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Multiple Representations

Vocabulary

10 Ways to Practice Mathematics Vocabulary

It is imperative to emphasize mathematics vocabulary in the classroom. What follows are ideas with examples about how to practice mathematics vocabulary.

1. Teach vocabulary explicitly.
2. Use graphic organizers, like Frayer models.
3. Create math vocabulary cards.
4. Create vocabulary glossaries.
5. Create word walls.
6. Do crosswords or seek-and-finds.
7. Play memory with vocabulary terms and definitions.
8. Create an oral vocabulary routine.
9. Incorporate mathematics writing.
10. Play the Hot Seat game.

Math Glossary

Term	Definition
accurately (exactamente)	Solving a problem in a way that reaches the correct answer.
acute angle (ángulo agudo)	An angle that measures less than 90°.
add (adición)	Put together or add to.
addend (sumando)	Any numbers that are added.
addition (suma)	An operation in which amounts are put together or an amount is added on.
Additive Identity Property of 0 (Propiedad de Identidad Aditiva de 0)	The sum of any addend and zero is that addend (e.g., $7 + 0 = 7$).
additive relationship (relación aditiva)	Two quantities can be expressed as related to each other through addition.
algorithm (algoritmo)	A procedure or description of steps that can be used to solve a problem.
analog clock (reloj analógico)	A clock that shows the time by the positions of the hour and minute hands.
angle (ángulo)	A figure formed when two rays or line segments meet at a common endpoint.
area (área)	The number of square units that covers a closed shape.
array (alineación)	A set of objects, pictures, or numbers arranged in columns and rows.

Word Problems

UPS

Understand
Read and explain

Plan
How will you solve the problem?

Solve
Set up and do the math!

Check
Does your answer make sense?

Word-Problem Schemas

TOTAL
Are parts put together for a total?
 $P1 + P2 = T$

DIFFERENCE
Are two amounts compared for a difference?
 $G - L = D$

CHANGE
Does a starting amount increase or decrease to a new amount?
 $ST + C = E$ or $ST - C = E$

EQUAL GROUPS
Are there groups with an equal number in each group?
 $GR \times N = P$

SET/COMPARISON
Is a set compared a number of times?
 $S \times T = P$

Which practices should be included in professional learning?



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Fluency

Roll the Dice

$__ + __ = __$ $__ + __ = __$
 $__ - __ = __$ $__ - __ = __$
 $__ \times __ = __$ $__ \times __ = __$

Math Bingo

Your teacher will call out a math problem. Quickly solve the problem. If you have the answer on your bingo card, cover it with a chip. The middle space is free! The first person to finish the pattern your teacher decides wins! (3 in a row, 4 corners, etc.)

	3	24		80
15		42	16	20
8	35		6	4
	2	40	27	7
50	10	30	48	

Math Fact Fluency Activities

What are examples of fluency activities and games teachers can use to help students?

The table below provides examples of fluency-related games and activities that teachers can introduce to help students improve their fluency skills. During any fluency game or activity, students should practice small sets of facts that include known and unknown facts.

Activity	Instructions	Picture
BEACH BALL MATH Group Activity 	Before 1. Write sums, differences, products, or quotients on a beach ball. During 1. A student tosses the beach ball to another student. 2. The student has to add, subtract, multiply, or divide the two numbers closest to each thumb. 3. The student tosses the beach ball to another student.	 https://saddleleafor2ndgrad.com/beach-ball-ma/
BINGO Group Activity 	Before 1. Create bingo cards with sums, differences, products or quotients or facts. During 1. Read an addition, subtraction, multiplication, or division fact. 2. Students cover spaces with chips or counters to create a bingo pattern.	 https://www.math-drills.com/multiplication/multiplication_bingo_facts_1to2_0_01ahe