

Rules for Math Problem-Solvers & Thinkers



There are 5 master card templates and an action key card provided. To accommodate a class of 30 students, print 3-6 copies of each master card and an action key card or two for each small group table location.

Distribute the cards strategically so that students in the same group or table arrangement each get a different card.

Students should mark a square with a token, sticker, or dot each time they observe the use of a math thinker action in their group. You can implement a “me-rule” where a student can mark up to three squares representing their own actions. Make it challenging for them by having them speak aloud about those instances.

This game is based on student observation; what a student sees, hears, or does may differ and result in variability in outcome.

Developing Mathematical Problem-Solvers & Thinkers

Through Standards for Mathematical Practice Teacher Guide:

MP1: Make sense of problems and persevere in solving them.

Students foster grit and strategic thinking, learning to tackle a problem with confidence, even when the path forward isn't immediately clear.

MP2: Reason abstractly and quantitatively.

Students learn to move fluidly between a real-world situation (the context) and its mathematical representation (the numbers and operations).

MP3: Construct viable arguments and critique the reasoning of others.

Students learn to “build a case” for their solution, respectfully analyze the methods of their peers, and communicate “why”.

MP4: Model with mathematics.

Students use math as a tool to understand the world, which empowers them to apply the math they know to solve messy, real-world problems.

MP5: Use appropriate tools strategically.

Students learn to choose the right tool for the job. Whether it's a pencil, a protractor, a spreadsheet, or a calculator, students learn to make strategic decisions about which tool will help them solve a problem most efficiently.

MP6: Attend to precision.

Students learn to communicate with clarity and accuracy, combined with the bedrock of good mathematics: precision.

MP7: Look for and make use of structure.

Students learn to see the “big picture” in math and step back and recognize underlying structures and properties.


MP8: Look for and express regularity in repeated reasoning.

Students discover shortcuts for general rules, noticing patterns in repeated calculations to develop a successful method for formula.

Mark each square when you or a classmate demonstrates mathematical thinking in your group.

Get five in a row to win the game!




B	I	N	G	O
MP3	MP5	MP3	MP4	MP8
MP2	MP1	MP6	MP1	MP7
MP6	MP4		MP3	MP5
MP2	MP7	MP1	MP3	MP4
MP8	MP4	MP1	MP6	MP5

Mark each square when you or a classmate demonstrates mathematical thinking in your group.

Get five in a row to win the game!




B	I	N	G	O
MP5	MP3	MP5	MP2	MP1
MP1	MP8	MP4	MP2	MP3
MP4	MP6		MP7	MP3
MP4	MP1	MP8	MP5	MP6
MP1	MP6	MP7	MP4	MP3

Mark each square when you or a classmate demonstrates mathematical thinking in your group.

Get five in a row to win the game!




B	I	N	G	O
MP7	MP1	MP3	MP8	MP2
MP8	MP5	MP7	MP6	MP1
MP2	MP4		MP7	MP6
MP1	MP8	MP6	MP3	MP5
MP1	MP3	MP2	MP1	MP4

Mark each square when you or a classmate demonstrates mathematical thinking in your group.

Get five in a row to win the game!




B	I	N	G	O
MP8	MP6	MP1	MP7	MP4
MP3	MP4	MP2	MP1	MP8
MP7	MP3		MP2	MP6
MP1	MP5	MP4	MP8	MP2
MP5	MP7	MP6	MP1	MP4

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B	I	N	G	O
MP1	MP5	MP2	MP4	MP8
MP7	MP3	MP8	MP2	MP5
MP2	MP4		MP6	MP1
MP3	MP1	MP5	MP8	MP4
MP6	MP4	MP2	MP1	MP5

Actions of Math Problem-Solvers & Thinkers:

MP1:

- Tried one strategy, then tried another
- Kept working on a challenging problem
- Used estimation to check if an answer is reasonable
- Checked answer using a different method

MP2:

- Stated what the numbers in a word problem represent
- Wrote an equation to match a problem
- Identified multiple ways to represent a problem (pictures, numbers, equations)

MP3:

- Asked a clarifying question
- Explained why an answer makes sense
- Listened to a classmate's idea & added to it
- Used "because" to justify thinking

MP4:

- Drew a picture or diagram to solve a problem
- Modeled a real-world situation with an equation
- Created a table or chart to organize their data
- Used a model or drawing to explain their answer to the class

MP5:

- Used a number line to show work
- Chose the best tool for the job
- Used mental math instead of a calculator

MP6:

- Labeled the answer with correct units
- Used precise math words like "factor" or "vertex"
- Explained what the symbols in a formula mean

MP7:

- Explained a pattern they noticed
- Broke a complex problem into smaller, simpler parts

MP8:

- Found a shortcut after doing several calculations
- Noticed a connection to a problem we solved yesterday

Math Problem-Solvers & Thinkers

