



Best Practices in Math: Modeling, Practice, and Word Problems

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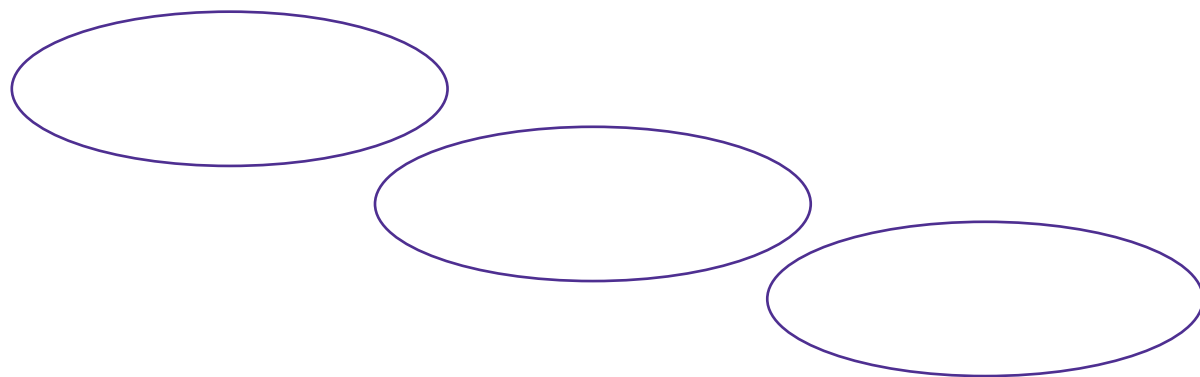
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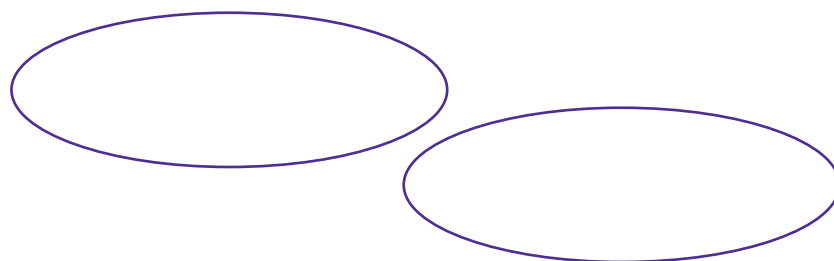
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Instructional Platform

Instructional Delivery



Instructional Strategies



Explicit Instruction

Research and Information

What are your strengths?

What are your opportunities for growth?

What are your immediate next steps?

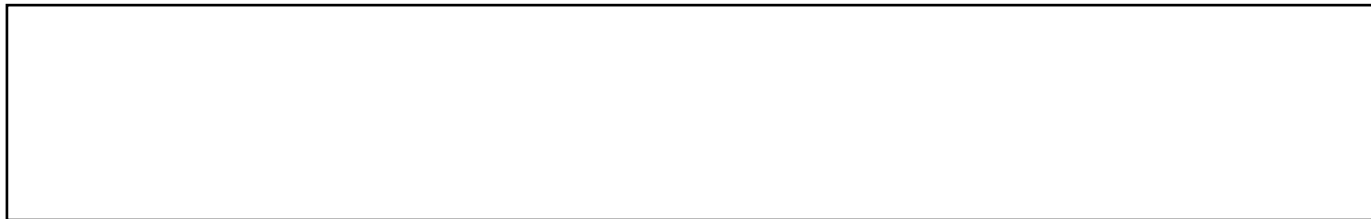
Explicit Instruction

MODELING

PRACTICE

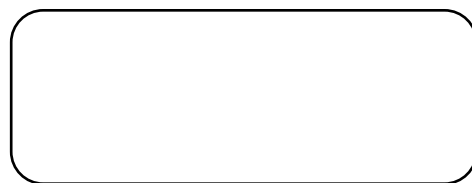
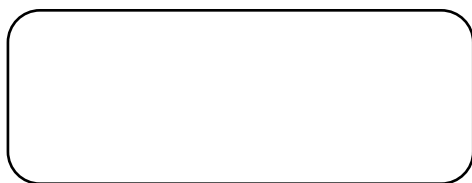
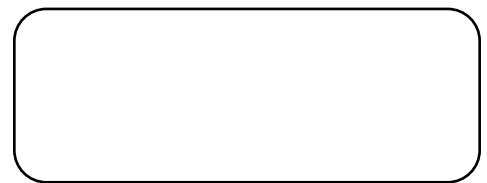

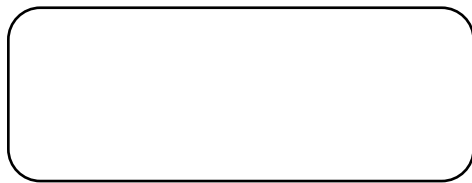
SUPPORTS

Explicit Instruction

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Word-Problem Solving

Research and Information



Word-Problem Solving

SOLVE

- Study the problem.
- Organize the facts.
- Line up the plan.
- Verify the plan with computation.
- Examine the answer.

R-CUBES

- Read the problem.
- Circle key numbers.
- Underline the question.
- Box action words.
- Evaluate steps.
- Solve and check.

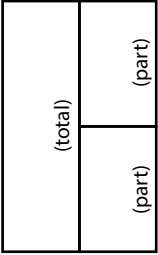
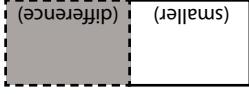
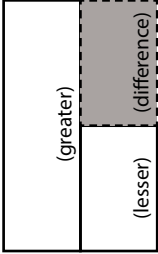
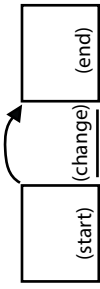
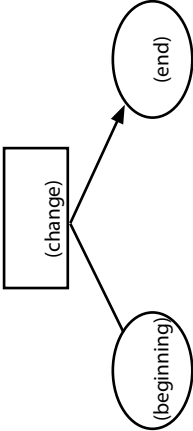
UPS✓

UNDERSTAND
Read and explain.

PLAN
How will you solve the problem?

SOLVE
Set up and do the math!

✓**C**HECK
Does your answer make sense?

Schema and Definition	Equations and Graphic Organizers	Examples	Variations
<p>Total (Combine; Part-part-whole)</p> <p>Parts combined for a sum</p>	<p>$P1 + P2 = T$ (part + part = total)</p> 	<p>Sum unknown: Lyle has 11 red apples and 18 green apples. How many apples does Lyle have altogether?</p> <p>Part unknown: Lyle has 29 red and green apples. If 11 of the apples are red, how many green apples does Lyle have?</p>	<p>More than two parts: Lyle has 34 apples. Of the apples, 11 are red, 18 are green, and the rest are yellow. How many yellow apples does Lyle have?</p>
<p>Difference (Compare) Sets compared for a difference</p>	<p>$B - s = D$ (bigger - smaller = difference)</p>  <p>$G - L = D$ (greater - less = difference)</p> 	<p>Difference unknown: Sasha wrote 85 words in her essay, and Tabitha wrote 110 words. How many fewer words did Sasha write than Tabitha?</p> <p>Bigger/greater unknown: Tabitha wrote 25 more words than Sasha. If Sasha wrote 85 words, how many words did Tabitha write?</p> <p>Smaller/lesser unknown: Tabitha wrote 110 words in her essay. Sasha wrote 25 words fewer than Tabitha. How many words did Sasha write?</p>	<p>(None)</p>
<p>Change (Join; Separate)</p> <p>An amount that increases or decreases</p>	<p>$ST +/ - C = E$ (start +/- change = end)</p>  	<p>End (increase) unknown: Jorge had \$52. Then, he earned \$16 babysitting. How much money does Jorge have now?</p> <p>Change (increase) unknown: Jorge had \$52. Then, he earned some money babysitting. Now, Jorge has \$68. How much did Jorge earn babysitting?</p> <p>End (decrease) unknown: Jorge had \$52. Then, he spent \$29 at the ballpark. How much money does Jorge have now?</p> <p>Change (decrease) unknown: Jorge had some money. Then, he spent \$29 at the ballpark and has \$23 left. How much money did Jorge have before going to the ballpark?</p> <p>Start (increase) unknown: Jorge has some money, and then he earned \$16 for babysitting. Now, Jorge has \$68. How much money did he have to start with?</p> <p>Start (decrease) unknown: Jorge had some money. Then, he spent \$29 at the ballpark and has \$23 left. How much money did Jorge have before going to the ballpark?</p>	<p>Multiple changes: Jorge had \$78. He stopped and bought a pair of shoes for \$42 and then he spent \$12 at the grocery. How much money does Jorge have now?</p>

Schema and Definition	Graphic Organizers	Examples	Variations
<p>Equal Groups (Vary)</p> <p>A number of equal sets or units</p>	<p>$GR \times N = P$</p>	<p>Product unknown: Maria bought 5 cartons of eggs with 12 eggs in each carton. How many eggs did Maria buy?</p> <p>Groups unknown: Maria bought 60 eggs. The eggs were sold in cartons with 12 eggs each. How many cartons of eggs did Maria buy?</p> <p>Number unknown: Maria bought 5 cartons of eggs for a total of 60 eggs. How many eggs were in each carton?</p>	<p>With rate: Maria bought 5 cartons of eggs. Each carton cost \$2.95. How much did Maria spend on eggs?</p>
<p>Comparison</p> <p>One set as a multiple or part of another set</p>	<p>$S \times T = P$</p>	<p>Product unknown: Malik picked 7 flowers. Danica picked 3 times as many flowers. How many flowers did Danica pick?</p> <p>Set unknown: Danica picked 3 flowers as many flowers as Malik. If Danica picked 21 flowers, how many flowers did Malik pick?</p> <p>Times unknown: Malik picked 7 flowers. Danica picked 21 flowers. How many times more flowers did Danica pick?</p>	<p>With fraction: Malik picked 25 red and yellow flowers. If 1/5 of the flowers were yellow, how many were red?</p>
<p>Ratios/ Proportions</p>		<p>Subject unknown: Sally typed 56 words in 2 minutes. How many words could Sally type in 7 minutes?</p> <p>Object unknown: Sally typed 56 words in 2 minutes. How many minutes would it take Sally to type 192 words?</p> <p>Base unknown: Justin baked cookies and brownies. The ratio of cookies to brownies was 3:5. If he baked 15 cookies, how many brownies did he bake?</p> <p>Compared unknown: Justin baked cookies and brownies. The ratio of cookies to brownies was 3:5. If he baked 25 cookies, how many brownies did he bake?</p> <p>Ratio unknown: Justin baked 15 cookies and 25 brownies. What's the ratio of cookies to brownies?</p>	<p>With percentage: Watson received an 80% on his science quiz. If the test had 40 questions, how many questions did Watson answer correctly?</p> <p>With unit rate: Paula bought 5 boxes of markers. She spent \$9.75. What is the price of one box of markers?</p>

Word-Problem Solving

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