

# Strategy Classification

EQ: How do I determine which strategy to use to start solving a problem?

Do not solve the problems, just understand and plan.

- 🔗 Choose a problem.
- 🔗 Identify the problem solving strategies you could use to start the problem.
- 🔗 Explain why you would use these strategies. What about the problem made you think to use these strategies?
- 🔗 Choose another problem and repeat the processes. Try to select a problem that would different strategies.
- 🔗 Goal: Articulate why and how specific strategies help solve certain types of problems.

Problem Title	Source	Possible Strategies
Area/Perimeter	Classic problem	
Cell Phone Texting Plans	CMC ComMuniCator	
Currency	Pearson	
Deer	Holt	
Designing a Box	Math Assessment Project	
Handful of Coins	Classic problem	
Lanterns	Pearson	
Monkeys	Unknown	
Ring the bell	Pearson	
Snail Pace	Mathematics Assessment Resource Service (MARS)	
Who is youngest?	Pearson	

- 🔗 Act it out/use objects
- 🔗 Draw a diagram/picture
- 🔗 Make a graph
- 🔗 Look for a pattern
- 🔗 Write an equation
- 🔗 Solve a simpler problem

- 🔗 Try, check, revise
- 🔗 Make an organized list
- 🔗 Work backward
- 🔗 Make a table
- 🔗 Do something

# Strategy Classification

## Deer

There are 360 deer in a forest. The population each year is 10% more than the previous year. How many deer will there be after 3 years? 5 years?

## Ring the Bell

Every 42 minutes, a bell rings to indicate it is time to change classes. If the school day is 6 hours long, how many classes are held each day?

## Who is youngest?

Mary is older than Henry and younger than Jean. Mary is younger than Karen. Jean is older than Tom and younger than Mark. Tom is older than Mary. Who is the youngest?

## Lanterns

Jackie sold three times as many lanterns in the first hour as in the second hour. She sold 84 more lanterns in the second hour than in the third hour. She sold her last 29 lanterns in the third hour. How many lanterns did Jackie sell in all?

## Currency

Many countries have their own form of money. The United States uses the *dollar*. The European country of Lithuania uses *litas*. In September of 2001, 4 litas were equal to \$1. How many litas were equal to \$7?

## Design a Box

You work for a design company and have been asked to design a box that will hold 18 mints. Each mint is 2 cm in diameter and 1 cm thick. The box must be made from a single sheet of cardstock with as little cutting as possible. How should the box be designed?

## Handful of Coins

Sam has a handful of nickels and dimes. He has six more nickels than dimes, and the whole bunch is worth \$1.50. How many total coins does Sam have?

## Area/Perimeter

The area of a rectangle is 24 square inches. Its length and width are natural numbers. Find the rectangle with the least possible perimeter.

## Cell Phone Texting Plans

Paula received her cell phone bill for July, August, and September, which came to a grand total of \$242. Shocked with the outrageous price, she wanted to find out how much she was being charged per text. So she called the customer service line and the information she received still did not tell her how much each text costs. The representative did tell her that in July she had 620 texts at a total cost of \$97. In August she had 450 texts at a total cost of \$80. And finally in September she had 300 texts and was charged \$65.

How much is the base rate that Paula pays? How much does she pay for each text under this plan?

# Strategy Classification

This is NOT an answer key, it is a “possible list”, if someone can justify the use of a specific strategy, great. The strategies are generally listed in order of usefulness to make sense of the problem, not necessarily in order based on the most efficient strategy. Grade levels are approximate. Strategies applied will depend on content knowledge of students.

Problem Title	Source	Possible Strategies	Grades
Area/Perimeter	Classic problem	Act it out; Diagram (use grid paper); Simpler problem; Try, check, revise; Organized list; Table; Pattern; Graph	3 <sup>rd</sup>
Cell Phone Texting Plans	CMC ComMuniCator	Try, check, revise; Simpler problem; Diagram; Equation; Table	6 <sup>th</sup> /7 <sup>th</sup>
Currency	Pearson	Table; Pattern; Act it out; Diagram; Equation	3 <sup>rd</sup>
Deer	Holt	Simpler problem; Table; Pattern; Diagram	6 <sup>th</sup>
Designing a Box	Math Assessment Project	Act out; Diagram; equation(s); Simpler problem; Organized list	5 <sup>th</sup>
Handful of Coins	Classic problem	Act it out; Diagram; Simpler problem; Try, check, revise; Organized list; Work backward; Table; Pattern; Equation	2 <sup>nd</sup> /3 <sup>rd</sup>
Lanterns	Pearson	Work backward; Simpler problem; Table; Act it out; Diagram; Try, check, revise; Equation(s)	4 <sup>th</sup>
Monkeys	Unknown	Work backward; Simpler problem; Act it out; Diagram; Try, check, revise; Table; Equation	5 <sup>th</sup>
Ring the bell	Pearson	Diagram; Simpler problem; Act it out; Try, check, revise; Work backward; Table; Pattern; Equation; Graph	4 <sup>th</sup>
Snail Pace	Mathematics Assessment Resource Service (MARS)	Table; Pattern; Equation; Graph; Act it out; Diagram; Simpler problem	6 <sup>th</sup>
Who is youngest?	Pearson	Act it out; Diagram; Simpler problem; Try, check, revise	2 <sup>nd</sup>