

How Do Plants Get Food for their Growth?

A. Complete the sentences with the correct mathematical term.

1. A letter used to represent an unknown number is called a _____.
2. In the term $8x$, the number 8 is the _____.
3. Terms that have the same variable part raised to the same power are called _____ terms.
4. A term without a variable, such as 15, is called a _____.
5. To find the value of an expression, we _____ a number for the variable.

B. Match the term in Column A with the best example or definition in Column B.;

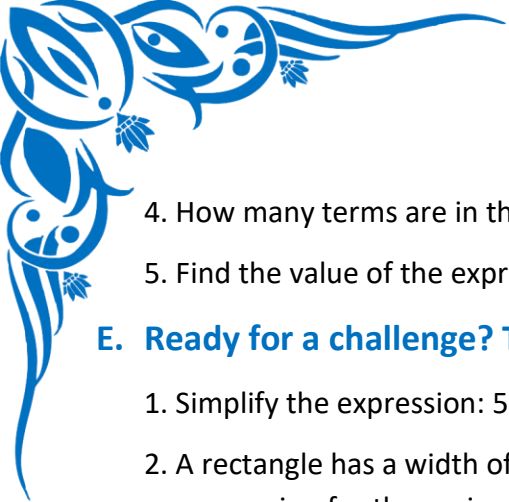
Column A (Structure)	Column B (Function)
1. Variable	A. $5x$, $-2y$, 10
2. Constant	B. A number, a variable, or the product of a number and one or more variables.
3. Coefficient	C. The letter m in $4m - 9$
4. Expression	D. The number 7 in $2x + 7$
5. Term(s)	E. The number 5 in $5y$
	F. $3a + 2b - 1$

C. Now let's practice the core skills. Simplify, evaluate, and write expressions.

1. Write an expression for "the product of 9 and a number y , decreased by 3".
2. Simplify the following expression by combining like terms: $8x + 4y - 3x + 2y$
3. Evaluate the expression $5c - 9$ when $c = 6$.
4. Expand the expression using the distributive property: $4(a + 7)$
5. Evaluate the expression $2m + 5n$ when $m = 8$ and $n = -2$.

D. Get your brain working with these quick questions!

1. In the expression $7a + 4$, what is the variable?
2. In the expression $x - 10$, what is the constant?
3. Write an expression for "a number n increased by 5".



4. How many terms are in the expression $3y + 2z - 8$?

5. Find the value of the expression $p + 8$ if $p = 12$.

E. Ready for a challenge? These problems require multiple steps and deeper thinking.

1. Simplify the expression: $5(2x - 3y) - 2(3x + 4y)$

2. A rectangle has a width of w cm. Its length is 5 cm more than twice its width. Write a simplified expression for the perimeter of the rectangle.

3. Factor the following expression by finding the greatest common factor: $18x + 24y$

4. Evaluate the expression $(a + b)^2 - 2c$ when $a = 4$, $b = -1$, and $c = 3$.

5. Simplify: $\frac{1}{2}(8x - 6) + \frac{1}{3}(9x + 12)$

F. Apply your knowledge to real-world scenarios.

1. A pizza costs \$14. Each additional topping costs t dollars. Write an expression for the total cost of a pizza with 4 toppings.

2. Maria is y years old. Her brother, Sam, is 3 years younger. Her mother is twice as old as Maria. Write a simplified expression for the sum of all their ages.

3. You buy p pens for 2 each and n notebooks for 2 each and n notebooks for 4 each. Write an expression for the total amount of money you spend.

4. The temperature was d degrees Celsius. It then dropped by 5 degrees, and then it doubled. Write an expression to represent the new temperature.

5. A gym membership costs 25 per month, plus a one-time sign-up fee of 25 per month, plus a one-time sign-up fee of 50. Write an expression for the total cost of a membership for m months.

G. True or False

1. $3x + 5y = 8xy$

2. The expression $4(a - 3)$ is equivalent to $4a - 3$.

3. In the expression $y + 6$, the coefficient of y is 0.

4. When $x = 5$, the value of $x^2 - 10$ is 15.

5. $2a + 3b + 4a$ simplifies to $6a + 3b$.
