ALGEBRA 3

EXPRESSIONS WITH MORE THAN ONE VARIABLE

Let's say that a packet of Lays Classic  chips has **m** number of chips. And let a box of Pringles  Original contain **n** number of chips.

Now try to answer the following questions:

1. Write the total number of chips in each of the following cases in appropriate mathematical expressions:

   a. 2 Lays packets _____

   b. 5 Pringles boxes _____

   c. 3 Lays packets and 7 Lays loose chips _____

   d. 2 Pringles boxes and 8 Pringles loose chips _____

   e. 4 Lays packets and 6 Pringles boxes _____

2. John buys 5 packets of Lays and 8 boxes of Pringles. Carla buys 3 packets of Lays and 2 boxes of Pringles.

   a. Write the total number of chips that John has in the form of expressions.

   b. Write the total number of chips that Carla has in the form of expressions.

   c. Combine the two expressions from qs (a) and (b) and write them as a single expression

   d. Write, in algebraic expression, the total number chips that both John and Carla has together.

   e. Explain your method for finding the above expression.

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Check your understanding:



John's total chips and chips will be 5m + 8n

Carla's total chips and chips will be 3m + 2n

It is easy to identify that there 8 Lays packets and 10 Pringles boxes in all.

But how do you use the expressions?

Lays packets are represented by 5m and 3m, so adding them will give 8m which means there are 8 Lays packets

Pringles boxes are represented by 8n and 2n, so adding them will give 10n which means there are 8 Pringles boxes.

Let's consider more people in the scene:

If we have 2 more people buying Lays and Pringles as shown below:

Adam: 9 Lays and 12 Pringles

Brian: 5 Lays and 2 Pringles;

Write the mathematical expressions for the above

Adam: _____ Brian: _____

Write, in expression form, the sum of all the expressions for John, Carla, Adam and Brian in a single line.



Check your understanding:

5m + 8n + 3m + 2n + 9m + 12n + 5m + 2n



(Teacher explains the word 'TERM')

Now collect all the terms that contain m: _____

Add the above terms: _____

Collect all the terms that contain n: _____

Add the above terms: _____

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Can you add one m term and one n term together? Give reasons for your answer.

What did you learn from the above exercise?

Learnt:



All terms containing the same letter are called 'Like Terms'.

You can add only like terms.

You cannot add terms with different letters (these are called 'unlike' terms)

When Sheila enters the room there was no more Lays or Pringles packets. So, Adam and Brian offered her some chips and from their packets.

Adam had 5 Lays packets from which he gave 10 Lays chips to Sheila.

Brian had 2 Pringles boxes from which he gave 6 Pringles chips to Sheila.

Now how much Lays chips does Adam have? _____

How much Pringle chips does Brian have? _____

What difference do you notice between the previous expressions and the two expressions above?

What more did you learn about algebraic expressions?



That algebraic expressions can use both addition and subtraction.

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Try these:

Collect the like terms in each question and write them in separate groups:

I. 4c, 4m, 3k, 5m, 2c, 3m, 2k, 9c, 7m, 7k

II. 6s, 3d, 2g, 2s, 6g, 5g, 8d, 4s, 4g, 3s, 2d

III. 2f, 5a, 8b, 6a, 5f, a, 3b, 6f, b, f

In the above qs (iii) what special terms did you notice? Explain why they are special.

Simplify the following expressions:

1. 3a + 2g + 5g + 4a + 8a + 3g

2. 6x + 5y + 3x + 4x + 6y + 2v + 5x + 9v

3. 8d + 5j - 3d + j - 2j + 4d



- ✓ Collect the like terms together
- ✓ Add them and make them into one single term
- ✓ Give the final expression with only one term for each letter (variable)

Constants are considered as like terms. Hence constants can be added or subtracted together

Simplify the following expressions:

1. 4x + 5 + 3x + 10 + 2x + 3	2. 6m + 3 + 9m - 5 - 4m + 7
3. 5h + 6p + 5 + 2h - 3 + 9p + 6	4. 2r + t + 8 + 5r + 3 + 2t - 1

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