

Activity 10 Assessment

Consolidating Variables and Equations

Variables and Equations			
<p>Evaluates a numerical expression using the order of operations</p> $2 \times (30 + 18) - 3 = 2 \times 48 - 3$ $= 96 - 3$ $= 93$ <p>“I have to do the operation in brackets first, then the multiplication, and then the subtraction.” <i>(« Je dois d'abord effectuer l'opération entre parenthèses, puis la multiplication et enfin la soustraction. »)</i></p>	<p>Writes an algebraic expression to describe an unknown value</p> <p>Subtract five from a number then multiply by two</p> $(n - 5) \times 2$ <p>“I let n represent the number. I used brackets so 5 would be subtracted first.” <i>(« J'ai laissé n représenter le nombre. J'ai utilisé des parenthèses pour que 5 soit soustrait en premier. »)</i></p>	<p>Evaluates an algebraic expression using substitution</p> $(n - 5) \times 2$ <p>“To find the value of the expression when n equals 12, I substitute 12 for n.” <i>(« Pour trouver la valeur de l'expression lorsque n est égal à 12, je remplace n par 12. »)</i></p> $(n - 5) \times 2 = (12 - 5) \times 2$ $= 7 \times 2$ $= 14$	<p>Solves equations involving one operation using different strategies</p> $23 = e + 15$ $23 - 15 = e + 15 - 15$ $8 = e$ <p>“I used the inverse operation, subtracting 15 from each side.” <i>(« J'ai utilisé l'opération inverse en soustrayant 15 de chaque côté. »)</i></p>
Observations/Documentation			

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Variables and Equations (cont'd)			
<p>Solves equations involving two operations using different strategies</p> $29 = 3z + 2$ $29 - 2 = 3z + 2 - 2$ $27 = 3z$ $\frac{27}{3} = \frac{3z}{3}$ $9 = z$ <p>“I performed the order of operations in the reverse order to isolate the variable. I subtracted 2 from each side, then divided each side by 3.” <i>(« J'ai effectué l'ordre des opérations dans l'ordre inverse pour isoler la variable. J'ai soustrait 2 de chaque côté, puis j'ai divisé chaque côté par 3. »)</i></p>	<p>Verifies the solution to an equation</p> $29 = 3z + 2$ <p>“To verify, substitute $z = 9$.</p> <p>Left side = 29 Right side = $3(9) + 2$ $= 27 + 2$ $= 29$</p> <p>Since the left side equals the right side, my solution is correct.” <i>(« Pour vérifier, remplacer $z = 9$. Côté gauche = 29 Côté droit = $3(9) + 2 = 27 + 2 = 29$ Puisque le côté gauche est égal au côté droit, ma solution est correcte. »)</i></p>	<p>Solves problems using equations involving one or two operations</p> <p>Kairis sold 16 tickets. That is twice as many tickets as Grace sold. How many tickets did Grace sell? Let t represent the number of tickets Grace sold.</p> $2t = 16$ $\frac{2t}{2} = \frac{16}{2}$ $t = 8$ <p>“So, Grace sold 8 tickets.” <i>(« Donc, Grace a vendu 8 billets. »)</i></p>	<p>Flexibly works with equations to solve problems using a variety of strategies</p> <p>At the grocery store, there are 5 lines of people at the checkouts. There are the same number of people in each line. The manager counts to determine the total number of people at the checkouts, including 6 employees (including the manager). They counted 51 people. How many people are in each line? Let n represent the number of people in each line.</p> $5n + 6 = 51$ $5n + 6 - 6 = 51 - 6$ $5n = 45$ $n = 9$ <p>“I know $5 \times 9 = 45$, so $n = 9$. There are 9 people in each line.” <i>(« Je sais que $5 \times 9 = 45$, donc $n = 9$ Il y a 9 personnes dans chaque file. »)</i></p>
Observations/Documentation			

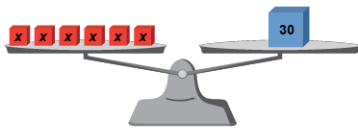
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Using Variables to Represent a Problem as an Equation

Interprets word problems/pictures and identifies the unknown part

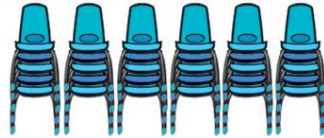
Our class needs to set up rows of 6 chairs for a presentation. There are 30 chairs altogether. How many rows do we need?



“The unknown is the number of rows of 6 chairs needed to make an array of 30 chairs.”

(« L'inconnue est le nombre de rangées de 6 chaises nécessaires pour obtenir une matrice de 30 chaises. »)

Translates word problems into equations using variables, operations, and numbers

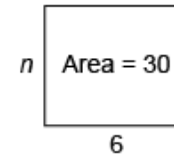


“The unknown, n , is the number of rows. I know there are 6 chairs in each row and a total of 30 chairs. So, $6n = 30$.”

(« L'inconnue, n , est le nombre de rangées. Je sais qu'il y a 6 chaises dans chaque rangée et un total de 30 chaises.

Donc, $6n = 30$. »)

Describes equivalent relationships using more than one equation (including formulas)



“I know the area of a rectangle is base multiplied by height, which is 30. If the base is 6, then the height must be n . I could write the equation $30 = 6n$ or $30 \div 6 = n$.”

(« Je sais que l'aire d'un rectangle est la base multipliée par la hauteur, soit 30. Si la base est 6, alors la hauteur doit être n . Je pourrais écrire l'équation $30 = 6n$ ou $30 \div 6 = n$. »)

Flexibly writes algebraic equations using a variety of strategies

$$6n = 30$$

$$30 \div n = 6$$

“I can use the inverse operation to rewrite the equation.”
(« Je peux utiliser l'opération inverse pour réécrire une équation. »)

Observations/Documentation