Problem-Solving Strategy: Make a Table or List

One strategy for solving problems is to **make a table**. A table allows you to organize information in an understandable way.

Personal Tutor

Example 1

A fruit machine accepts dollars, and each piece of fruit costs 65 cents. If the machine gives only nickels, dimes, and quarters, what combinations of those coins are possible as change for a dollar?

The machine will give back \$1.00 − \$0.65 or 35 cents in change in a combination of nickels, dimes, and quarters.

Make a table showing different combinations of nickels, dimes, and quarters that total 35 cents. Organize the table by starting with the combinations that include the most quarters.

quarters	dimes	nickels
1	1	0
1	0	2
0	3	1
0	2	3
0	1	5
0	0	7

The total for each combination of the coins is 35 cents. There are 6 combinations possible.

A similar strategy is to **list possibilities**. When you make a list, use an organized approach so you do not leave out important items.

Example 2

How many ways can you receive change for a quarter if at least one coin is a dime?

List the possibilities. Start with the ways that use the fewest number of coins.

1. dime, dime, nickel
2. dime, dime, 5 pennies
3. dime, nickel, nickel, nickel
4. dime, nickel, nickel, 5 pennies
5. dime, nickel, 10 pennies
6. dime, 15 pennies

There are 6 possibilities.