra Wrap-Ups and let them begin solving problems on their own. Encourage them to work through each wrap-up at their own pace, using the self-correcting feature to identify and learn from any mistakes.

Storage

- Pre-Algebra Wrap-Ups: Store the wrap-ups in the provided storage pouches, separated by topic (e.g., integers, fractions, solving equations) for easy access.
- Storage Pouches: Store the pouches in a sturdy container to keep all components organized and easily accessible.

Troubleshooting

- **Wrap-Ups Not Lining Up -** If the problems or answers do not seem to line up correctly, check that the wrap-up is aligned properly and that the numbers match with the correct starting points. If students are having difficulty, try guiding them through the first few steps.

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Activity Guide

Beginner

Simplifying Expressions
students will begin by using the Pre-Algebra Wrap-Up for simplifying basic expressions such as 2x + 3 = 7. Students will work through the wrap-up to solve for x and learn how to isolate the variable. This activity introduces students to the concept of algebraic manipulation and equation solving.

Intermediate

Operations with Integers
Students will use the Pre-Algebra Wrap-Up that focuses on integer operations (addition, subtraction, multiplication, and division of positive and negative numbers). They will solve problems such as -5 + 7, -3 × 4, and 8 ÷ -2 to reinforce their understanding of how to handle positive and negative integers in algebraic operations.

Advanced

Solving Equations with Variables
students will use the Pre-Algebra Wrap-Up that involves solving for unknowns. They will work through problems like 3x + 5 = 20 and 2x − 4 = 10, applying the correct steps to isolate the variable x and solve the equation. This activity helps students understand the process of balancing equations and solving for unknowns in algebra.

Extension Activities:

Word Problems to Equations
Students will use the Pre-Algebra Wrap-Up to translate word problems into algebraic equations. For example, “A number increased by 7 equals 15” becomes x + 7 = 15. Students will write the equation and then solve it using the wrap-up. This activity encourages critical thinking and the ability to move between real-world situations and abstract algebraic expressions.

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Learning Extensions

STEAM Connections: Math

Learning Objectives:

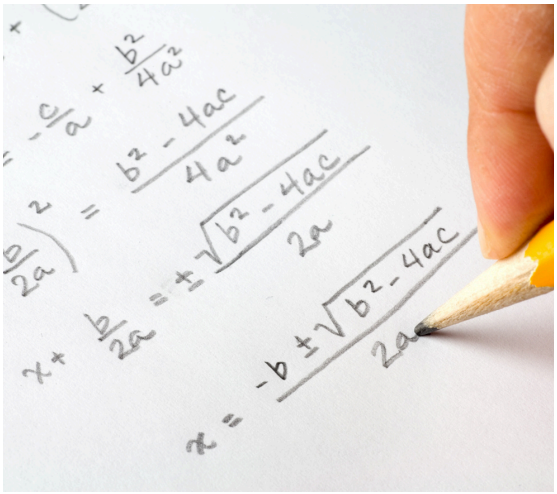
- Develop an understanding of basic algebraic operations such as solving equations and simplifying expressions.
- Learn to work with integers and understand the rules for adding, subtracting, multiplying, and dividing positive and negative numbers.
- Strengthen the ability to translate word problems into algebraic equations.
- Build self-confidence in solving algebraic problems independently through the self-correcting feature of the Pre-Algebra Wrap-Ups.

Career Connections:

- **Mathematician -** Uses algebraic concepts and equations to solve problems in various fields, including data analysis and theoretical research.
- **Engineer -** Applies algebra to design, construct, and analyze systems and structures.
- **Economist -** Uses algebra to model economic relationships and make predictions.
- **Software Developer -** Uses algebraic logic to write code and create algorithms for applications and systems.

Essential Employability Skills:

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



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Resources and Accessibility

Safety Guidelines

- Handle the Pre-Algebra Wrap-Ups gently to prevent damage to the pieces.
- Store small components, like the wrap-ups, in their designated pouches or containers to avoid loss or damage.

Accessibility

- Use tactile markers on the wrap-ups to indicate the different sections of the equation.
- Allow extended time for students with motor challenges to handle and manipulate the wrap-ups.
- Provide additional time, simplified instructions, and step-by-step guidance for students who may need extra support.

Library Catalog

Library Resources

Feedback

QR to feedback survey