

1.4 Relationships in Patterns

Example (1):

- a) For each number pattern, how is each term relate to the term number?
b) Let n represent any term number. Write a relation for the term.

Term Number	1	2	3	4	5
Term	4	8	12	16	20

a) The term is four times the term number. 4 ← numerical coefficient

b) $4n$

Term Number	1	2	3	4	5
Term	4	5	6	7	8

a) The term is three more than the term number. 1 ← numerical coefficient

b) $n + 3$

$1n = n$

Term Number	1	2	3	4	5
Term	0	1	2	3	4

a) The term is one less than the term number. 1 ← N.C.

b) $n - 1$

Term Number	1	2	3	4	5
Term	5	7	9	11	13

a) The term is three more than 2 times the term number. 2 ← numerical coefficient

b) $2n + 3$

Explore: (page 20)

On Enviro-Challenge Day, Grade 7 classes compete to see which class can collect the most garbage.

Each student in Mr. Collin's class pledges to pick up 6 pieces of garbage.

Complete the table.

Number of students	5	10	15	20	25	30
Number of pieces of garbage picked up by Mr. Collin's Class						

Write an algebraic expression for the number of pieces of garbage picked up by n students in Mr. Collin's class.

Ms. Vardy's class pledges to pick up a total of 10 more pieces of garbage than Mr. Collin's class. Write an algebraic expression for the number of pieces of garbage picked up by n students in Ms. Vardy's class.

The number of pieces of garbage is _____ to the number of students. When we compare or relate a variable to an expression that contains the variable, we have a _____. That is _____ is related to _____.

There are n students at Corner Brook Intermediate. Write a relation for each statement

- a) the total number of lockers, if each pair of students share a locker

$$\frac{n}{2}$$

- b) the total number desks, if there are 8 more desks than students

$$n + 8$$

- c) the total number of breakfast items, if each students has two and there are 6 left over.

$$2n + 6$$

- d) total amount of money raised, if each student donates \$3

$$3n$$