A Letter for Each Unknown

MV01-V1 · storyboard · MV01 Write expressions with several letters. Read each picture with its sentences.

Picture 1

Flip buys 5 sacks of apples and 4 sacks of oranges.

$x = \text{apples in a sack}$ one unknown

$y = \text{oranges in a sack}$ a new letter

$\boxed{5x + 4y}$ two terms

1. Flip buys five sacks of apples and four sacks of oranges.
2. How many pieces of fruit does he have?
3. Let x be the number of apples in a sack.
4. The oranges in a sack are a different unknown, so they get a new letter: let y be the number of oranges in a sack.
5. Five sacks of x and four sacks of y: 5x + 4y pieces of fruit.

Picture 2

Trap 5 sacks of x, 4 sacks of y

$\times\ 5x + 4x = 9x$

$\checkmark\ \ 5x + 4y$

6. Watch for the trap: one letter for two unknowns.
7. Using x for both says the sacks hold the same number, which nobody told us.
8. Two unknowns, two letters.

Picture 3

"Three times the sum of x and y is four more than four times x."

$3(x + y)$ the sum in brackets

$\boxed{3(x + y) = 4 + 4x}$ "is" means $=$

9. Now Captain Hook's riddle: three times the sum of x and y is four more than four times x.
10. Three times the sum: the sum goes in a bracket, 3(x + y).
11. Is means equals, and four more than four times x is 4 + 4x.

Picture 4

Trap $3 \times (x + y)$

$\times$ $3x + y$

✓ $3(x + y)$

12. Watch for the trap: dropping the bracket.
13. Three times the sum is not 3x + y.
14. The three multiplies the whole sum: 3(x + y).