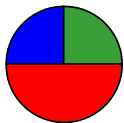


Algebra – Day 1 - Writing Letters in Math Class



Math Learning Goals

- Students will review the use of algebra in real life and evaluate algebraic expressions with integers.



Minds On.

Small Groups → Exploration/Presentation

Partner → Reflection

Post an algebraic expression on the board. Students will work with a partner to reflect on the following:

$5a + 2(3-1) = b$ (options to add an exponent as well)

$-3a = -6$ (review of integers)

- What does the letter in the algebraic expression represent?
- Why do we use letters in algebraic expressions?
- Describe what each symbol in the expression means in everyday language

(e.g. = means “the same as”)



Action!

Small Groups → Modelling

In partners, make the statements “true” (Missing Operations – BLM)

Assign questions based on level of difficulty (some integer and non-integer questions).

Use a half piece of chart paper to solve. Explain how you made the statement true (show thinking in 2 ways – e.g., fast facts, related facts, balance model, isolate the variable, numberline, etc.).



Debrief
Consolidate

Whole Class → Discussion

Review the online tools and discuss how the applications are helpful. This is an ideal opportunity to address any questions and/or misconceptions that came up while working.

Materials

- variety of manipulatives
 - chart paper
 - markers
- BLM 5.1.1

Reflection

Home Activity or Further Classroom Consolidation

Students will work on creating their own **think sheets** on Algebra:

- What does the letter in the algebraic expression represent?
- Describe why balance model might be used to solve equations

(e.g. = means “the same as”- balance model)

- Describe different ways you could approach solving an equation (give a variety of examples when each might be used – variety of number operations)
- use words, numbers and diagrams to explain
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1.5.1: Thinking Algebraically

Grade 8

For each of the following word problems, write an algebraic expression that represents the problem. Choose THREE of them to solve completely.

1. You are selling drinks at the school dance. You have a cooler, which holds 35 cups. The canteen gets busy and you lose track of how many cups you sold. You check and see that there are 17 cups left in the cooler. How many drinks must you have sold?
2. Your school is having an open house. They decide to make bumper stickers with the school logo. The school budgeted \$220 for the stickers. It costs \$40 to make the design and another \$2 for each sticker. How many stickers can the school buy?
3. (multi-step) You buy tickets to a concert for you and your friends. You buy ten tickets at \$12 each. Some of your friends pay you back. You are still owed \$36 in the end. How many of your friends paid you back?
4. You go grocery shopping for fruit and spend \$24. If you spent an equal amount on apples, bananas, oranges, kiwis, strawberries and pears, how much money did you spend on each type of fruit?

5. You want to purchase a grade 8 graduation outfit for \$150. You have 2 options for payment:

Layaway - Forty dollars down on the first day, and \$10 every week

Borrow from you parents - \$15 paid to them every week

Which is the better option and why? Is this a reasonable amount for one outfit?

Possible Journal Question:

1. A) Create an equation (with one variable).

B) Create a word problem to accompany the equation above.

2. A) Create an equation (with at least one variable and one constant).

B) Create a word problem to accompany the equation above.