Name _____ Date _____

LESSON 1.4

Investigating Algebra Activity: Translating Verbal Sentences

For use before the lesson "Write Equations and Inequalities"

Materials: paper and pencil

QUESTION **How can you write an equation from a given statement?**

EXPLORE **Design a garden**

You have entered a contest to design a rectangular garden for a local organization. There are strict guidelines which must be followed. Write an algebraic sentence for each guideline.

- The perimeter P of the garden is 2 times the length ℓ plus 2 times the width w.
- The length ℓ is 4 feet more than the width w.
- The number of rows r of seeds is the number of columns c decreased by 4.
- You must put a fence around the garden. The amount of fencing f needed is the perimeter P minus 3 feet for a gate.

STEP 1 Use key words and variables
Identify the key words and variables in the verbal sentence. For example, in the first guideline, you will need to use the variables P, ℓ, and w. You will also use the operators $\times$ (times), $+$ (plus), and $=$ (is).

STEP 2 Write algebraic sentence
The algebraic sentence for the first guideline is $P = 2\ell + 2w$.

DRAW CONCLUSIONS **Use your observations to complete these exercises**

1. Write an algebraic sentence for each of the remaining guidelines.
2. You want the width of the garden to be 10 feet. Draw and label a diagram of the garden with its length and width.
3. You have \$25 for fencing and the fencing costs \$.60 per foot. Will you have enough money to buy the fencing?
4. Each row is one foot wide with another foot separating two rows. There is also 0.5 foot separating the end rows from the fence. How many rows will you have? The columns stretch the length of the rectangle. Will you be able leave 1 foot between each column as well? If so, draw and label a diagram of your garden.