



MS Algebra Tiles Virtual Event

© CPM Educational Program. All rights reserved. cpm.org

Welcome

Middle School Algebra Tile Virtual Session



As you join:

- + Feel free to test your microphone, then please mute yourself.
- + In the Public Chat, share your location, school, and which course you teach in the public chat.



CPM

More Math For More People

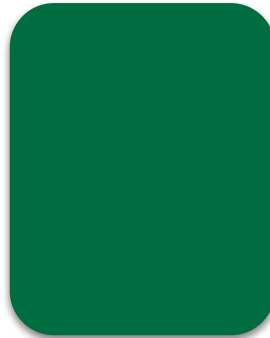


Opening

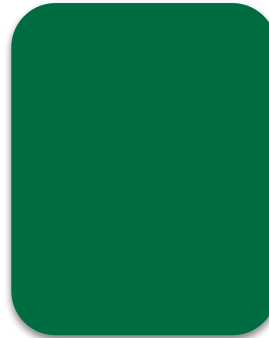
Middle School Algebra Tile Virtual Learning Event



Session Facilitators



Name



Name

Tech Tip

Viewing Options



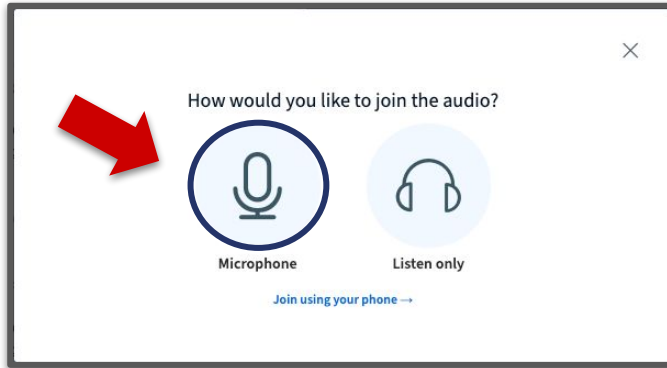
User list toggle

The screenshot shows a meeting interface with a central video feed of a man. A 'Layouts' modal is open, displaying four layout options: 'Custom', 'Smart layout', 'Focus on presentation', and 'Focus on video'. A red box highlights the 'Focus on presentation' option, with an arrow pointing to it. A 'Layout Settings Modal' label is at the bottom left. On the right, a settings menu is open, listing 'Make fullscreen', 'Settings', 'About', 'Help', 'Keyboard shortcuts', and 'Leave meeting'. A red box highlights the 'Leave meeting' option, with an arrow pointing to it. A red circle highlights a plus sign icon at the bottom left. A circular icon of a monitor is in the top right corner.

Tech Tip



Audio



Join with microphone

Troubleshooting



Use options below presentation to troubleshoot audio issues.

eBook

Enrollment steps



1st → my.cpm.org

The screenshot shows the my.cpm.org website interface. It is divided into four main sections: Learning, Professional Learning, Account Management, and Support. The 'Account Management' section is highlighted with a red arrow labeled '2nd'. Within this section, the 'Use Enrollment Pin' option is selected, indicated by a checkmark icon.

Learning	Professional Learning
eBooks	Professional Learning Portal
eWorkspace	Event Registration
Assessment	Podcast
Parent Support	CPM Teacher Wear

Account Management	Support
Try New eBook Licensing System	Knowledge Base
eBook Licensing System	Teacher Tutorials
Shop	Student Tutorials
Use Enrollment Pin	

3rd →

The screenshot shows the CPM enrollment PIN entry screen. It features the CPM logo at the top, followed by the text 'Enter Enrollment PIN'. Below this is a four-digit PIN input field with a cursor in the first position. At the bottom, there is a green 'Enroll' button and a smaller 'Cancel' link.

Steps to enroll in eBook:

1. Go to my.cpm.org.
2. Click "Use Enrollment Pin" under Account Management.
3. Enter the enrollment pin **(In public chat)**.

Opening

Outcomes



Participants will:

Become familiar with algebra tiles.

Use algebra tiles to write variables, evaluate expressions, and solve equations.

Learn how to transition from concrete (manipulatives) to abstract (symbolic notation).

Opening

Agenda



- + Opening
- + Algebra Tiles - What are they?
- + Combining Like Terms



- + Expression, Comparison and Equation Mats
- + Solving equations
- + Closure



CPM's Equity Principles

The goal of teaching is to help all students transition from dependent to independent learners.

Relationships are of vital importance.

Student uniqueness is an asset, not a deficit.

Reflection is a crucial part of growth.

Welcome

Working Agreements



Be willing to take **risks**.

Have a **visionary** mindset.

Stay **engaged**.

Explore and reflect on our **beliefs**.

Give **grace** to others and ourselves.

Change takes time, effort, and support!

Algebra Tiles - What are they?

Icebreaker



What do you notice?

What do you wonder?

Algebra Tiles - What are They?

Naming of the Tiles

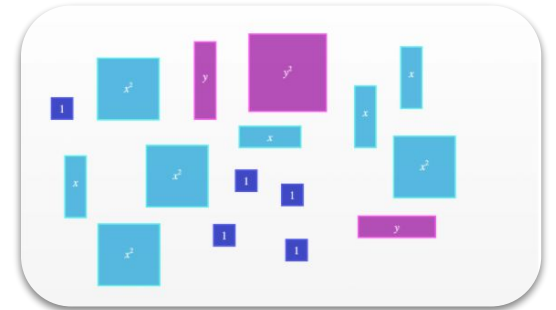


Algebraic Expressions

Explore: Combining Like Terms



1. Please open Lesson 4.3.1 in **Core Connections 2**.
 - a. Click on eBook tab
 - b. Click on CC2
 - c. Click on Chapter 4
 - d. Click on Lesson 4.3.1





Expression Mats

Building with Opposite Space

One expression mat, two regions


Value -3 can be shown
many different ways

Expression Mat

+



The tile's value is what you see



—



The tile's value is the
OPPOSITE of what you see

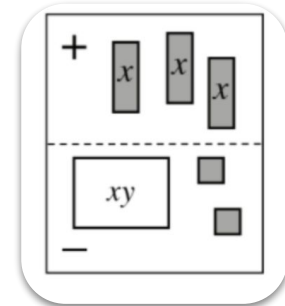
Detailed description: The diagram shows an "Expression Mat" divided into two regions by a horizontal dashed line. The top region is labeled with a "+" sign and contains two red tiles. Below them is the text "The tile's value is what you see". The bottom region is labeled with a "-" sign and contains one black tile. Below it is the text "The tile's value is the OPPOSITE of what you see". In the middle of the mat, between the two regions, there is one black tile and two red tiles.

Expression Mats

Practice

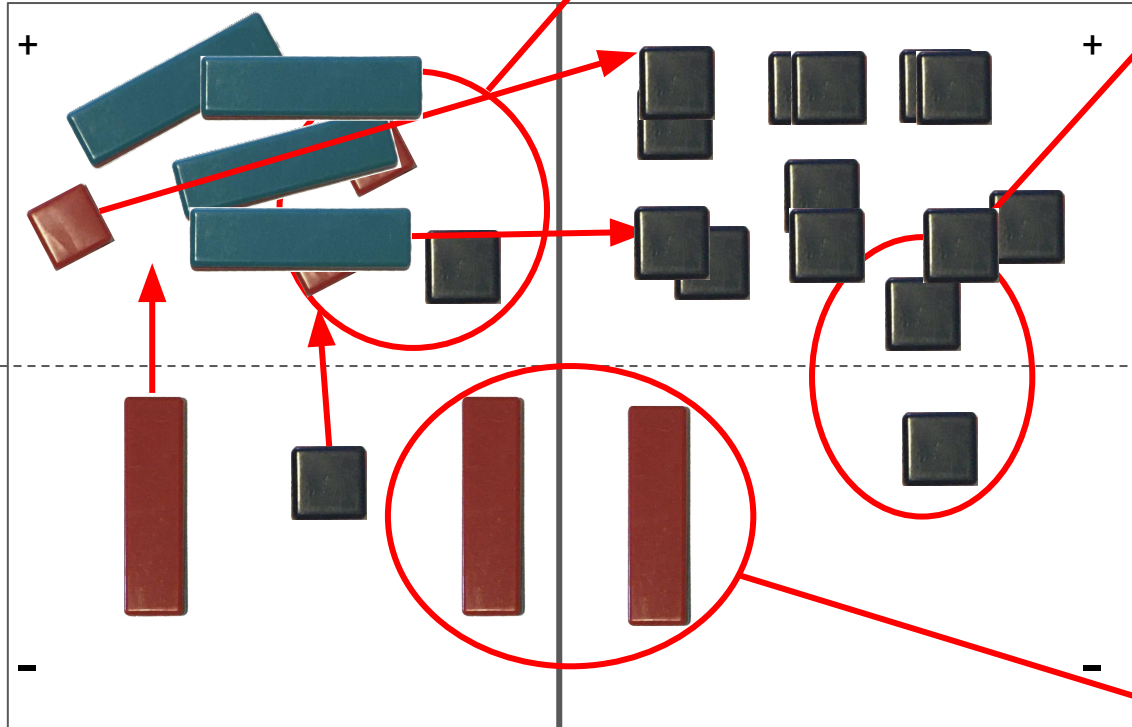


1. Please click on the link posted in the chat.
2. You will have 10 minutes to complete the task.
3. Remember: Work collaboratively with others in your team.



Equation Mats

Solving Equations



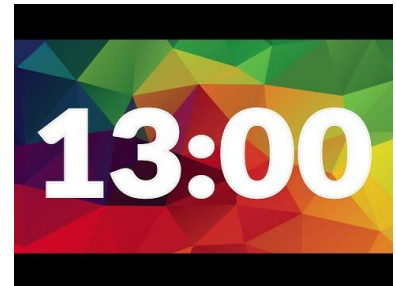
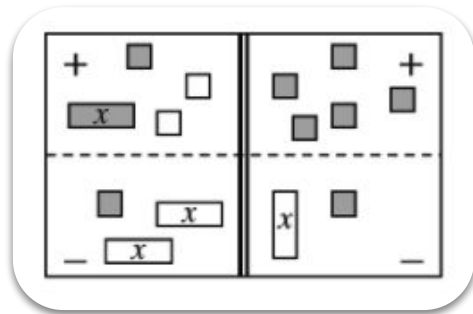
Move	Equation
	$x - 2 + 1 - (-2x + 1) = 5 - (-x + 1)$
Zero Pairs	$x - 1 - (-2x + 1) = 5 - (-x + 1)$
Remove equal amts	$x - 1 - (-x + 1) = 4$
Flip	$2x - 2 = 4$
Flip (add equal amts, remove zeros)	$2x = 6$
Divide into equal amts	$x = 3$

Equation Mats

Practice



1. Open the 1st link posted in the public chat.
2. Use the eTool to solve the equation.
3. Repeat with the 2nd and 3rd link posted in the chat.
4. You will have 13 minutes to work individually.



Equation Mats

Check: Third Problem



+	+
-	-

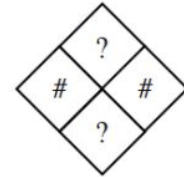
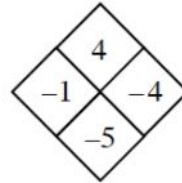
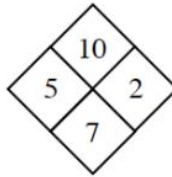
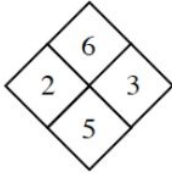
Move	Equation
	$-x - 4 + 1 - (-1 + 4) = -x - 2 - (-4)$
Zero Pairs	$-x - 3 - (3) = -x - 2 - (4)$
Flip	$-x - 6 = -x - 6$
Rmv = amts	$0 = 0$
	Infinite number of solutions

Multiplying and Factoring

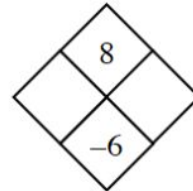
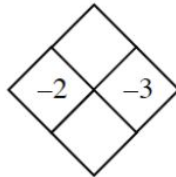
Diamond Problems



Look for a pattern in the first three diamonds below. How could you find the missing numbers (?) if you know the two numbers (#).



Use the pattern you discovered to complete each diamond problem below.

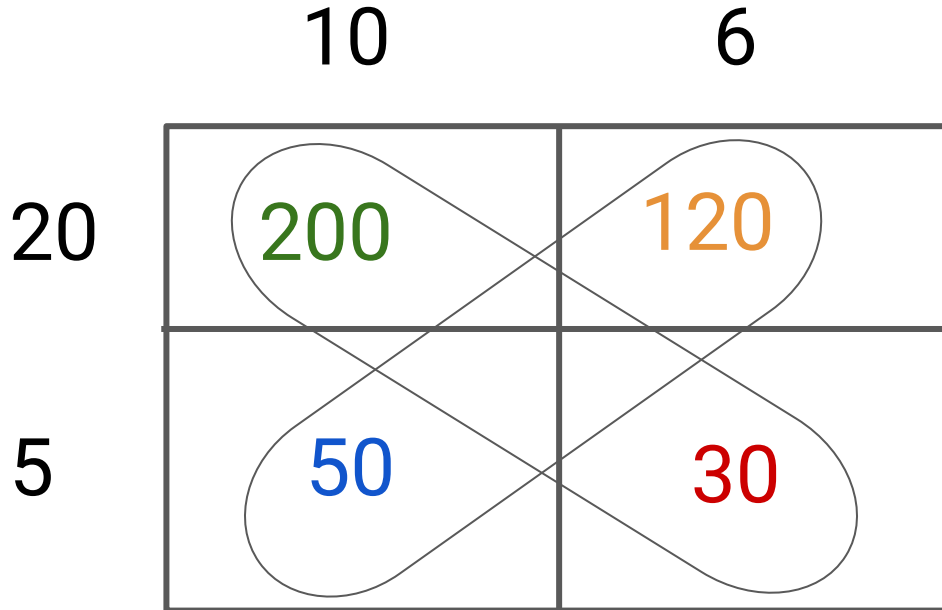


Multiplying and Factoring

Multiplying Using the Area Model



16×25

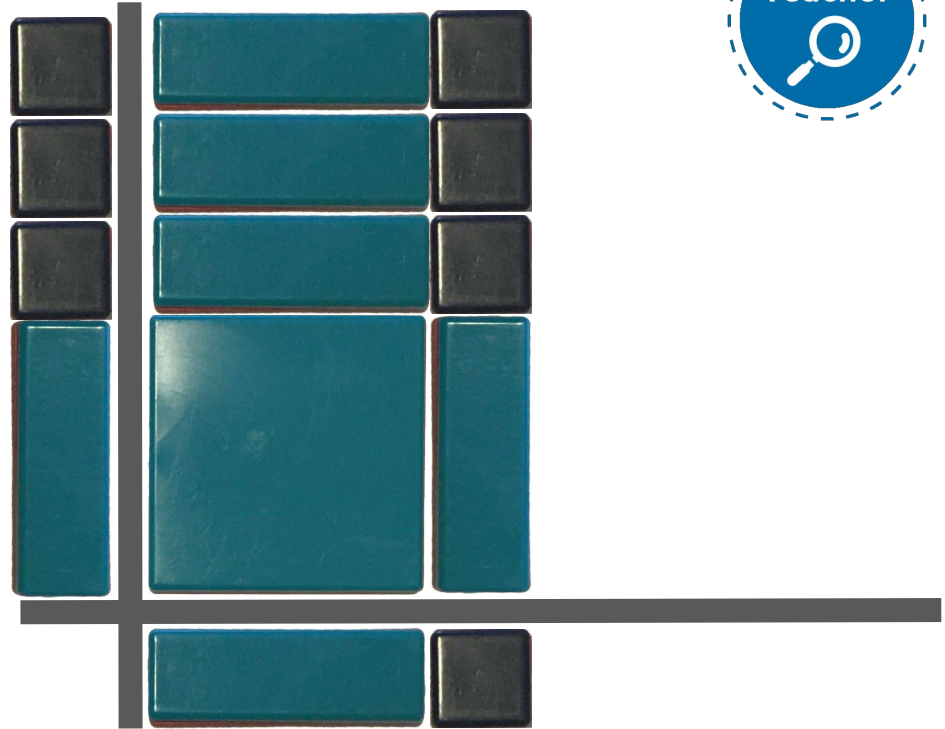


$$\begin{array}{r} 200 \\ 120 \\ 50 \\ +30 \\ \hline 400 \end{array}$$

Multiplying and Factoring

Multiplying Using the Area Model

Multiply $(x + 1)(x + 3)$ using the tiles.



Write the solution as (a product) = (a sum)

$$(x^2 + 4x + 3) = (x + 1)(x + 3)$$

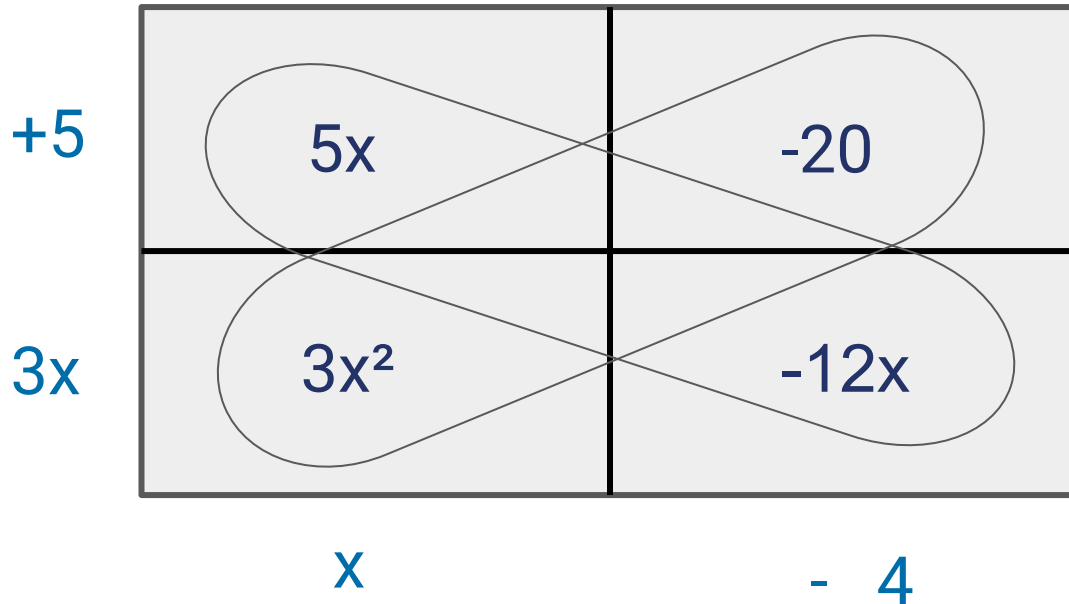


Multiplying and Factoring

Transitioning to Generic Rectangles



$$(3x + 5)(x - 4) = 3x^2 - 7x - 20$$

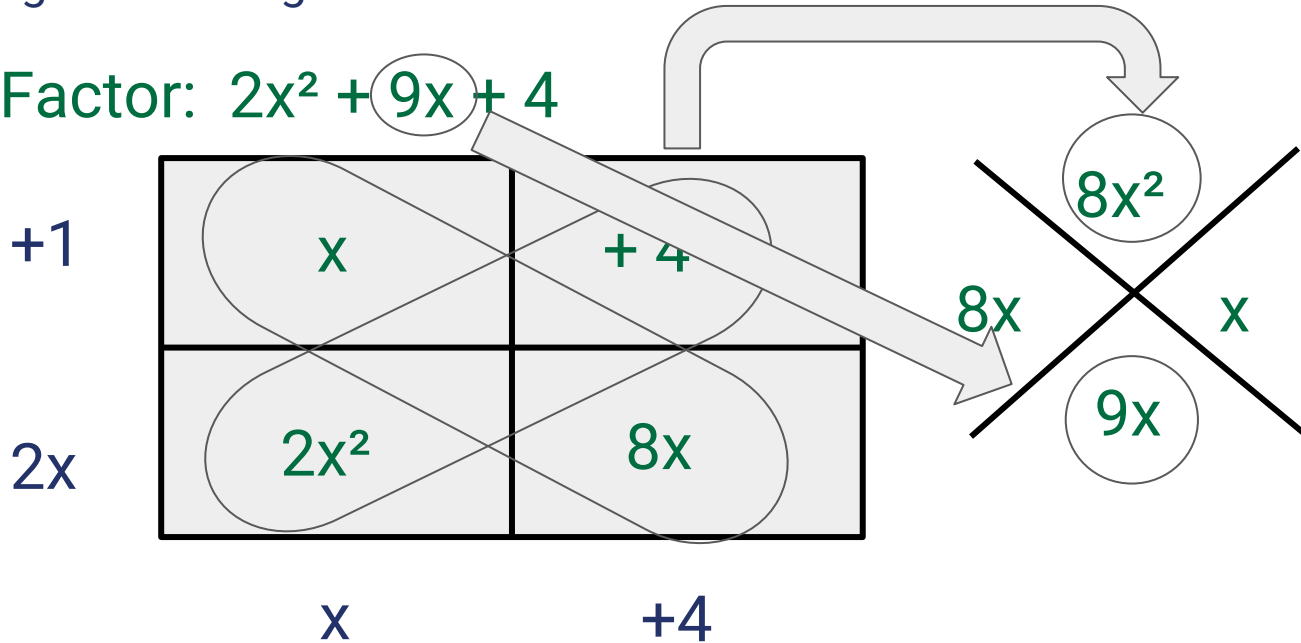


Multiplying and Factoring

Factoring Without Algebra Tiles



Factor: $2x^2 + 9x + 4$



Answer: $2x^2 + 9x + 4 = (2x + 1)(x + 4)$

Closure

Outcomes



Participants will:

Become familiar with algebra tiles.

Use algebra tiles to write variables, evaluate expressions, and solve equations.

Learn how to transition from concrete (manipulatives) to abstract (symbolic notation).

Closure



Closure



- + **Parking Lot**

- + **Attendance**

Either scan the QR code

OR

Enter passcode in the portal

XXXXXX



Text Font: Roboto

Title Font Size: 24

Subtitle Font Size: 18

Color coding:

Teacher Lens: 006DAB

Learning Log: 006DAB

Student Lens: 41AD49

Housekeeping: 233368

Content Module: 006D41

Thread: 006D41

Text should be primarily black or dark blue (#233368)

Note: Drop zones of icons on layouts are not moveable.

HOUSEKEEPING



ANCHOR PAGE



WELCOME



PUZZLE



TEAM GOAL



TEACHER LENS



LEARNING LOG



THREAD



CONTENT MODULE



MATH GOAL



STUDENT LENS



EQUITY LENS



ASSESSMENT



PRODUCTIVE STRUGGLE



RESEARCH PILLARS



MSP



COLLABORATIVE LEARNING



PBL



STUDY TEAMS



LEARNING TARGET



TASK CARD



TEAM ROLES ALL



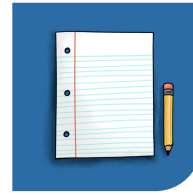
RESOURCE MANAGER



TASK MANAGER



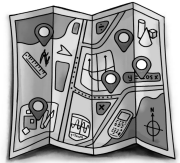
REPORTER RECORDER



FACILITATOR



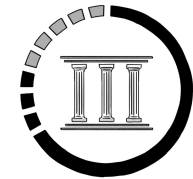
IMPLEMENTATION ACTION PLAN



TEAM ROOMS



IMPLEMENTATION PROGRESS TOOL



STTS

