Problem Solving Strategies

TEKS 8.14.C

The following are strategies that you can use to solve problems.

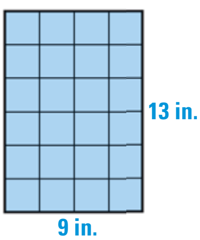
Strategy	When to use	How to use
Draw a diagram	Draw a diagram when a problem involves any relationships that you can represent visually.	Draw a diagram that shows the given information. Label any unknowns in your diagram and look for relationships between givens and unknowns.
Look for a pattern	Look for a pattern when a problem includes a series of numbers or diagrams that you need to analyze.	Look for a pattern in any given information. Apply, extend, or generalize the pattern to help you solve the problem.
Guess, check, and revise	Guess, check, and revise when you need a place to start or you want to see what happens for a particular number.	Make a reasonable guess. Check to see if your guess solves the problem. If it does not, revise your guess and check again.
Act it out	Act out a problem that involves any relationships that you can represent with physical objects and movement.	Act out the problem, using objects described in the problem or other items that represent those objects.
Make a list or table	Make a list or table when you need to record, generate, or organize information.	Generate a list systematically, accounting for all possibilities. Look for relationships across rows or down columns within a table.
Solve a simpler or related problem	Solve a simpler or related problem when a problem seems difficult and can be made easier by using simpler numbers or conditions.	Think of a way to make the problem easier. Solve the simpler or related problem. Use what you learned to help you solve the original problem.
Work backward	Work backward when a problem gives you an end result and you need to find beginning conditions.	Work backward from the given information until you solve the problem. Work forward through the problem to check your answer.
Break into parts	Break into parts when a problem cannot be solved all at once, but can be solved in parts or stages.	Break the problem into parts and solve each part. Put the answers together to help you solve the original problem.

EXAMPLE **Fletcher baked brownies in a rectangular pan that measures 9 inches by 13 inches. He wants to cut rectangular brownies that are at least 2 inches on each side, with all brownies the same size. What is the greatest number of brownies Fletcher can cut?**

Draw a diagram of the rectangular pan. Label the sides with their lengths. Think about each side of the rectangle.

$9 \div 2 = 4.5$, so cut 4 brownies along the 9 inch side.
Check: $9 \div 4 = 2.25$, and $2.25 > 2$.

$13 \div 2 = 6.5$, so cut 6 brownies along the 13 inch side.
Check: $13 \div 6 \approx 2.17$, and $2.17 > 2$.



Use your diagram to count the brownies: $4 \times 6 = 24$.

▸ The greatest number of brownies Fletcher can cut is 24.