The Little Things You Can Do to Make a Big Impact on GED® Math Performance

Information, Resources, and Strategies for the Classroom

Table of Contents

Mathematical Practice Standards

References[6]	Mathematical Practices	Range of Depth of Knowledge (DOK)[7]
M1, M3, M4, M5	**MP.1 Building Solution Pathways and Lines of Reasoning**	
N2, N5, N6, N8	a. Search for and recognize entry points for solving a problem.	1-2
	b. Plan a solution pathway or outline a line of reasoning.	1-3
	c. Select the best solution pathway, according to given criteria.	2-3
	d. Recognize and identify missing information that is required to solve a problem.	1-2
	e. Select the appropriate mathematical technique(s) to use in solving a problem or a line of reasoning.	1-3
M2, M4	**MP.2 Abstracting Problems**	1-2
N2, N3	a. Represent real world problems algebraically.	1-2
	b. Represent real world problems visually.	2-3
	c. Recognize the important and salient attributes of a problem.	
M3	**MP.3 Furthering Lines of Reasoning**	
N7, N9	a. Build steps of a line of reasoning or solution pathway, based on previous step or givens.	1-3
	b. Complete the lines of reasoning of others.	1-3
	c. Improve or correct a flawed line of reasoning.	2-3
M2. M4, M6	**MP.4 Mathematical Fluency**	
N1, N2, N9	a. Manipulate and solve arithmetic expressions.	1-2
	b. Transform and solve algebraic expressions.	1-2
	c. Display data or algebraic expressions graphically.	1-2
M3	**MP.5 Evaluating Reasoning and Solution Pathways**	
N7	a. Recognize flaws in others' reasoning.	2-3
	b. Recognize and use counterexamples.	2-3
	c. Identify the information required to evaluate a line of reasoning.	2-3

6 The GED Mathematics Practices (MP#) are derived from the Common Core State Standards Math Practices (M#) and National Council of Teachers of Mathematics' Principles and Standards for School Mathematics (N#).

7 The Depth of Knowledge (DOK) levels correspond to Norman Webb's (University of Wisconsin) Depth of Knowledge model of cognitive

Frayer Model Template

Frayer Model

Definition:	Facts and/or Characteristics:
Examples:	Non-examples:

Concept:

C-R-A Graphic Organizer

Concrete	Representational	Abstract

Sample Problem:

Math Journals

Date: _____
Title: _____

We area learning _____.

Problem:
_____
_____
_____
_____

I think…
_____
_____

I wonder…
_____
_____

Date: _____
Title: _____

Today in math I learned…
_____.

One problem I solved was…
_____
_____
_____
_____

Two ways to solve this problem are…
_____
_____
_____
_____

Word Wall Activities

1. **Word detective:** Give a clue about what a word means. Students pick the word from the word wall that matches the clue. For example: "I am 90° and you can find me in corners, where the floor meets the wall." "Right angle!"
2. **Math Collage:** Assign each student or pair of students a different math word. Students look through magazines to find pictures that represent the word. They put together a collage of images that show examples of their math word.
3. **Cloze sentences:** Create sentences with blanks where the math vocabulary word would go. For example: "The car stopped at the 8-sided stop sign, which is shaped like a/an _____ ." Students choose the right vocabulary word to fill in the blank.
4. **Word web:** Assign each student a different vocabulary word. Students create a web of words that remind them of the vocabulary word. Alternatively, they can draw pictures instead of writing a web of words.

5. **Math plctlonary:** Students work in pairs. One student takes a vocabulary card and draws a picture that represents the word while the other student guesses the word, then they switch. Alternatively, students can act out the words instead of drawing.
6. **Find the connection:** Students take turns choosing two math vocabulary words from the word wall and explaining how they are related. The words can have similar meanings, opposite meanings, describe one another, etc.
7. **Linking words:** Name a math topic. like "types of polygons." Students need to find all the math words on the word wall that are related, or linked, to the math topic. You can play a second round where students have to find words that are the opposite or non-examples of the math topic.

CUBES Graphic Organizer

C	CIRCLE any key numbers.	
U	UNDERLINE the question.	
B	BOX any key words.	
E	EVALUATE steps to take.	
S	SOLVE and check.	

RICE Method Graphic Organizer

Restate	**I**llustrate
Compute	**E**valuate

UPS-Check Graphic Organizer

U – Understand the Problem	
P – Plan the Solution	
S – Solve the Problem	
✓ – Check the Solution	

Draw It!!!

Instructions: Solve the problem below by drawing or illustrating the problem to come up with an equation. Then use the equation to solve the problem.

A clothing design business makes 3 million more dresses the second year than the first. The third year, the business makes double the number of dresses it made the second year. If the business makes 38 million dresses the third year, how many dresses, in millions, did it make the first year?

Draw or Illustrate	Write the Equation and Solve

Problem Solving Schemas

Parts and Total Total	**Comparison + −** Difference	**Change** Change
Equal Parts Equal Groups	**Comparison × ÷** Comparison	**Proportion** Ratio/Proportion
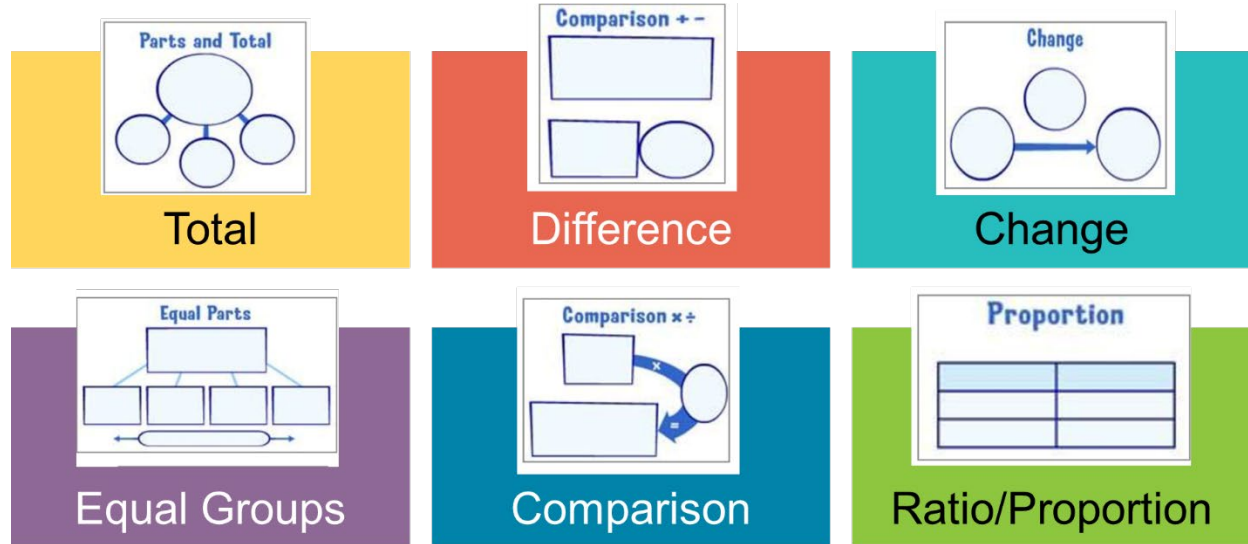
Total
- Involves adding or combining two or more distinct sets (each set representing a part) that are put together to form a total.
- Also known as part-part-whole or combine.
- Students might solve for any unknown in the equation.
- Can be used with a variety of types of numbers (e.g., whole, fractions, decimals).

Difference
- Involves comparing and finding the difference between two sets.
- Also known as compare.
- Students might solve for any unknown in the equation.
- Can be used with a variety of types of numbers (e.g., whole, fractions, decimals).

Change:
- Involves finding the increase or decrease in the quantity of the same set (i.e., there is one set and something happens to that set).
- Can involve multiple changes to the same set.
- Change schemas differ from total and difference schemas in that they involve a change in the set over time.
- Students might solve for any number in the equation.
- Can be used with a variety of types of numbers (e.g., whole, fractions, decimals).

Equal Groups
- Involves multiplying or dividing groups where there is an equal number in each group.
- Students might solve for any unknown in the equation.

- Can be used with a variety of types of numbers (e.g., whole, fractions, decimals).

Comparison:
- Involves multiplying a set a given number of times.
- Students might solve for any unknown in the equation.
- Can be used with a variety of types of numbers (e.g., whole, fractions, decimals).

Ratio and Proportion:
- Involves finding the relationship between two numbers.
- Students might solve for any unknown in the equation.
- Can be used with a variety of types of numbers (e.g., whole, fractions, decimals).

The IRIS Center Peabody College Vanderbilt University. (2024). What evidence-based mathematics practices can teachers employ? Page 6: Schema Instruction. Vanderbilt University Nashville, TN 37203. Retrieved from: https://iris.peabody.vanderbilt.edu/module/math/cresource/q2/p06/

Building Number Sense with Subtraction

Instructions: Use friendly jumps, benchmark numbers or same difference method to subtract the following numbers.

1. 98 – 19 =

2. 73 – 47 =

3. 67 – 99 =

Resources from the World Wide Web

Mathematical Reasoning

Assessment Guide for Educators: Mathematical Reasoning
https://ged.com/wp-content/uploads/assessment_guide_for_educators_math.pdf

GED® Educator Handbook
https://ged.com/wp-content/uploads/Educator_Handbook_Ed6_ebook_US_FINAL.pdf

Math Word Walls: How to Teach Math Vocabulary
https://jillianstarrteaching.com/math-word-walls/

5 Actionable Strategies to Grow Your Students' Math Vocabulary
https://luminouslearning.com/blogs/sped-math/teaching-math-vocabulary

Granite School District FREE Printable Vocabulary Cards
https://www.graniteschools.org/mathvocabulary/vocabulary-cards/

Schema Instruction
https://iris.peabody.vanderbilt.edu/module/math/cresource/q2/p06/

Read-Draw-Write: Making Word Problems Less Problematic
https://greatminds.org/math/blog/eureka/read-draw-write-making-word-problems-less-problematic

Smart Math Flash Cards & Games for iOS
https://apps.apple.com/us/app/smart-math-flash-cards-games/id1520280771?platform=iphone

Basic Geometric Symbols & Labeling
https://mathbitsnotebook.com/Geometry/BasicTerms/BTnotation2.html

The Willingness to Try (Facebook Reel)
https://www.facebook.com/reel/1966721250347108

How Many Would You Bring to This Party? (Facebook Reel)
https://www.facebook.com/reel/229137469669493

Measurement in America
https://www.facebook.com/reel/1446351192822951

Power of a Line
https://www.facebook.com/reel/319764954096739