



Nemeth in a Box for Middle School Students

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PROJECT

INSPIRE



Purpose of Nemeth in a Box

- GOAL: Teach Nemeth Code symbols in mathematical context through puzzles and games that challenge students and build their reasoning skills.
- Side Benefits:
 - Opportunity to meet other students
 - Building skills with online meeting platforms
 - Turn taking and other social skills

Symbol List

Project INSPIRE Middle School Nemeth in a Box

Nemeth in a Box Symbol List

Lesson 1

- ⠠⠶ plus
- ⠠⠤ minus sign
- ⠠⠶⠶ equals sign (is equal to)
- ⠠⠶⠶⠶ not equal to
- ⠠⠶⠶ greater than
- ⠠⠶⠶⠶ greater than or equal to
- ⠠⠶⠶ less than
- ⠠⠶⠶⠶ less than or equal to
- ⠠⠶⠶ opening and closing simple fraction indicators
- ⠠⠶ horizontal fraction line
- ⠠⠶⠶⠶ opening and closing mixed number fraction indicators
- ⠠⠶ general omission symbol
- ⠠⠶⠶⠶⠶ long dash

Lesson 2

- ⠠⠶⠶ multiplication cross (times)
- ⠠⠶ multiplication dot
- ⠠⠶⠶ divided by
- ⠠⠶⠶⠶ approximately equal to

Maze

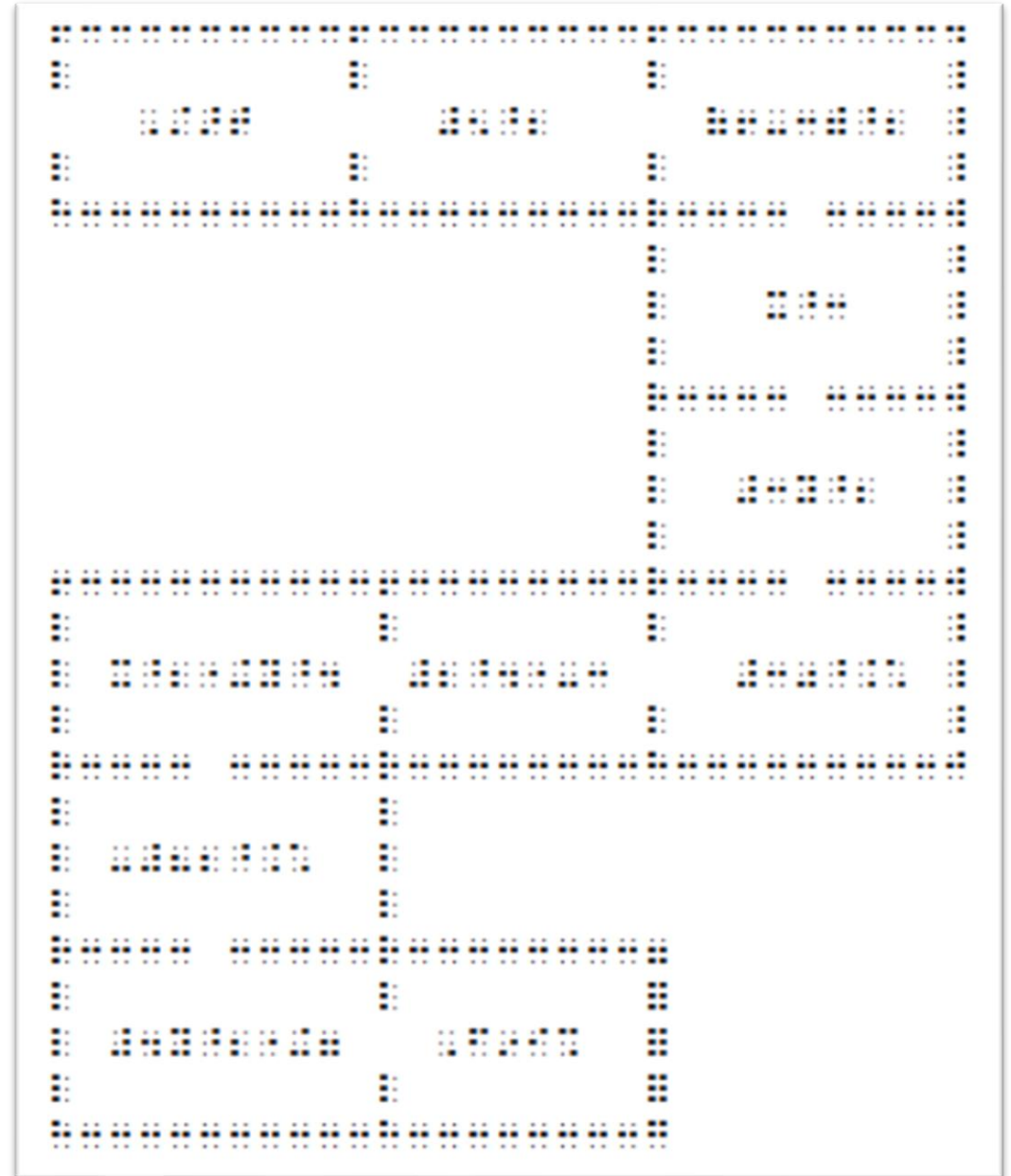
5 Superscript and Degree Symbols Maze for Middle School Students Layout and Answer Key

Read each math expression as you advance through the maze.

Start

5^2	five squared	⠠⠼⠤⠼
$(6 - 3)^2$	open parenthesis six minus 3 close parenthesis squared	⠠⠶⠤⠶⠠⠤⠤⠤⠠⠼⠤⠼
x^3	x cubed	⠠⠭⠤⠼
$3y^2$	three y squared	⠠⠳⠶⠤⠼
30°	thirty degrees	⠠⠼⠠⠠⠠⠤⠠⠠⠠⠤
$2^4 - 3$	two to the fourth power minus three	⠠⠼⠤⠼⠠⠠⠠⠠⠤⠤⠤
$x^2 + y^4$	x squared plus y to the fourth power	⠠⠭⠤⠼⠠⠠⠠⠠⠤⠠⠭⠤⠼⠠⠠⠠⠠⠤
-82°	negative eighty-two degrees	⠠⠠⠠⠠⠠⠠⠤⠠⠠⠠⠤
$4y^2 + 7$	four y squared plus seven	⠠⠠⠠⠠⠤⠠⠶⠤⠼⠠⠠⠠⠠⠤

Finish






What is Wrong?

What is Wrong Lesson 3

Check out this puzzle. Read the expressions in each of the four quadrants. Find "What is Wrong" with each of the first three. It is a common mistake. The last one is always correct. If you think you are on a roll, try to find two mistakes in the challenge puzzle.

Negative five plus open parenthesis eight minus six close parenthesis

Challenge (Find two mistakes.)

Negative eight plus the absolute value of negative three equals negative five



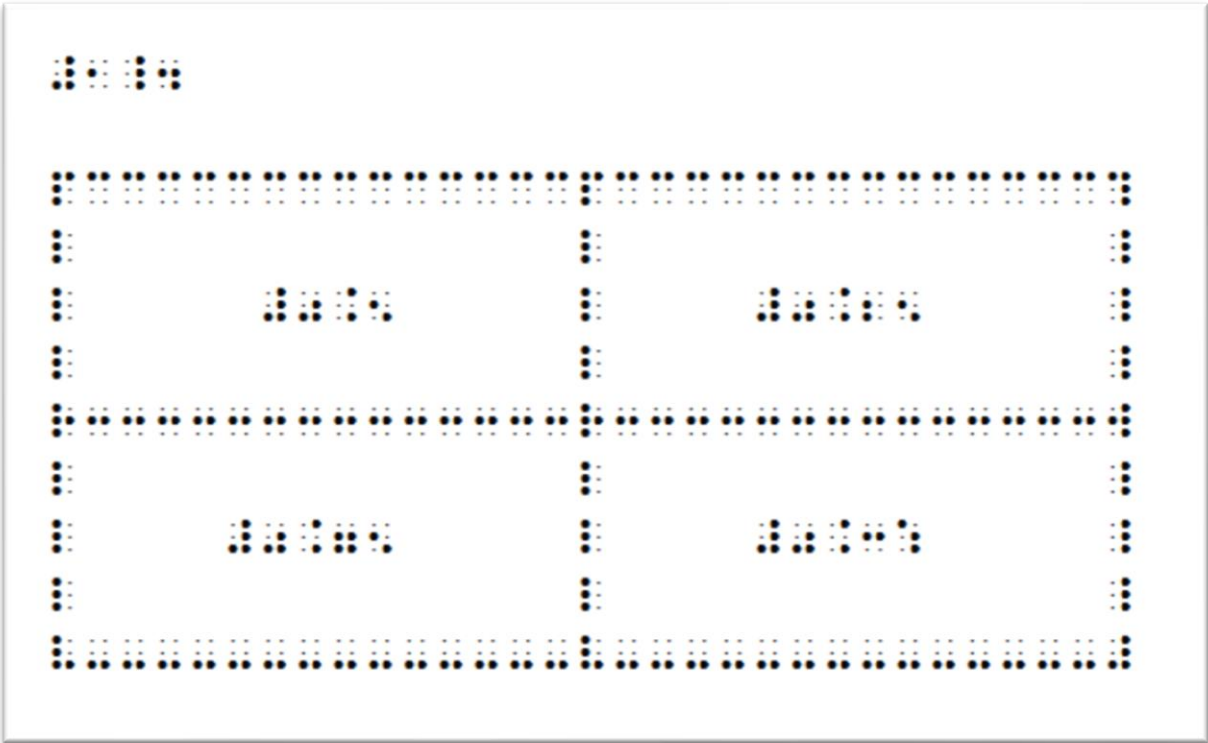
Which One Doesn't Belong from Lesson 2

Which One Doesn't Belong Lesson 2

Read the expression in each of the four quadrants and share your reasoning as to "Which One Doesn't Belong and Why?" The great thing about this is that there are no wrong answers, as long as your reasoning is true.

1.

0.5	0.25
0.75	$0.\overline{3}$



What Is The Question from Lesson 1

What is the Question Lesson 1

Now is your chance to be creative! You will be given the answer and need to come up with a question which gives you that answer. There is an example of a question to get you started, but you must come up with your own. How hard can you make it and still come up with the same answer? How many different symbols can you use and still get that same answer?

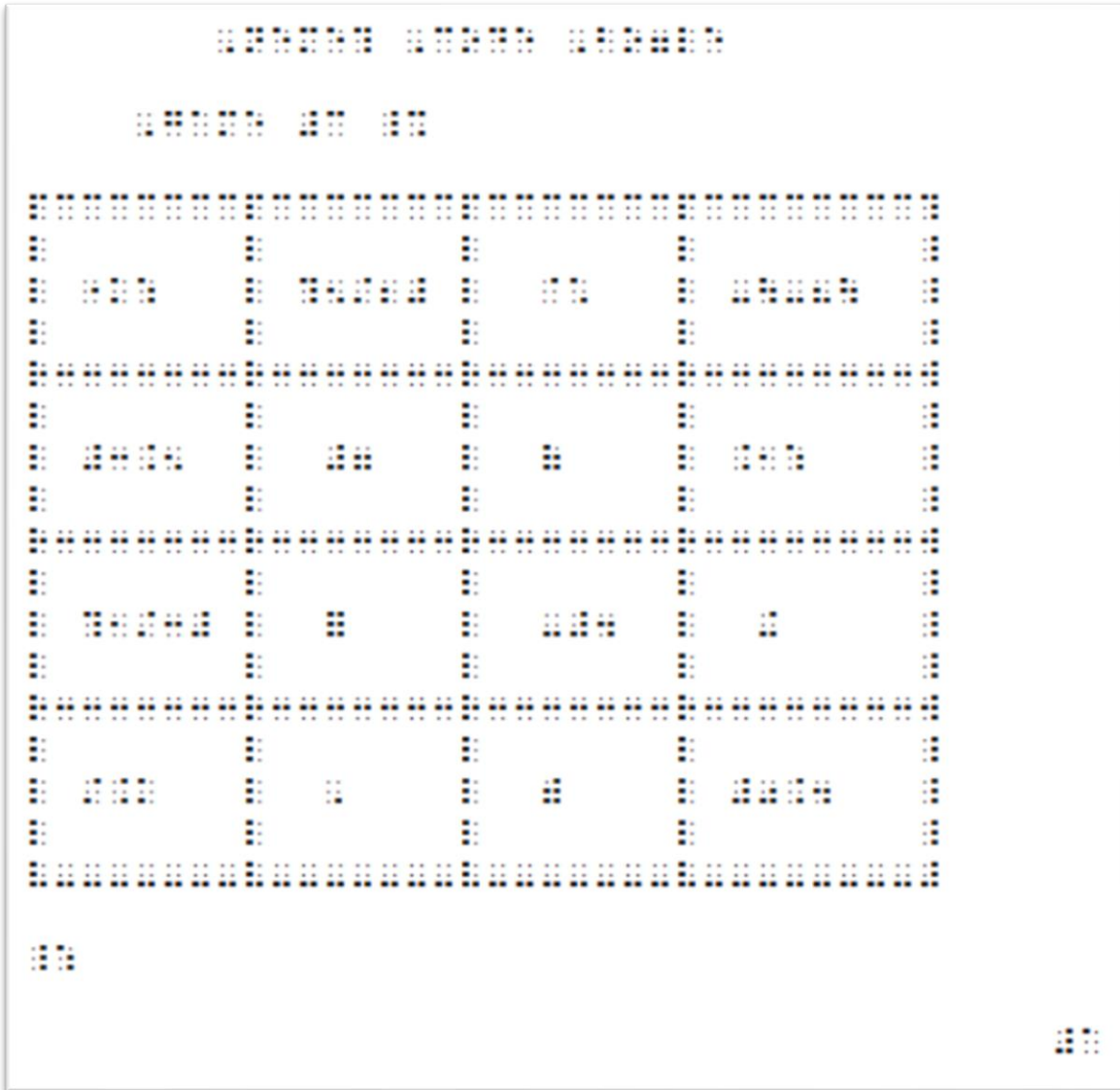
Answer: $5\frac{1}{2}$

Question example: $2\frac{1}{4} + 3\frac{3}{4} - \frac{1}{2} = ?$

Your question that gives the same answer:



Lesson 4: Boggle



Boggle is included for Lesson 2, 4, and 6.

Lesson 7: BINGO

BINGO with Nemeth Code Symbols

List of Symbol and Indicator Names

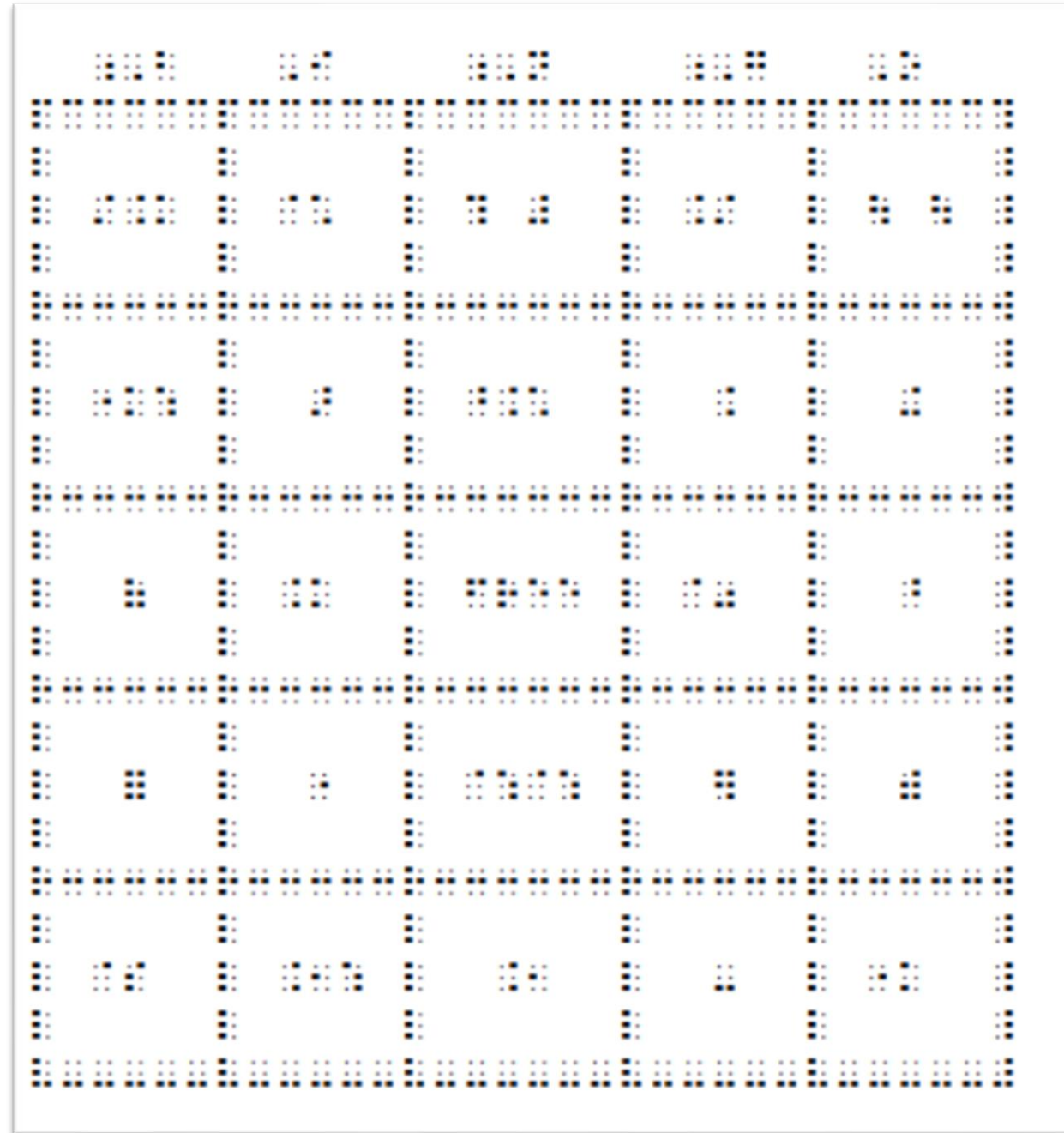
approximately equal to

baseline indicator or
multipurpose indicator

closing parenthesis

decimal point

degrees



Lesson 7: Jeopardy

Fractions and Inequalities	Decimals, Percents, and Money	Negatives and Grouping	Exponents and Degrees	Square Roots
<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>
<u>200</u>	<u>200</u>	<u>200</u>	<u>200</u>	<u>200</u>
<u>300</u>	<u>300</u>	<u>300</u>	<u>300</u>	<u>300</u>
<u>400</u>	<u>400</u>	<u>400</u>	<u>400</u>	<u>400</u>
<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>

What Students Liked Best About Nemeth in a Box

- Getting to know some of my blind peers from around the country.
- I enjoyed..."Which one Doesn't Belong." I enjoyed this because I got to give out my own opinion on which one I thought was different, and I also got to listen to other's opinions and choices.
- I really enjoyed working as a team and figuring out the problems. And the games!
- I enjoy the fact that I learned a lot more [Nemeth] symbols while still having fun.

Project INSPIRE website

<https://www.uscupstate.edu/project-inspire/>