Before We Get Started

During the webinar, **please:**

1. Keep your sound and video **muted**. This will limit background noise.
2. Ask questions using the **chat function**.
3. Keep in mind that the session is being **recorded** for future viewing.

GED TESTING SERVICE®

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

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Facilitator

Ronald Cruz

- Adult Education Supervisor, Hillsborough County Public Schools, Tampa, FL
- Former Mathematics and Physics Teacher
- National Trainer, GED®
- Consultant, Trainer and Content Developer, Florida IPDAE, ACE of Florida, Florida Department of Corrections and the Florida Department of Education
- Statewide Trainer and Consultant for Delaware, Georgia, Maryland, Mississippi, and South Carolina

In This Session:

- Discuss the mathematical practice standards.
- Use the mathematical practice standards to diagnose and address common problems students have with mathematics.
- Explore strategies to apply the mathematical practice standards and make a big impact on GED Mathematical Reasoning performance.

What can you do to make a big impact on GED® Math performance?

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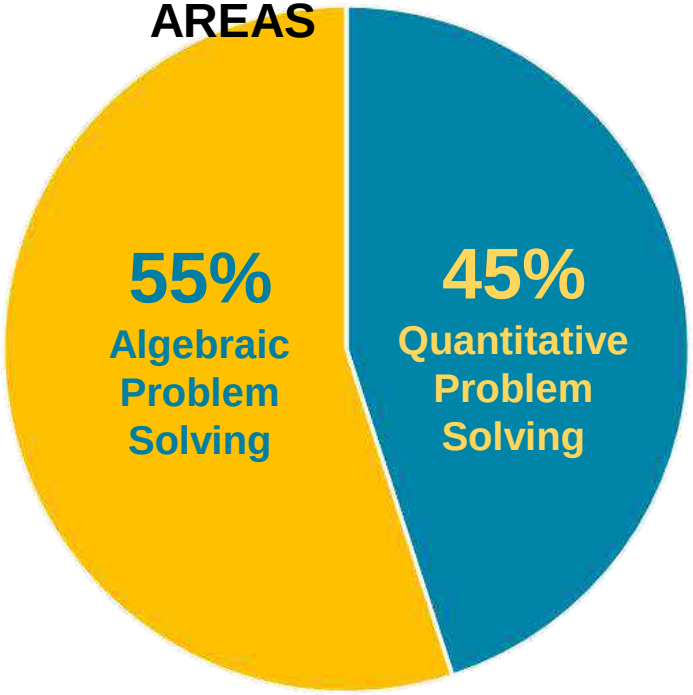
Understand the Test Structure

CONTENT AREAS



COMPETENCIES

The GED® Mathematical Reasoning Test strikes a balance between:

1) Conceptual Understanding
2) Procedural Skill and Fluency
3) Applications to Realistic Situations

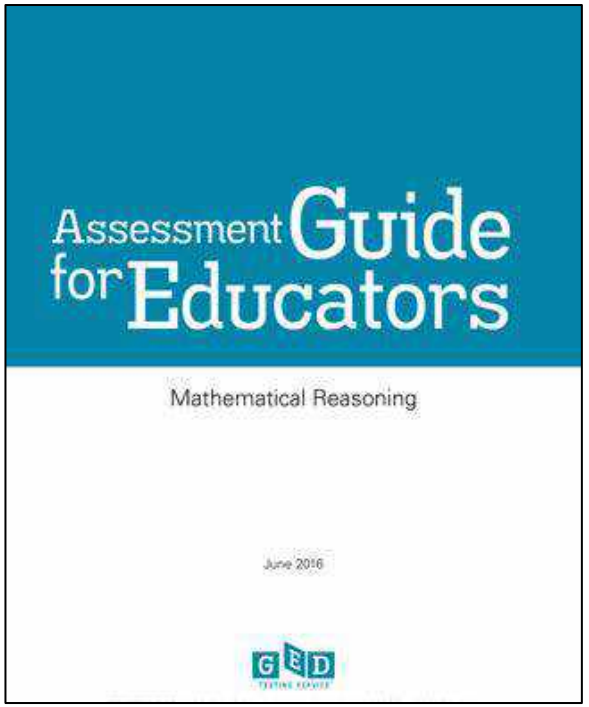
ITEM TYPES

1) Multiple Choice
2) Drag-and-Drop
3) Hot Spot
4) Fill in the Blank
5) Drop-Down

Know the Test Specifications

The following specifications guide the GED® Mathematical Reasoning test:

1) Tests procedural skill and fluency as well as problem solving
2) Uses both academic and workplace contexts
3) 50% of items written at Level 2 Depth of Knowledge complexity
4) Mathematics formula sheet available throughout the test
5) TI-30XS Multiview scientific calculator available for use on most items



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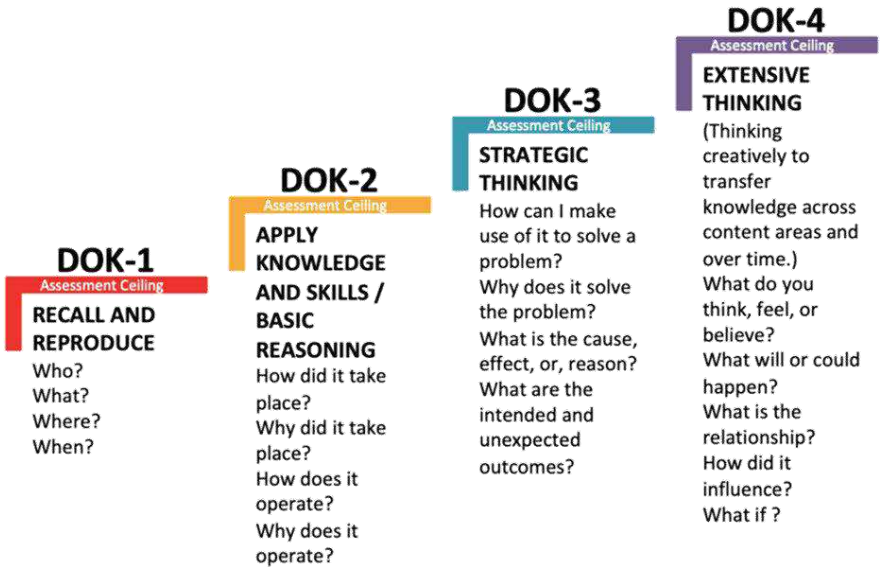
Level 2 Depth of Knowledge (Skill/Concept)

DOK 2 involves engaging in some mental processing beyond a habitual response as well as decision-making about how to approach the problem or activity. This category can require conceptual understanding and/or demonstrating conceptual knowledge by explaining thinking in terms of concepts.



https://www.structural-learning.com/post/webbs-depth-of-knowledge

Level 1	Level 2
Identify and find critical features of a graph or function (i.e., finding the slope of linear function).	Construct a graph and interpret the meaning of critical features of a function.
Perform basic computation or convert between different units of measurement.	Illustrate a computation by different representations to explain the results.
Compute measures of central tendency.	Interpret such measures for a data set within its context or use measures to compare multiple data sets.
State or identify basic properties of geometric figures.	Explain in one's own words the reasons for an action or application of a property.
Translate a point over the x- or y-axis.	Mentally rotate a 3D figure or transform a figure.
Determine the probability of a simple event.	Determine a sample space or probability of a compound event.

Provide Opportunities to Apply Mathematical Practice Standards

Did you know…

Approximately 30% of the items are aligned to a Mathematical Practice Standard in addition to a content indicator.

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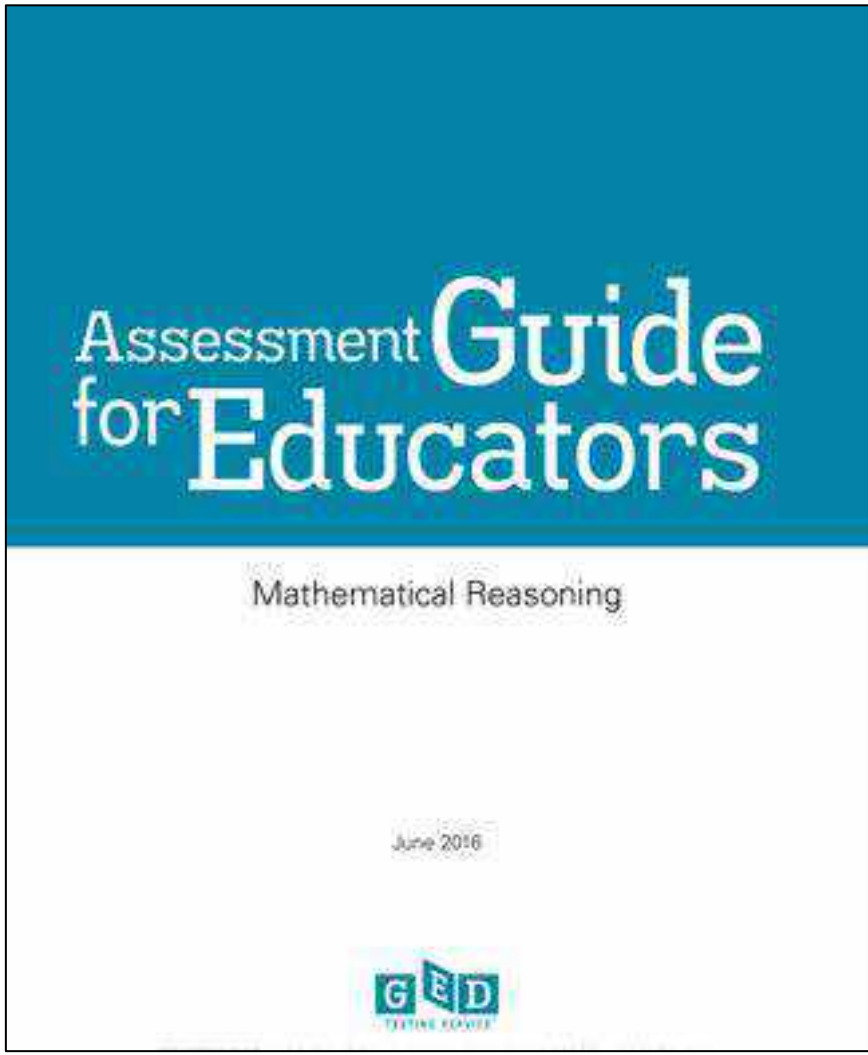
GED® Mathematical Practice Standards



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GED® Mathematical Practice Standards

- MP.1 Building Solution Pathways and Lines of Reasoning
- MP.2 Abstracting Problems
- MP.3 Furthering Lines of Reasoning
- MP.4 Mathematical Fluency
- MP.5 Evaluating Reasoning and Solution Pathways

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GED® Mathematical Practice Standards

- MP.1 Building Solution Pathways and Lines of Reasoning
- MP.2 Abstracting Problems
- MP.3 Furthering Lines of Reasoning
- MP.4 Mathematical Fluency
- MP.5 Evaluating Reasoning and Solution Pathways

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GED® Mathematical Practice Standards

MP.1 Building Solution Pathways and Lines of Reasoning	→	Students don't understand word problems.
MP.2 Abstracting Problems	→	Students cannot visualize word problems.
MP.3 Furthering Lines of Reasoning	→	Students make careless mistakes.
MP.4 Mathematical Fluency	→	Students running out of time.
MP.5 Evaluating Reasoning and Solution Pathways	→	Students make incorrect assumptions.

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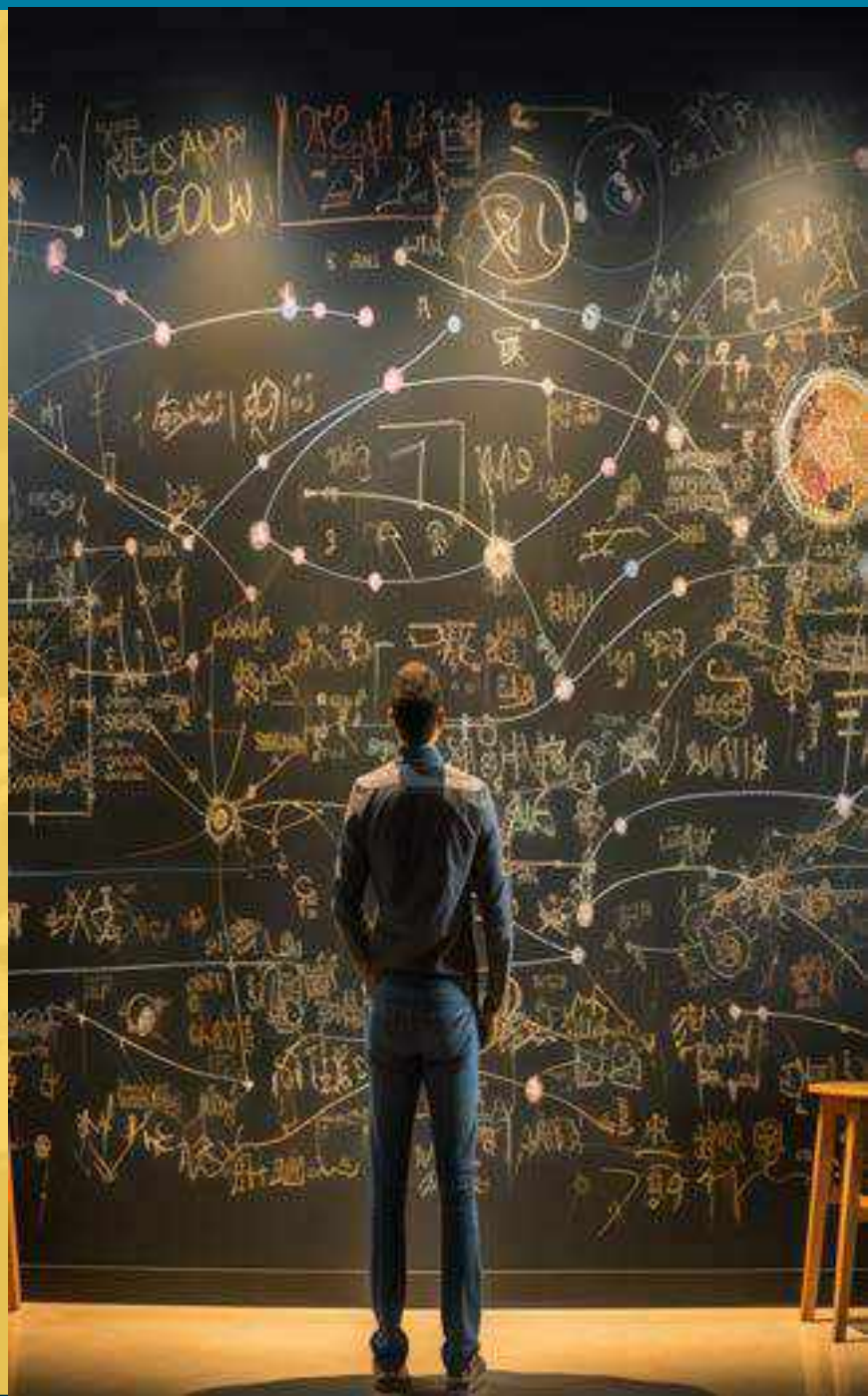
Students Don't Understand Word Problems



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MP.1 Building Solution Pathways and Lines of Reasoning

M1, M3, M4 and M5

a. Search for and recognize entry points for solving a problem.
b. Plan a solution pathway or outline a line of reasoning.
c. Select the best solution pathway, according to given criteria.
d. Recognize and identify missing information that is required to solve a problem.
e. Select the appropriate mathematical technique(s) to use in solving a problem or a line of reasoning.

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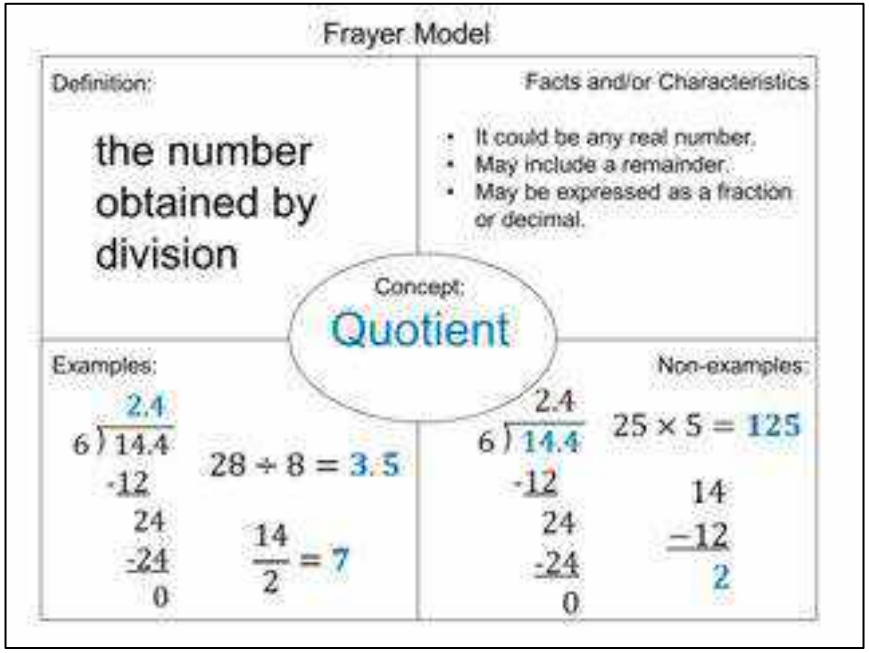
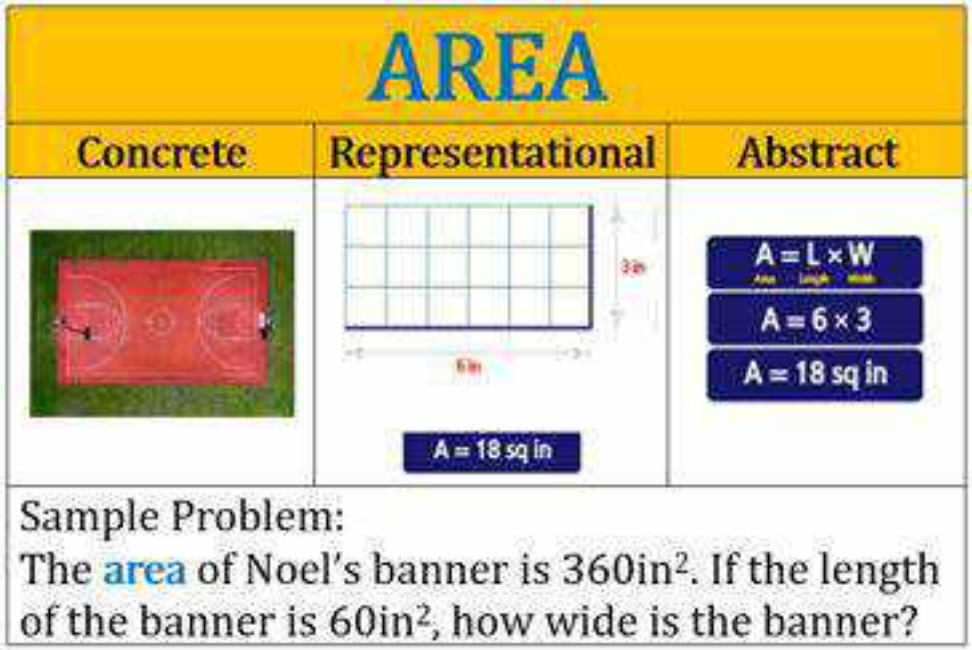
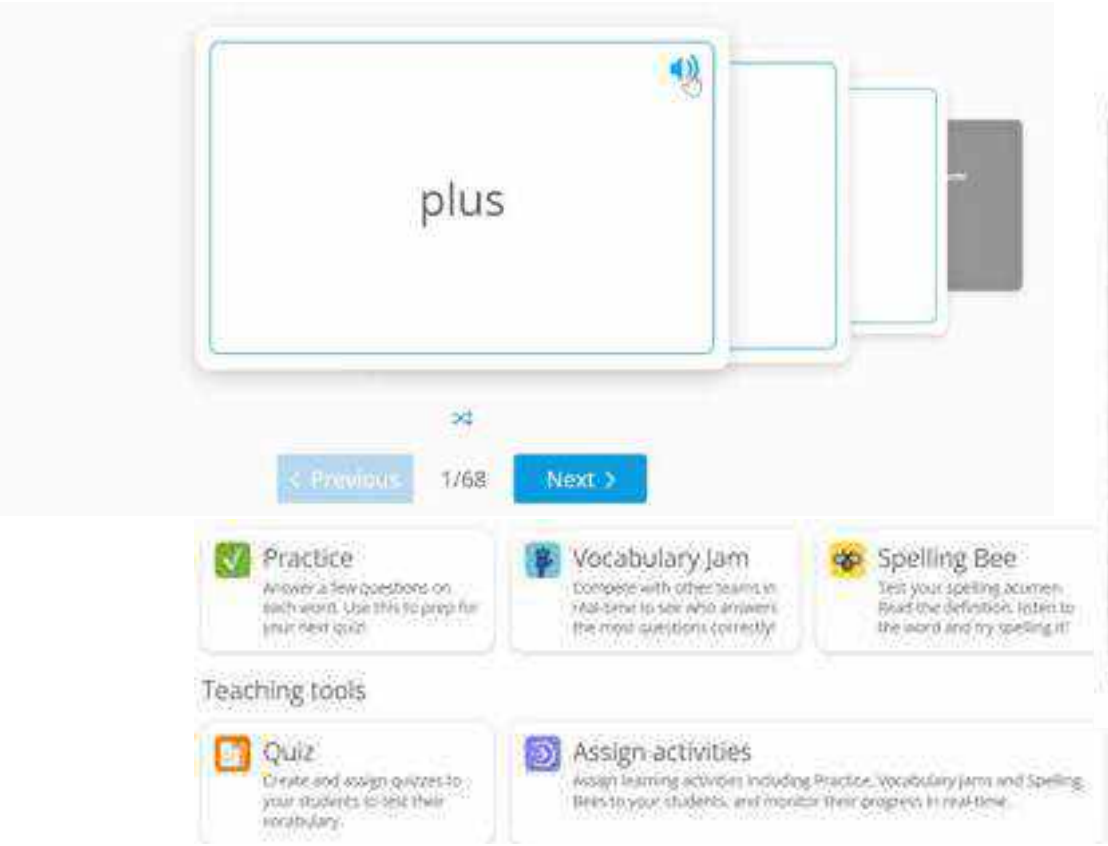
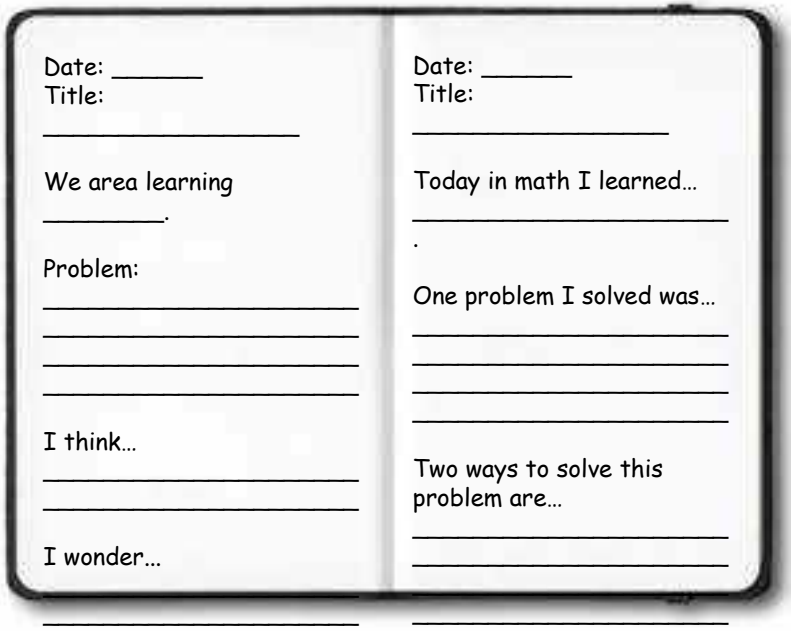
Teach Math Vocabulary – Use Graphic Organizers

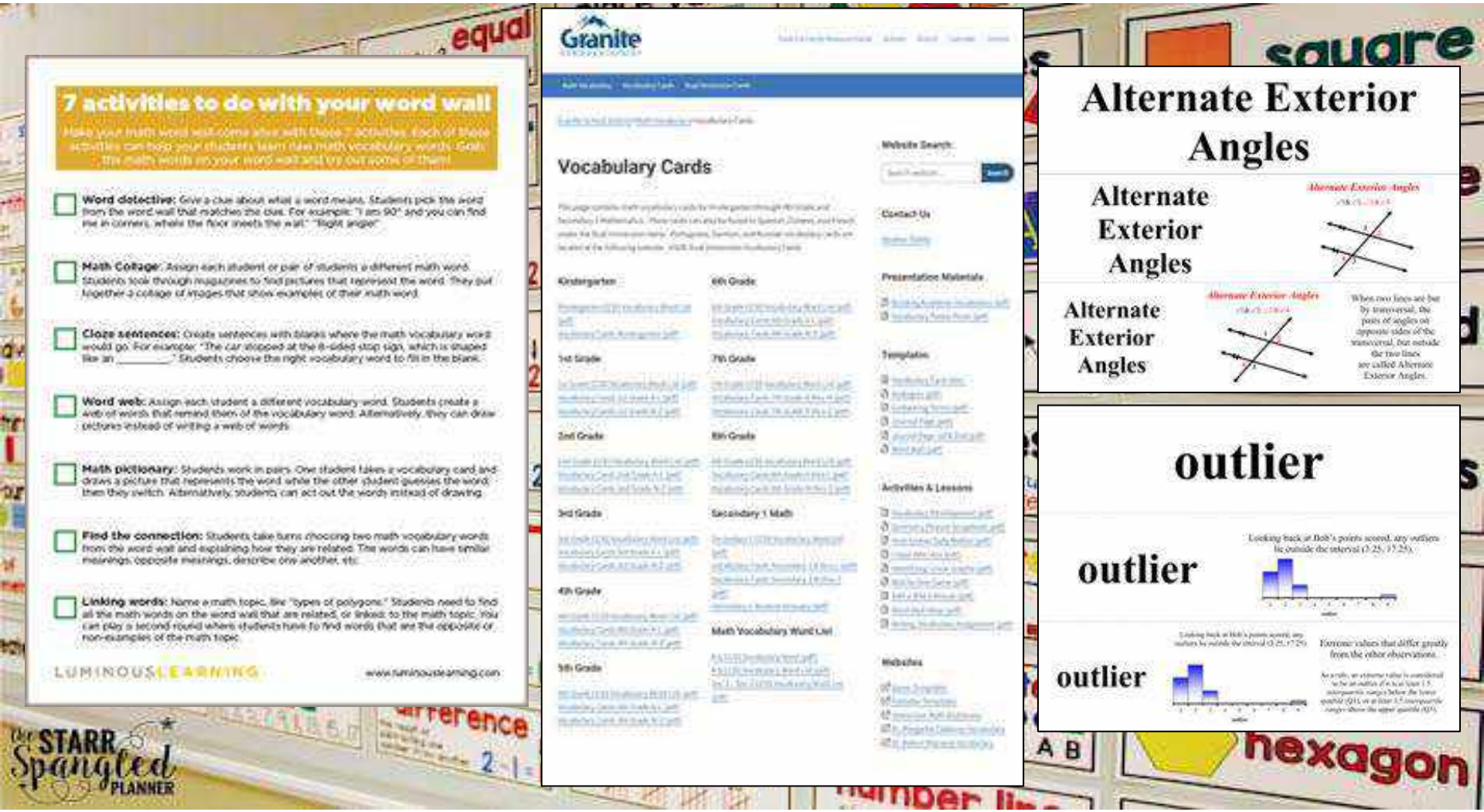




Math Vocabulary Activities

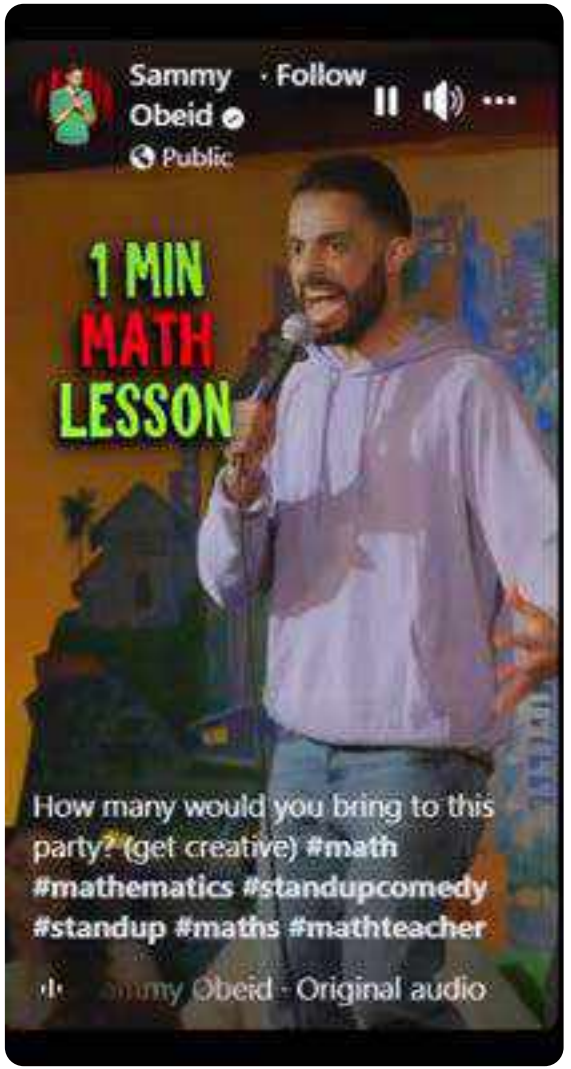





7 activities to do with your word wall
Make your math word wall come alive with these 7 activities. Each of these activities can help your students learn new math vocabulary words. Grab the math words on your word wall and try out some of them!
Word detective: Give a clue about what a word means. Students 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!"
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 shows examples of their math word.
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 an _____." Students choose the right vocabulary word to fill in the blank.
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.
Math pictionary: 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.
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.
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.
LUMINOUSLEARNING
www.luminouslearning.com
Granite
Vocabulary Cards
Website Search
Contact Us
Presentation Materials
Templates
Activities & Lessons
Websites
Kindergarten
1st Grade
2nd Grade
3rd Grade
4th Grade
5th Grade
6th Grade
7th Grade
8th Grade
Secondary 1 Math
Math Vocabulary Word List
Alternate Exterior Angles
Alternate Exterior Angles
Alternate Exterior Angles
Alternate Exterior Angles
Alternate Exterior Angles
outlier
outlier
outlier
Extreme values that differ greatly from the other observations.
The STARR Spangled PLANNER

Teach Vocabulary in Ways Students Understand

- Activate background knowledge – start with what they know
- Use student-friendly definitions
- Teach vocabulary in context rather than definitions
- Pre-teach vocabulary to build foundational knowledge.
- Teach vocabulary explicitly.
- Model correct use of vocabulary and practice.
- Re-teach and review vocabulary at the end of the unit.



Teaching Tip: Teach Vocabulary, NOT Key Words

Julie left $9 on the table. Her brother left $6 on the table. How much money was left on the table?

- The use of keywords prevent students from thinking critically about a problem or making sense of the situation.
- Use of keywords may lead students to miss the big picture.
- Students can get lost when there is no keyword.
- The use of keywords does NOT work with more advanced problems or those with more than one step.

Planning Entry Points and Solution Pathways – Use Graphic Organizers

CUBES Graphic Organizer

	CIRCLE any key numbers.	
	UNDERLINE the question.	
	BOX any key words.	
	EVALUATE steps to take.	
	SOLVE and check.	

UPS-Check Graphic Organizer

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

RICE Method Graphic Organizer

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

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Students Cannot Visualize Word Problems

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MP.2 Abstracting Problems

M2 and M4

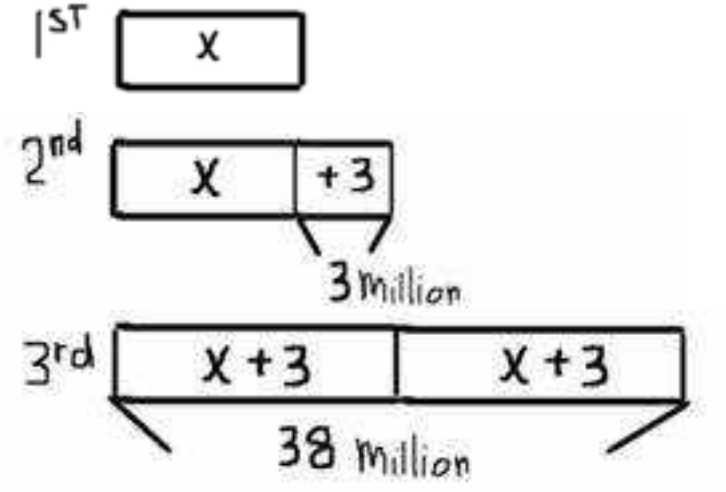
a. Represent real world problems algebraically.

b. Represent real world problems visually.

c. Recognize the important and salient attributes of a problem.

Draw It!!!

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?



$$2x + 6 = 38$$

$$2x = 32$$

$$x = 16$$

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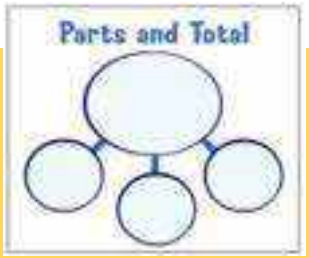
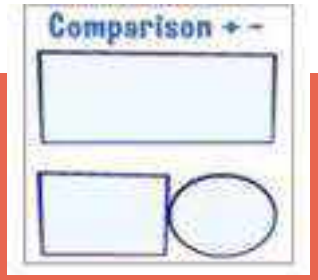
The Power of Drawing the Problem

- Drawing the problem is a better approach to word problems than just key words.
- Drawing helps students visualize and make sense of word problems.
- Creating a diagram helps students process as a solution strategy.
- The drawings help students get past the complexity of the problem and come up with an algebraic equation to represent the situation.
- This strategy stays with students beyond the GED® test and empowers them to tackle new math problems with confidence.

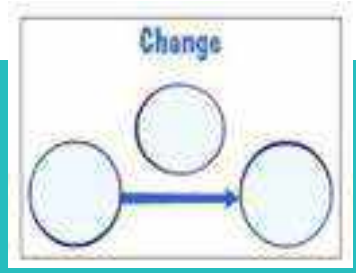
Use Word Problem Schemas



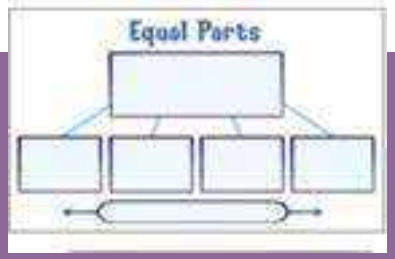
Total



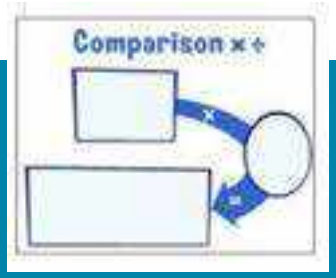
Difference



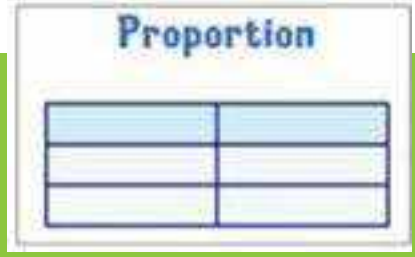
Change



Equal Groups



Comparison



Ratio/Proportion

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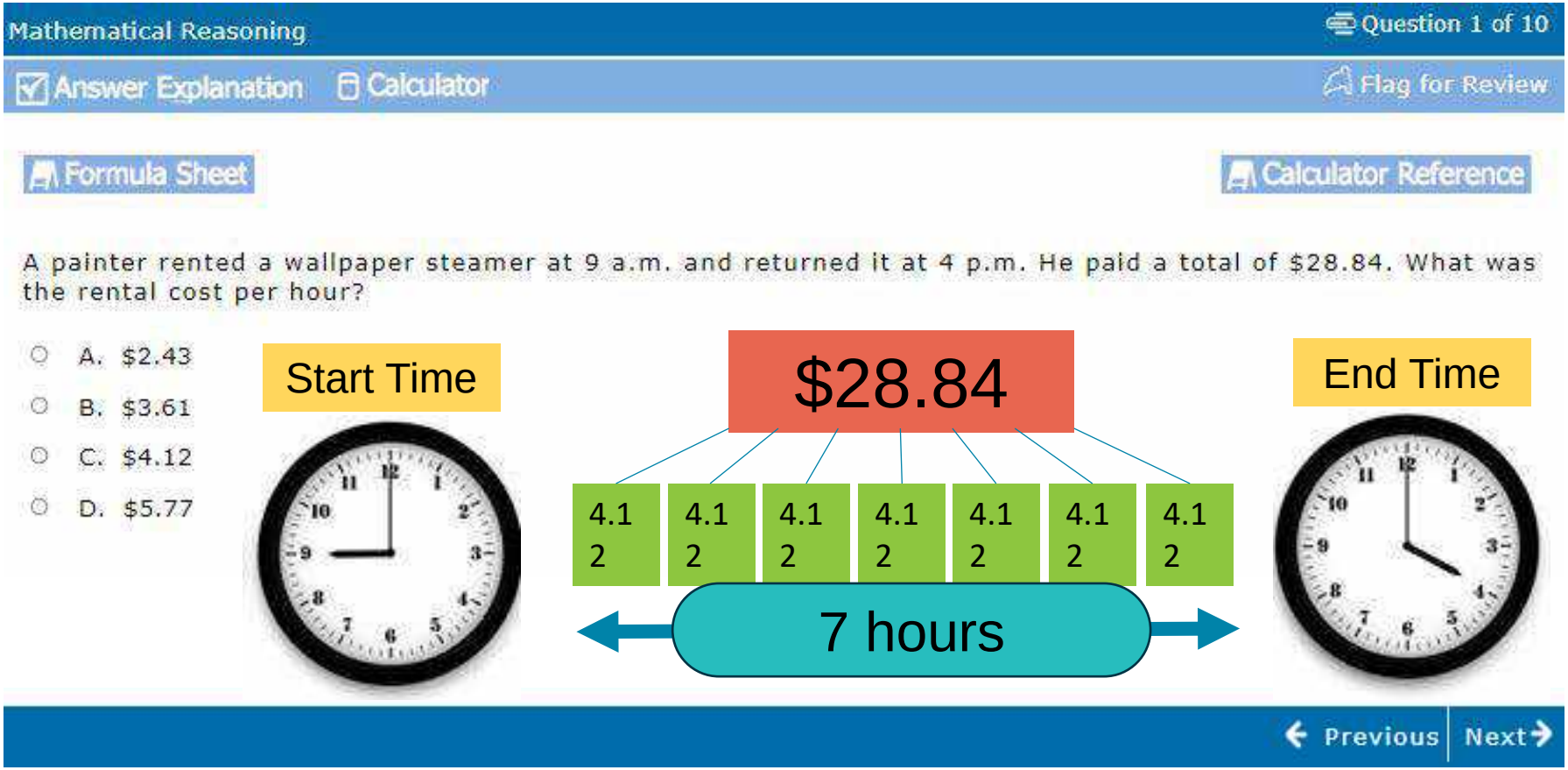
Using Drawings and Schema



Students Making Careless Mistakes

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MP.3 Furthering Lines of Reasoning

M3

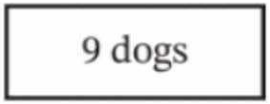
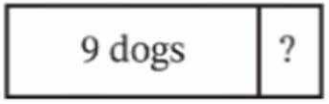
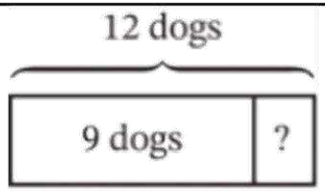
a. Build steps of a line of reasoning or solution pathway, based on previous step or givens.

b. Complete the lines of reasoning of others.

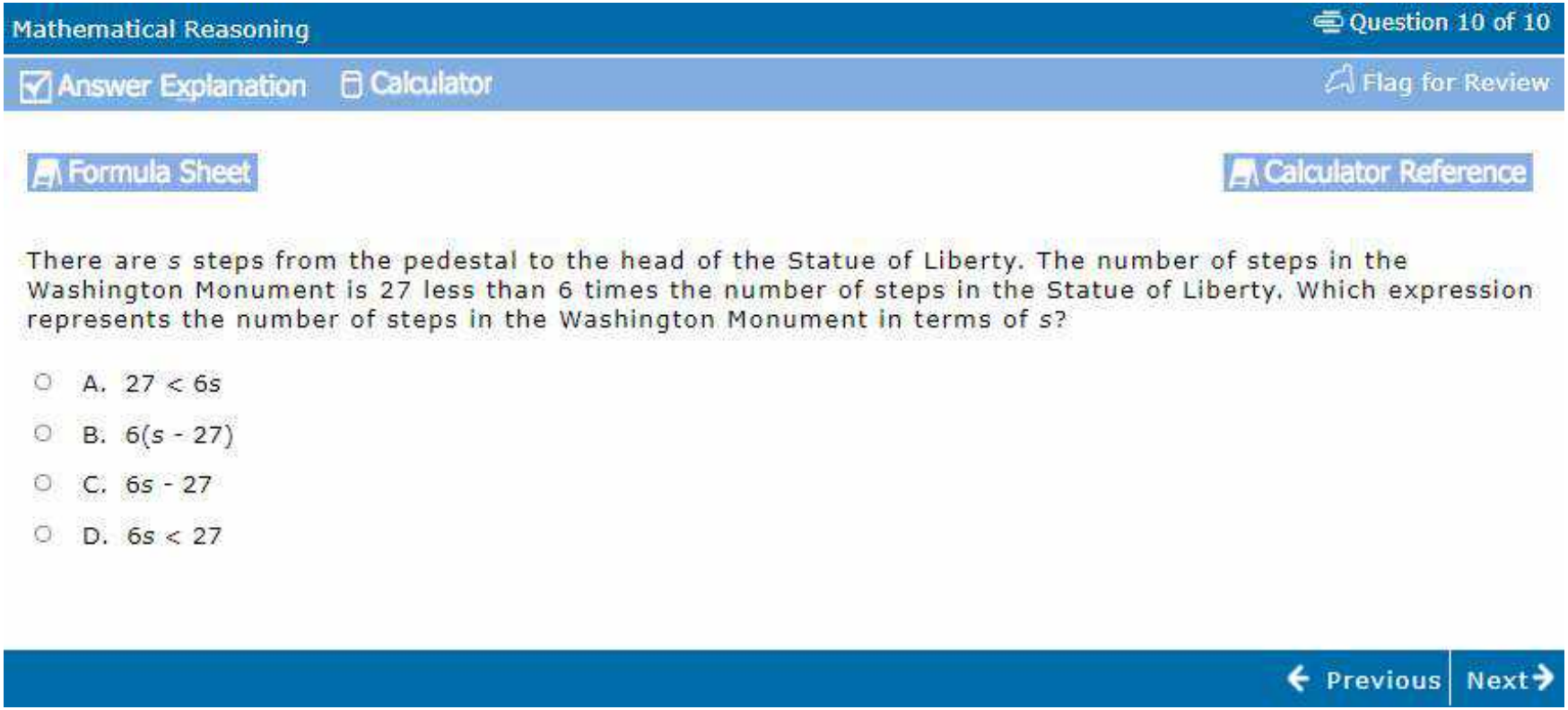
c. Improve or correct a flawed line of reasoning.

Strategy: Read – Draw – Write

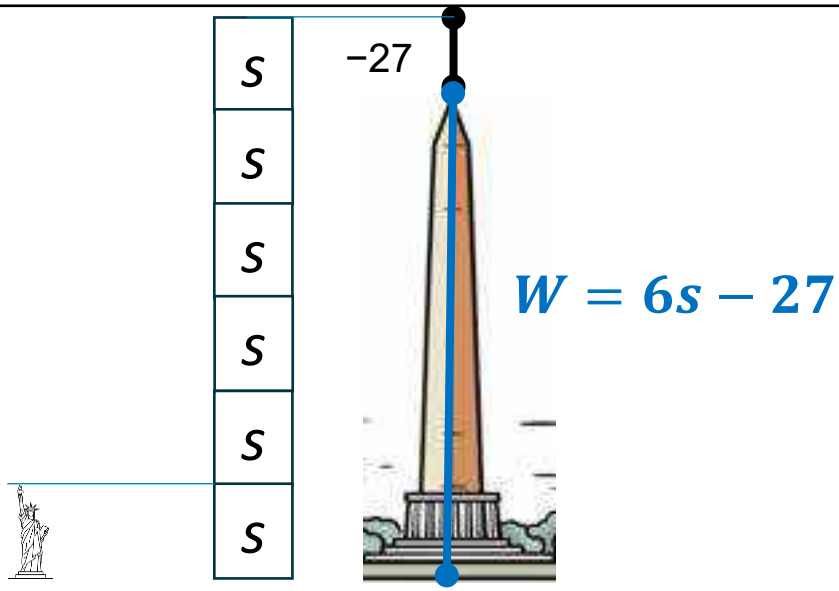
Nine dogs were playing at the park. Some more dogs ran in. Then there were 12 dogs in all. How many dogs ran in?

Read	Draw and Write
Nine dogs were playing at the park.	
Some more dogs ran in.	
Then there were 12 dogs in all.	
How many dogs ran in?	9 + ? = 12 ? = 3

GED® Released Test Item (Build Line of Reasoning)



GED® Released Test Item (Build Line of Reasoning)

Read	Draw and Write
There are *s* steps from the pedestal to the head of the Statue of Liberty.	
The Washington Monument is 27 less than 6 times the number of steps in the Statue of Liberty.	

GED® Released Test Item (Correct or Improve Lines of Reasoning)

Solve the problem using the Read – Draw – Write Strategy.

A store charges $6.96 for a case of mineral water.

- *Each case contains 2 boxes of mineral water.*
- *Each box contains 4 bottles of mineral water.*

Question:

What is the cost of each bottle of mineral water?

Students Running Out of Time

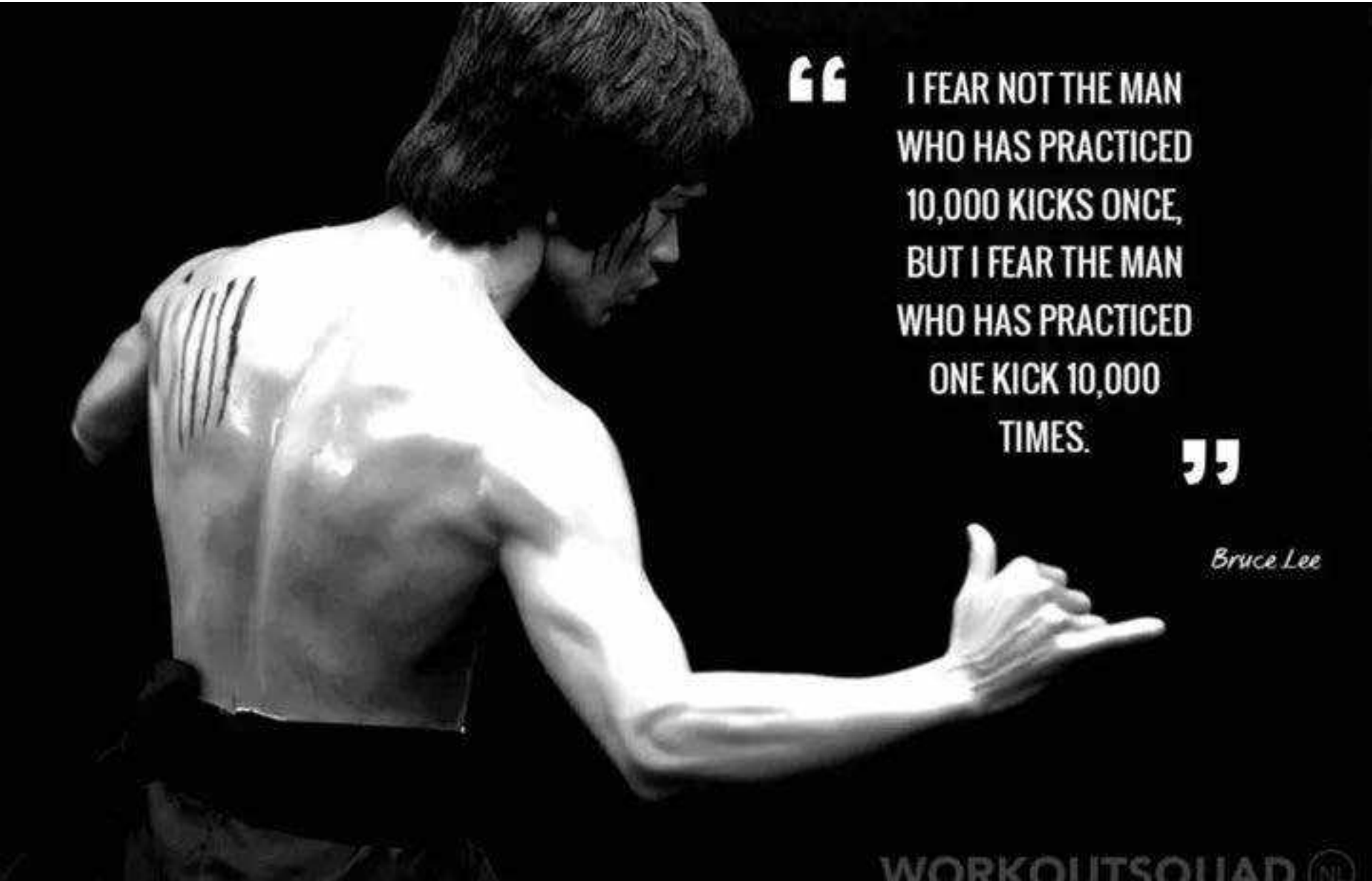
MP.4 Mathematical Fluency

M3, M4 and M6

a. Manipulate and solve arithmetic expressions.

b. Transform and solve algebraic expressions.

c. Display data or algebraic expressions graphically.

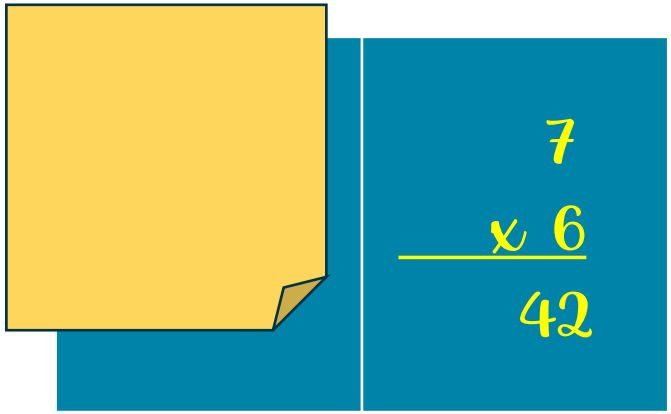

“I FEAR NOT THE MAN WHO HAS PRACTICED 10,000 KICKS ONCE, BUT I FEAR THE MAN WHO HAS PRACTICED ONE KICK 10,000 TIMES.”
Bruce Lee
WORKOUTSQUAD

Fluency Strategies

Teaching Tips:

1. Fluency activities should be brief 2-3 minutes.
2. Conduct a fluency activity daily and circle through various skills/concepts.

Cover – Copy – Compare



File Folder

	Answer
8 x 7 =	
8 x 4 =	
8 x 6 =	
8 x 9 =	

Use Technology to Enhance Fluency

Smart Math Flash Cards & Games

Taking Fluency to Whole New Level…

What's 100 times better than teaching fluency?

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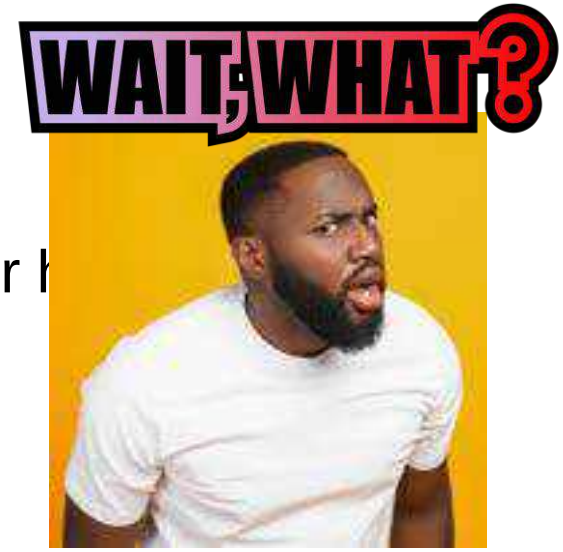
Number Sense vs. Algorithm



How would you calculate the sum below in your h

$$17 + 18$$

10 + 10 + 7 + 8

2 (17) + 1

20 + 20 – 3 – 2

17 – 2 + 2 + 18

$$\begin{array}{r} {}^{1}17 \\ +\ 18 \\ \hline 35 \end{array}$$

Relying on Algorithm is NOT Always the Most Efficient Way!

For example:

$$\begin{array}{r} 9{,}999 \\ +\ 9{,}999 \\ \hline \end{array}$$

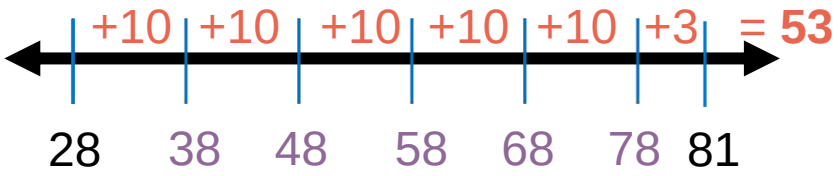
When we only focus the standard algorithm for addition, students are only practicing single digit addition.

When students are only programmed to perform a series of steps, they lose out on the opportunity to use and improve their number sense.

Building Number Sense with Subtraction

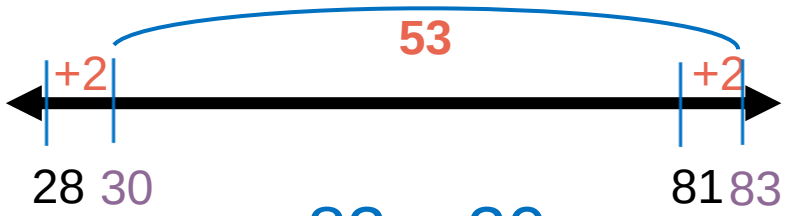
$$81 - 28 =$$

Friendly Jumps



Benchmark Numbers

Same Difference



$$83 - 30 =$$

Use the number line to build number sense and solve the following subtraction problems:

$$73 - 39 =$$

$$564 - 327 =$$

Students Making Incorrect Assumptions

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MP.5 Evaluating Reasoning and Solution Pathways

M3

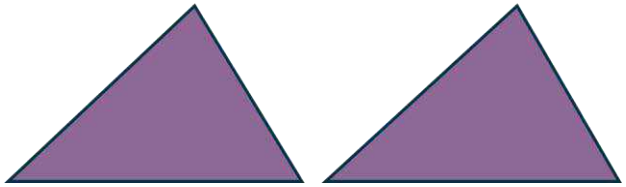
a. Recognize flaws in others' reasoning.

b. Recognize and use counterexamples.

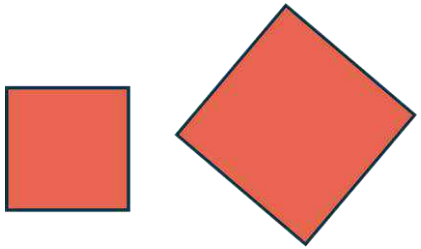
c. Identify the information required to evaluate a line of reasoning.

Cardinal Rule: DO NOT Assume!

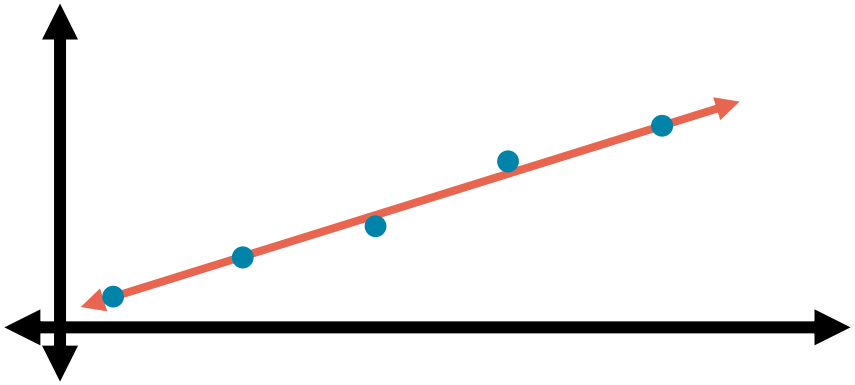
Are the triangles congruent?



Are the shapes similar?



Does the graph form a straight line?



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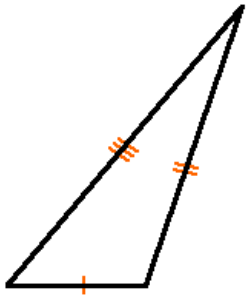
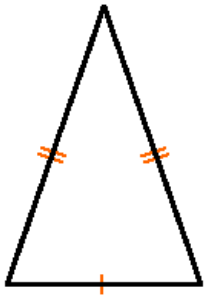
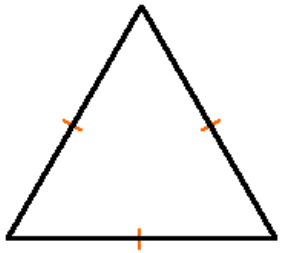
Pay Attention to Indicator Marks in Geometric Figures: Triangles



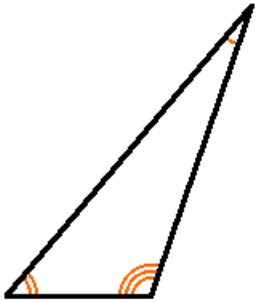
Three sides of different lengths.



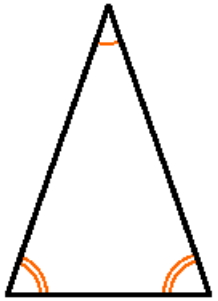
Two sides with the same length, the third side with a different length.



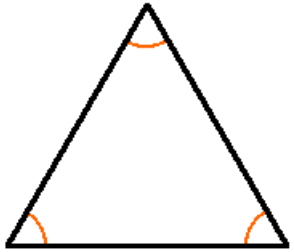
All three sides with the same length.



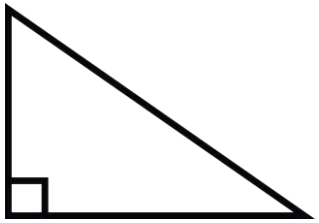
Three angles of different measures.

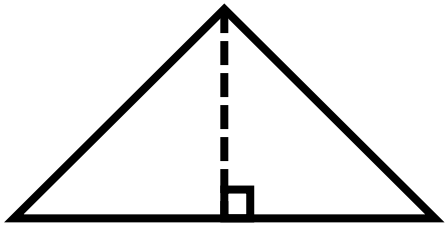


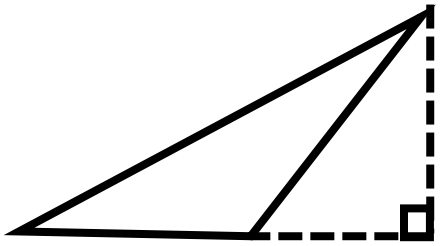
Two angles with the same measure, the third angle with a different measure.



All three angles with the same measure.

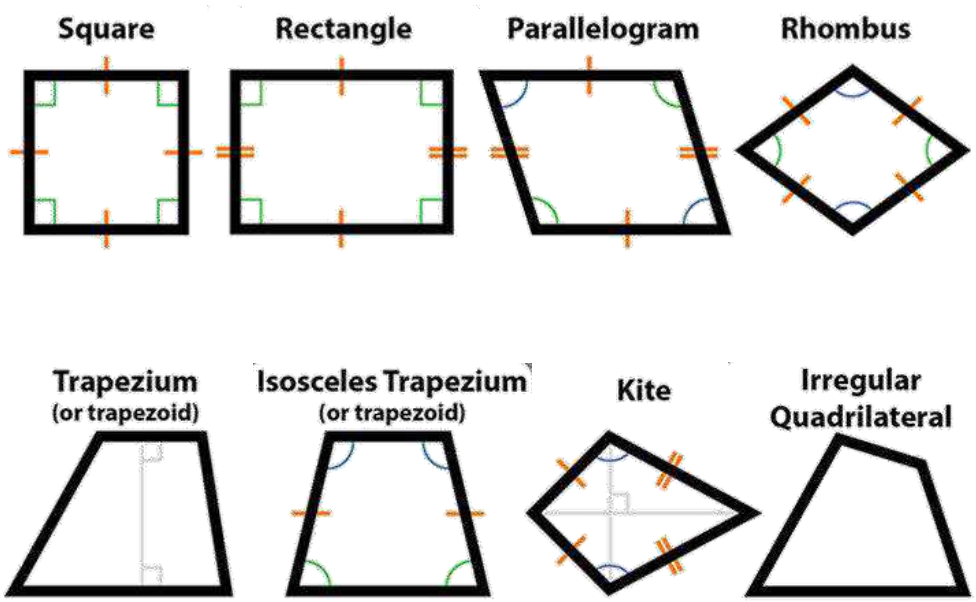


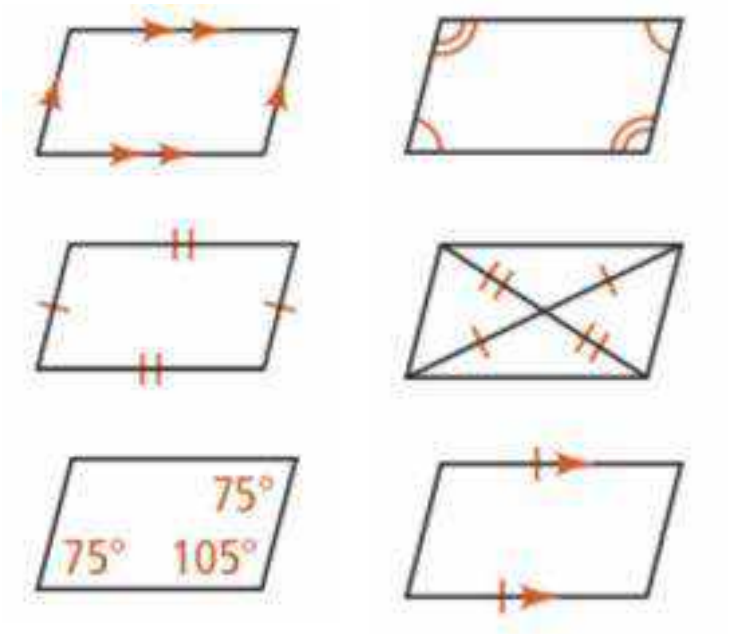




https://www.learnalberta.ca/content/memg/Division03/Triangle/Indicators/index.html

Pay Attention to Indicator Marks in Geometric Figures: Quadrilaterals





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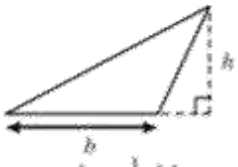
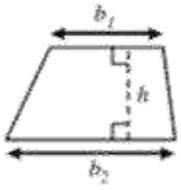
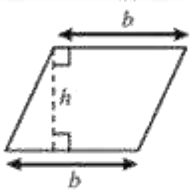
Understand Geometric Formulas



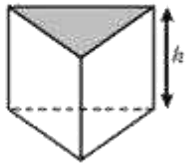
$A = \frac{1}{2}bh$



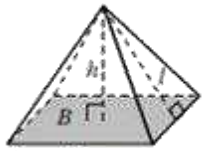
$A = \frac{1}{2}h(b_1 + b_2)$



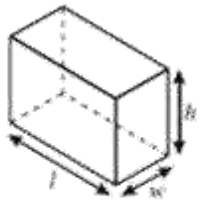
$A = bh$



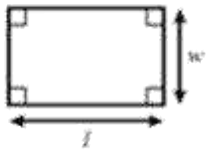
$V = Bh$
$L.A. = hp$
$S.A. = L.A. + 2B$



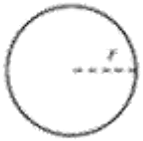
$V = \frac{1}{3}Bh$
$L.A. = \frac{1}{2}lp$
$S.A. = L.A. + B$



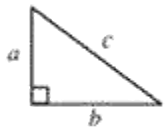
$V = lwh$
$S.A. = 2lw + 2lh + 2wh$



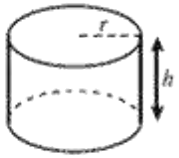
$A = lw$
$p = 2(l + w)$



$A = \pi r^2$
$C = 2\pi r$



$c^2 = a^2 + b^2$



$V = \pi r^2 h$
$L.A. = 2\pi rh$
$S.A. = 2\pi r(h + r)$

$V = \frac{4}{3}\pi r^3$
$S.A. = 4\pi r^2$

$V = \frac{1}{3}\pi r^2 h$
$L.A. = \pi rl$
$S.A. = \pi r(l + r)$

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Final Words of Advice

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Thank you!

Ronald Cruz
GED ® National Trainer
rcruz@bucketPD.com

Communicate with GED Testing Service® communications@ged.com

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How can you break the cycle of those students who score between 140 and 144?

Ann Evers and Kelly Dages

March 2024

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Introductions & Agenda

- Introductions

Ann Evers

Kelly Dages

- Background Research of the Test Mastery Coaching Program
- Adapt for GED and Research
- About the Assessment and the Program
- Pilot Study

Background Research of the Test Mastery Coaching Program

- Catalyst: "What if they scored below standards even though they knew the material?"
- Aim: Make sure high-stakes test takers understand their own competencies
- Help test takers LEVERAGE stronger competencies, while SELF-MANAGING weaker competencies

Background Research with Test Mastery Coaching Program

- Research conducted over several studies and samples

- Test Mastery coaching program has demonstrated an impact on high-stakes test pass rates for participants
  - International Psychometricians Licensure candidates:
    - 9%-12% higher for program participants
  - CPA candidates:
    - 12% - 16% higher for program participants

Background Research with Test Mastery Coaching Program

- Relationships with other Testing Outcomes
  - **Test Outcomes**: Test takers who passed the high-stakes exam on the first try ($r = .67$, $p < .001$)
  - **Cancellation Risk**: Lower self-reported risk to skip or cancel a high-stakes exam ($r = .51$, $p < .001$)
  - **Practice Tests**: Greater number of practice tests completed (self-reported; $r = .37$, $p < .01$)
  - **Test Prep Motivation**: Preference to attend courses, study books, and listen to audio messages that address test-taking strategies and study skills ($r = .31$, $p < .05$)

Adapt for GED and Research

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Why GED?

- Tool for educators to help students go beyond academic preparation
- Many students languish 140-145
- Gives educator insight and actionable points to coach students
- Alternative to repeatedly taking practice tests

GED TestPrepped Coaching Pilot & Research

Phase 1 Pilot

- Reduced assessment length to 52 items (approx. 10mins)
- Edited for accessible language
- Delivered assessment to GED students on user friendly platform (mobile friendly)
- GED branded report and self-coaching guide
- Found 40% of GED participants were below avg preparation and/or readiness

Phase 2 Learner-Centered Research

- Created a webinar (45mins)
- Recruited educators/advisors to take the webinar then interviewed them
- Learned what works and what doesn't work; make edits, show to new participant
- Observed educators/advisors interpret report with student

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Findings: Educators & Advisors

- Successfully interpreted report
- Found out new information about student
- Created a new stylized, personalized study plan based on these new soft skills
- Learned new terminology about how to communicate their gut feelings to students

Observations of Students

- Interaction
  - Focus changed from academic topics taught in classroom to beyond the classroom
- Honest conversations
  - Low scoring soft skills identified in the report led to feeling better understood
- Classroom experience vs. Testing experience
  - Test anxiety in the test center

About the Assessment and the Program

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GED TestPrepped Coaching Program

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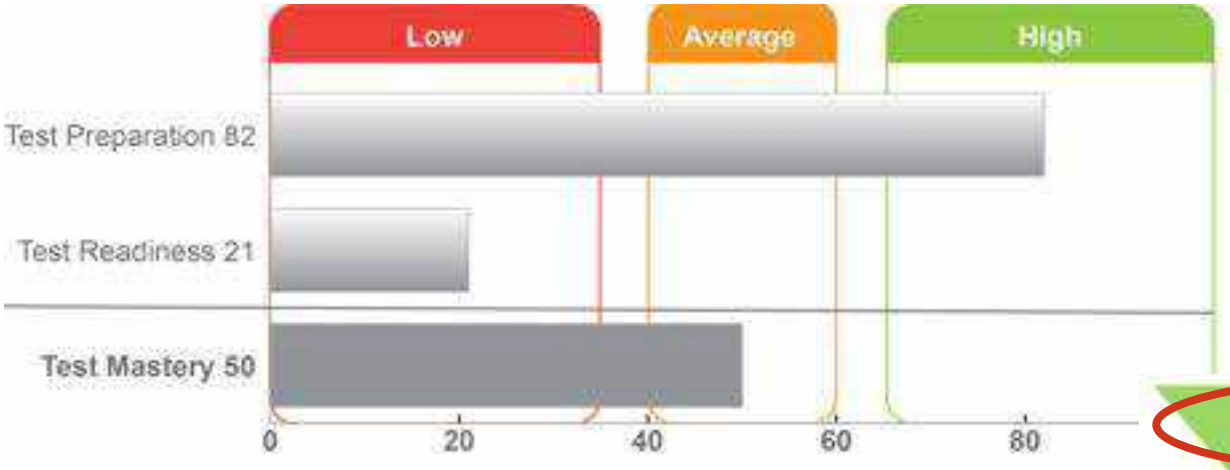
Test Mastery Mindset

GED TestPrepped Profile Reporting

Test Mastery



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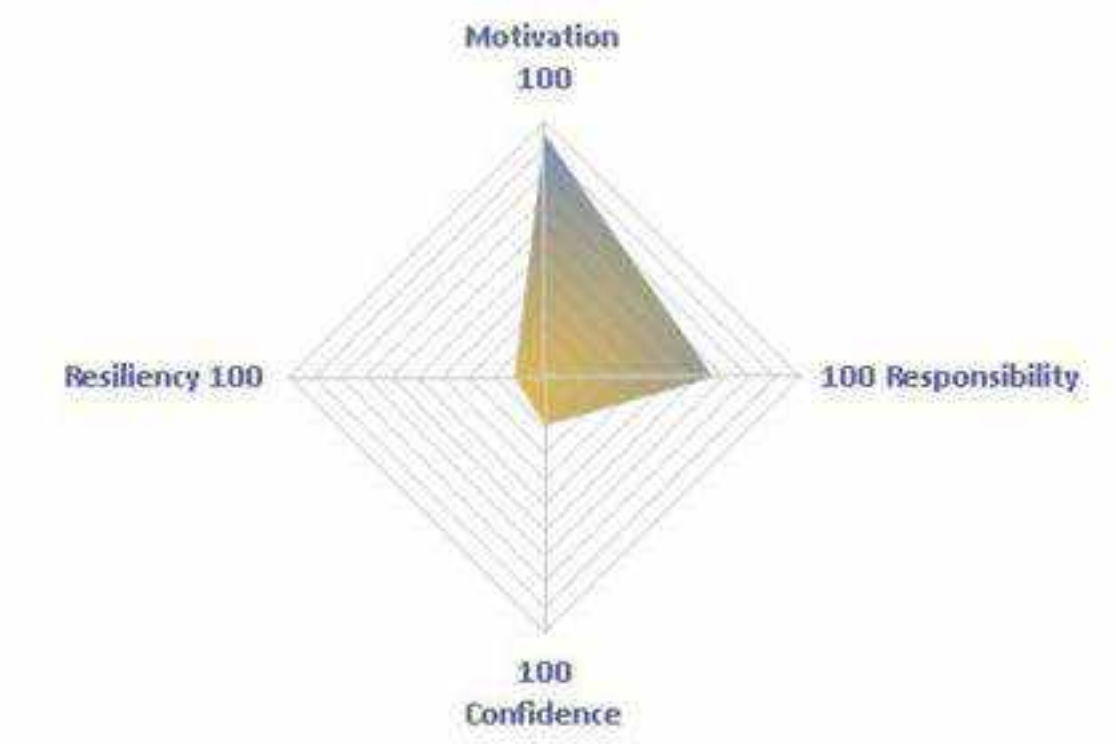
Dimensions Radar Chart



Quick Overview of Dimensions

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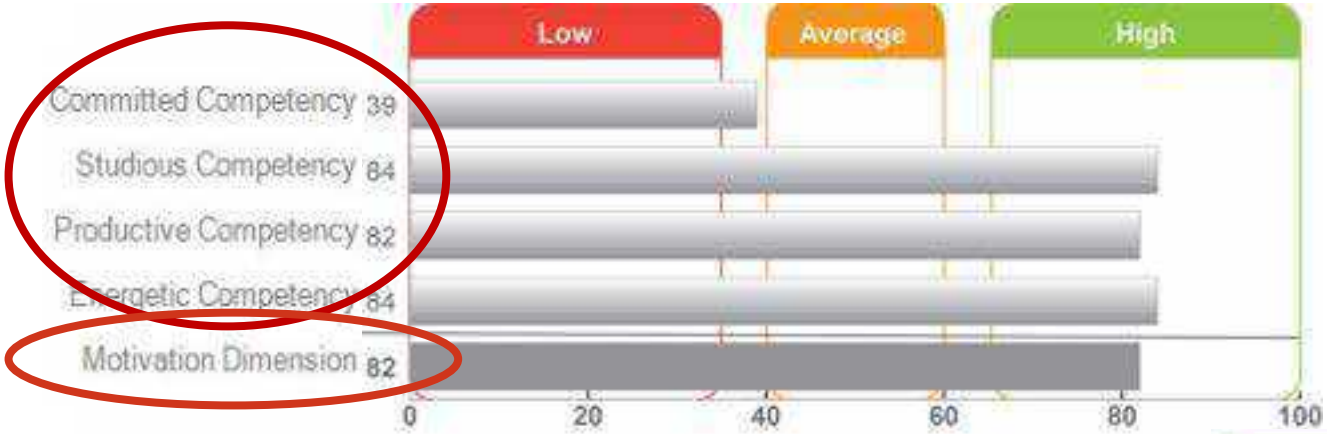
Motivation Dimension



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What Does the Score Mean?

What do your scores mean?

Committed **Score:** 39

High Score	Is highly motivated to do whatever it takes to not only pass the high-stakes exam, but to score very high on it.
Average Score	Has an acceptable amount of drive and motivation to pass the high-stakes exam and score well.
Low Score	Needs to strengthen the drive and motivation to pass a high-stakes exam at all costs and score as well as possible.
Actions	• Become fully committed to GED test preparation. • Increase your GED test preparation productivity. • Become more passionate about your need for test preparation. • Set higher standards for yourself in terms of both test preparation goals and the passing scores you aim to achieve.

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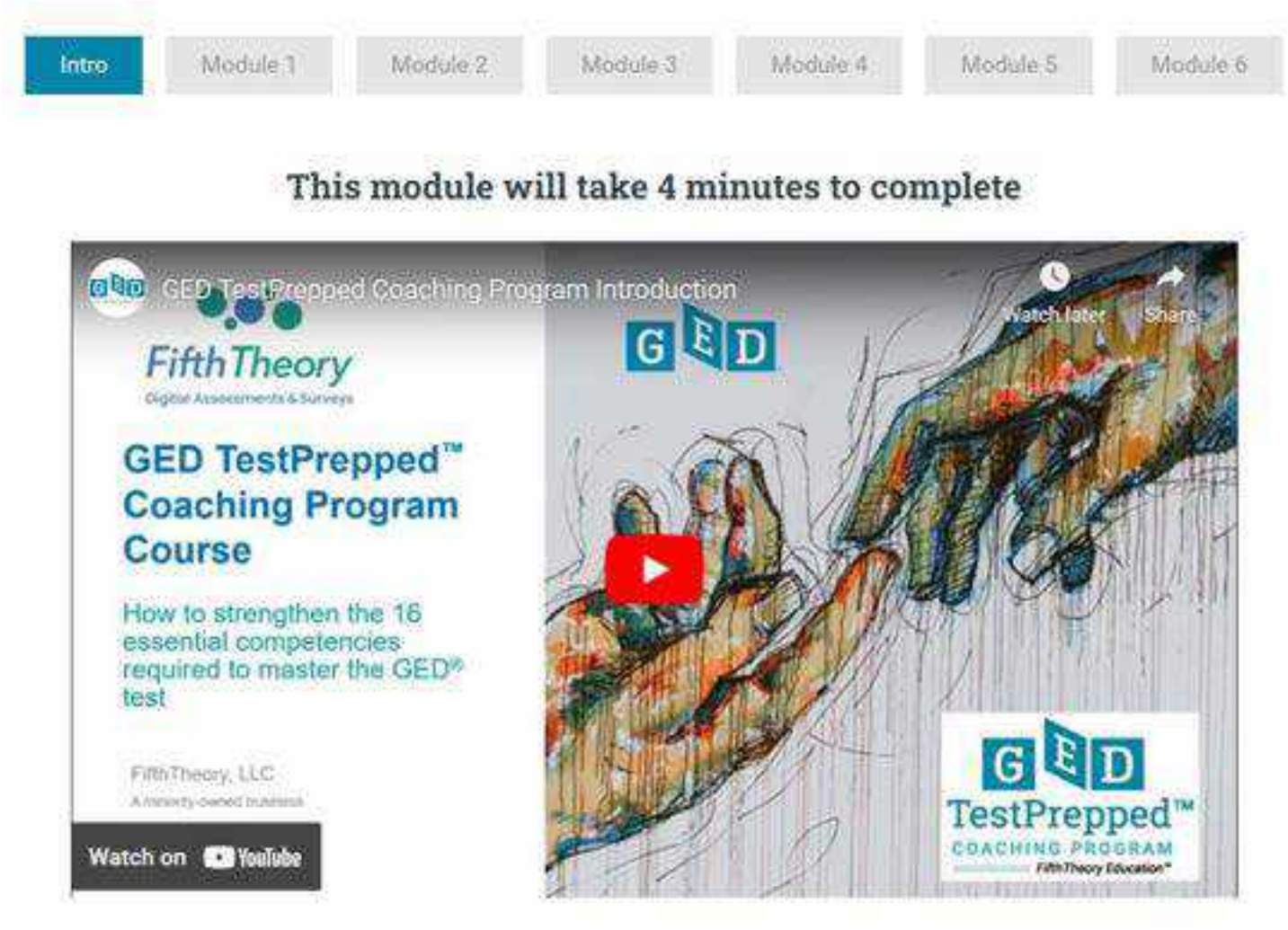
Get Started Today for Free!

Access from GED Manager
Link: https://ged.com/educators_admins/program/testprepped/

6 Modules in 45 Minutes



Simple Questions After Each Module

Downloadable Resources

Coaching Resources

There are six video modules in this course. It begins with an introductory video that provides an overview of the course. Underneath each embedded video you will find multiple choice questions to check your understanding of key concepts from each module. Your responses to the questions will not be saved. You may revisit any module at any time. The full course will take approximately 60 minutes to complete.

Linked below are key materials referenced in the videos. The materials may be downloaded and saved. These tools can help your comprehension and application of the GED TestPrepped program.

Coach's Reference Guide

Sample Student Report

Case Studies

Administration Site Instructions

Not Sure? Having Issues?

GED TestPrepped Coaching Program FAQs

About the Program

How do I as an educator get started? +

Which students do I give the assessment to? +

What kind of assessment is this? +

Technical Help

What if I forget my password for my GED TestPrepped Coaching account? +

What if I can't access my account? For example, if there is a technical issue. +

How do I access my student's report? +

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Free to Sign Up and Send Assessments

Pilot

What is the pilot?

Looking for participants to

-Take the Coaching program (45mins)

-Sign up for their free account

-Send Assessment to student (1 test per student)

-Interpret Report with student

-Create new study plan including skills identified from the Assessment

-Report student's progress

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Thank you!

Ann Evers

Sr. Test Product Development and Innovation Research Manager

Ann.Evers@GED.com

Kelly Dages

Director of Psychometric Science & Program Evaluation

Kelly.Dages@FifthTheory.com

help@ged.com

Debi.Faucette@GED.com

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