

Problem Solving Strategy Sheets

Problem Solving Strategy Sheets help you teach your students the techniques, strategies, and organizational skills needed for solving word problems. The prepared sheets are designed to give you classroom-tested procedures which will help your students master these essential strategies.

<u>Title</u>	<u>Strategy Sheet</u>
Five Step Plan	1
Uses for Subtraction	2
Which Operation do I Use?	3, 7, 10, 12
Estimating Sums and Differences	4 - 5
Making Change	6
Checking Addition/Multiplication	8 - 9
Uses for Division	11
Modular Arithmetic	13
Conversion Process	14 - 21
Perimeter and Area	22 - 23
Averages	24
Estimating Products	25
Multiply Money and Decimals	26
Ratio and Proportion	27
Equivalent Fractions	28
Percentage	29
Probability	30

Problem Solving Strategies 1

Five Step Plan

Step 1. Read the problem.

Step 2. Make a plan.

Step 3. Write a number sentence.

Step 4. Find the answer.

Step 5. Check the answer.

Example: Five Step Plan

Penny has 6 bird stamps. Jim has 8 bird stamps. How many stamps do they have in all?

Step 1. Read the problem. What does it ask?	To find how many in all.
Step 2. Make a plan. What do you need to do?	You need to add.
Step 3. Write a number sentence.	$6 + 8 = ?$
Step 4. Find the answer.	$6 + 8 = 14$
Step 5. Check the answer.	Add the other way. $8 + 6 = 14$

Step 1. Read the problem. What does it ask?	
Step 2. Make a plan. What do you need to do?	
Step 3. Write a number sentence.	
Step 4. Find the answer.	
Step 5. Check the answer.	

Problem Solving Strategies 23

Area of Rectangles

Find the area of a rectangle with a length of 5 inches and a width of 3 inches.

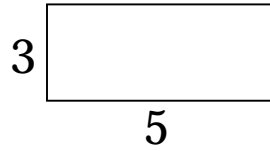
Procedure:

The area of any rectangle is its length multiplied by its width.

The formula is: $A = lw$

(Area is always expressed in square units.)

1. Draw a diagram.



2. Label the length and width.

3. Multiply the length by the width.

Area (rectangle) = 5 in. x 3 in.

Area of the rectangle = 15 sq. in.

Practice: Area of Rectangle Problems

Diagram	Calculation
	$A = lw$ $A = (\quad) (\quad)$ $A = \underline{\quad}$

Diagram	Calculation
	$A = lw$ $A = (\quad) (\quad)$ $A = \underline{\quad}$

Problem Solving Strategies 25

Estimating Products

Procedure:

1. Round each number to its greatest digit.	$\begin{array}{r} 5,782 \\ \times 543 \\ \hline \end{array}$	$\begin{array}{r} 6,000 \\ \times 500 \\ \hline \end{array}$
2. Count the zeros in both numbers. Enter them in the answer.	5 zeros	00000
3. Multiply the non-zero numbers . Enter the product in your answer.	$6 \times 5 = 30$	3000000
4. Enter the commas in your answer.		3,000,000

Practice: Estimating Products

Problem Solving Strategies 28

Equivalent Fractions

- Equivalent fractions have the same ratios.
- Solve problems with equivalent fractions the same way that you solve problems involving proportions.

Procedure:

1. Set up the chart as shown, entering the numbers in the appropriate sections.
2. Cross multiply and solve for the variable.

Equivalent Fractions - Chart

Problem: $2/7 = ?/28$

Part	Part
2	x
7	28
Whole	Whole

$$7x = 56$$

$$x = 8$$

Part	Part
Whole	Whole

Part	Part
Whole	Whole

Problem Solving Strategies 30

Probability

- Probability is a fraction.
- The number of desired events is the numerator.
- The number of possible events is the denominator.

Example:

- What is the probability of picking a red marble from a bag that contains 3 red marbles, 3 green marbles, and 3 white marbles?

- | | |
|--------------------------------------------------------------------------------|-----------------------------|
| 1. The number of desired events is the numerator.
(There are 3 red marbles) | $\frac{3}{9} = \frac{1}{3}$ |
| 2. The number of possible events is the denominator.
(There are 9 marbles) | |
| 3. Reduce the fraction if possible. | |

Probability - Chart

Desired	Desired	Desired	Desired
Possible	Possible	Possible	Possible

Desired	Desired	Desired	Desired
Possible	Possible	Possible	Possible