HMH Into Math®

Almost There:

Small-Group Activities

Grades
6–ALGEBRA 1

Apply Properties and Strategies to Operate with Rational Numbers
Expressions
Properties
3.7 × 2.5 × 4
Commutative Property of Addition
4(1.5 + 0.4)
Associative Property of Multiplication
Distributive Property of Multiplication

HMH Into Math®

Into Math® supports students as they develop their conceptual understanding and grow into procedurally fluent mathematicians.

What's Inside

What are the Almost There: Small-Group Activities?

Ready-made mini-lessons for differentiation

The Almost There: Small-Group Activities

- Pulled teacher-led, small-group instruction
- Small-group lessons are available for every lesson within the program
- Perfect for both mixed- and like-ability grouping for differentiation
- Encourages math discourse and perseverance in problem solving

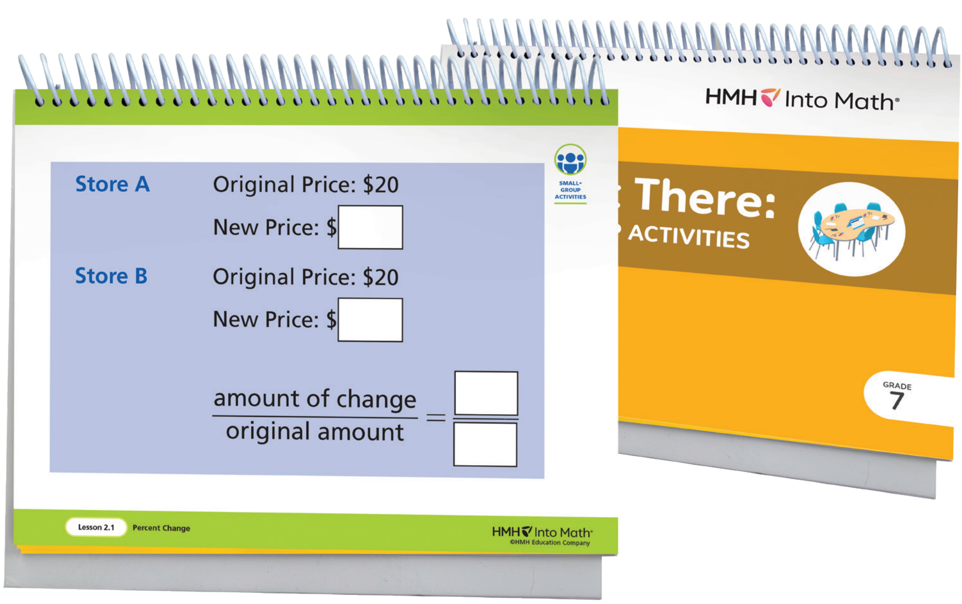
How to use the Almost There: Small-Group Activities with students

Teachers can easily lead pulled, small-group instruction with the TEACHER side, which includes:

- A complete mini-lesson connected to daily class lessons
- Guiding questions to help facilitate math discourse and problem solving

Students engage during this pulled, small-group learning opportunity with:

- Models and hints available to support problem solving
- PDF downloads for each student to write on, if desired
- Manipulatives to support problem solving



Grade 6

Teacher's Guide

Almost There: Explore Nets and Surface Area

SMALL-GROUP ACTIVITIES

Materials

Nets and Surface Area (Lesson Support Printables)

Give the following sequence of instruction:

- Tell students to study the figures and then match each figure with the net that can be folded to make that figure. Top net: triangular prism; Bottom net: square pyramid
- **Ask:** How are the nets for the triangular prism and square pyramid alike? How are they different? Both nets include triangular shapes and rectangular shapes but in different numbers and arrangements. The base of the square pyramid is a square.
- Tell students to find the area of each solid figure. First, have them find the area of each of the triangles and the rectangles (or the square). Then have them add to find the total surface area.

Triangular prism:

$2 \times \left(\frac{1}{2} \times 2 \times 1.7\right) = 3.4 \text{ cm}^2$

$3 \times (4 \times 2) = 24 \text{ cm}^2$

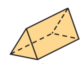
Surface area $= 27.4 \text{ cm}^2$

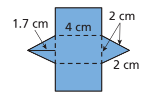
Square pyramid:

$3 \times 3 = 9 \text{ cm}^2$

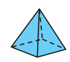
$4 \times \left(\frac{1}{2} \times 3 \times 6\right) = 36 \text{ cm}^2$

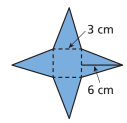
Surface area $= 45 \text{ cm}^2$


triangular prism



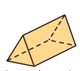
Surface area: ______

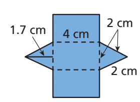

square pyramid



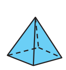
Surface area: ______

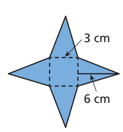
SMALL-GROUP ACTIVITIES


triangular prism



Surface area: ________


square pyramid



Surface area: ________

Lesson 3.3 Explore Nets and Surface Area

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Teacher's Guide

Almost There: Apply Two-Step Equations to Solve Real-World Problems

SMALL-GROUP ACTIVITIES

Materials

algebra tiles, Algebra Tile Tables (Lesson Support Printables)

Have students solve real-world problems with two-step equations using algebra tiles.

Students will use algebra tiles to model problems. If algebra tiles are not available, students may use index cards. Half of the index cards should have "x" written on the front of the card with "$-x$" on the back. The other half should have "1" written on the front of the card with "-1" on the back.

Present the following problem:

A kitchen rack has the same number of boxes on each of its 4 shelves. Four boxes are removed from the rack. There are 8 boxes left. How many boxes were originally on each shelf?

Give the following sequence of instruction:

- Have students write an equation for the problem and represent it using algebra tiles. **Ask:** What equation models the problem? $4x - 4 = 8$. **Ask:** How did you represent the equation with the algebra tiles? by using four x-tiles and four -1-tiles on one side of the equal sign and eight 1-tiles on the other side

x-tiles	1-tiles		x-tiles	1-tiles
		=		

- Students will solve the problem by making pairs of zeros with the algebra tiles, adding tiles to each side until there is a single variable term on one side of the equation and a single constant term on the other side.
- Have students divide both sides of the equation by the coefficient of x by placing the 1-tiles in the same number of groups as the value of the coefficient. Ask students to identify the value of x by the number of groups.

Repeat the activity with similar problems.

SMALL-GROUP ACTIVITIES

x-tiles	1-tiles		x-tiles	1-tiles
		=		

Grade 8

Teacher's Guide

Almost There: Solve Multistep Linear Equations

SMALL-GROUP ACTIVITIES

Materials

algebra tiles

Have students solve multi-step linear equations by modeling with algebra tiles.

Give the following sequence of instruction:

Give students algebra tiles. Write the equation $5x + 3 = 3x + 9$.

- Have students use algebra tiles to represent the equation. Then have them write expressions to represent each side of the equation on the top two lines on the chart. When students answer questions about how they need to manipulate the tiles, have them perform the actions and then write new expressions on the corresponding lines on the chart.
- **Ask:** How many *x*-tiles are on each side of the equation? 5 on the left and 3 on the right
- **Ask:** How many *x*-tiles can you remove from each side so that only *x*-tiles remain on the left side? 3
- **Ask:** How many 1-tiles are on each side of the equation? 3 on the left and 9 on the right
- **Ask:** How many 1-tiles can you remove from each side so that only *x*-tiles remain on the left side of the equation? 3
- Have students group the tiles on each side to show how many 1-tiles go with each *x*-tile. Then have them write the solution, 3.

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SMALL-GROUP ACTIVITIES

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Teacher's Guide

Almost There: Linear Equations in Slope-Intercept Form

SMALL-GROUP ACTIVITIES

Materials

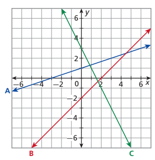
Coordinate Planes (Lesson Support Printables)

Have students identify the slope and y-intercept of each line in the graph and write the equation in slope-intercept form.

Give the following sequence of instruction:

- Have students begin by investigating Line A.
- **Ask:** How can you find the y-intercept of a line? identify the value of y where the line crosses the y-axis
- **Ask:** What is the y-intercept of Line A? 1
- **Ask:** How can you find the slope of a line? identify two points on the line and find the ratio of the change in y-coordinates to the change in x-coordinates
- **Ask:** What is the slope of Line A? $\frac{1}{3}$
- Have students write the equation of Line A in slope-intercept form. $y = \frac{1}{3}x + 1$
- Repeat the process with the remaining two lines. Line B: $y = x - 2$; Line C: $y = -2x + 3$
- **Ask:** Which line has the steepest slope? Line C has the steepest slope.
- Write the equations:

$$y = -2x + 3$$
$$y = -2x - 3$$



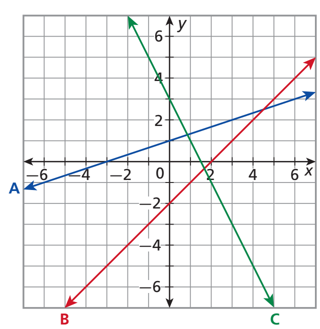
Line	Slope	y-intercept	Equation
Line A			
Line B			
Line C			

- **Ask:** How are the equations alike? Different? They have the same slope; They have different y-intercepts.
- Have students graph the two lines on the same graph.
- **Ask:** What do you notice? The lines do not touch. The two lines are parallel.
- Write the equations:

$$y = -2x + 3$$
$$y = 2x + 3$$

- **Ask:** How are the equations alike? Different? They have the same y-intercept; They have different slopes.
- Have students graph the two lines on the same graph.
- **Ask:** What do you notice? The lines intersect on the y-axis.

SMALL-GROUP ACTIVITIES



Line	Slope	y-intercept	Equation
Line A			
Line B			
Line C			

Notes

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