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DepED
DEPARTMENT OF EDUCATION

Learning Activity Sheet for Mathematics

Quarter 4
Lesson
1

Worksheet for Mathematics Grade 7
Quarter 4: Lesson 1 (Week 1)
SY 2024-2025

Development Team

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LEARNING ACTIVITY SHEET

Learning Area:	Mathematics		Quarter:	4
Lesson No.:	1		Date:	
Lesson Title/ Topic:	Algebraic Expressions			
Name:			Grade & Section:	

I. **Activity No. 1:** Algebraic Expression Bingo (1 session)
II. **Objective(s):** The objective of this worksheet is to reinforce students' understanding of algebraic expression terms and concepts through a fun and interactive bingo game.
III. **Materials Needed:**
   - Bingo cards (pre-made or created by the teacher)
   - Markers or chips for each student
IV. **Instructions:**
   1. Distribute the bingo cards to each student.
   2. Call out algebraic expression terms randomly.
   3. Students mark the terms on their bingo cards.
   4. The first student to complete a row, column, or diagonal shouts "Bingo!" and wins.

Terms to Call Out:
   1. Variable
   2. Constant
   3. Coefficient
   4. Term
   5. Equation
   6. Expression
   7. Evaluate
   8. Polynomial
   9. Like Terms

Sample Bingo Cards:

Bingo Card 1:

V (Variable)	T (Term)	E (Equation)
C (Constant)	P (Polynomial)	L (Like Terms)
C (Coefficient)	E (Expression)	A (Evaluate)

Bingo Card 2:

T (Term)	C (Coefficient)	V (Variable)
E (Expression)	L (Like Terms)	P (Polynomial)
E (Equation)	A (Evaluate)	C (Constant)

Bingo Card 3:

E (Equation)	P (Polynomial)	V (Variable)
C (Constant)	A (Evaluate)	T (Term)
E (Expression)	C (Coefficient)	L (Like Terms)

Bingo Card 4:

P (Polynomial)	L (Like Terms)	T (Term)
A (Evaluate)	V (Variable)	C (Constant)
E (Expression)	C (Coefficient)	E (Equation)

Bingo Card 5:

L (Like Terms)	V (Variable)	E (Equation)
C (Constant)	T (Term)	P (Polynomial)
A (Evaluate)	E (Expression)	C (Coefficient)

Bingo Card 6:

E (Equation)	T (Term)	A (Evaluate)
P (Polynomial)	C (Coefficient)	L (Like Terms)
V (Variable)	C (Constant)	E (Expression)

Bingo Card 7:

T (Term)	E (Equation)	L (Like Terms)
C (Constant)	A (Evaluate)	P (Polynomial)
E (Expression)	V (Variable)	C (Coefficient)

Bingo Card 8:

C (Constant)	E (Expression)	V (Variable)
A (Evaluate)	L (Like Terms)	T (Term)
P (Polynomial)	C (Coefficient)	E (Equation)

Bingo Card 9:

E (Expression)	P (Polynomial)	T (Term)
L (Like Terms)	V (Variable)	A (Evaluate)
C (Constant)	C (Coefficient)	E (Equation)

Bingo Card 10:

A (Evaluate)	C (Constant)	T (Term)
P (Polynomial)	L (Like Terms)	E (Expression)
C (Coefficient)	V (Variable)	E (Equation)

V. Synthesis/Extended Practice/Differentiation:

Reflect on the terms and concepts you encountered during the bingo game. How do these terms relate to each other, and how are they used in algebraic expressions?

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LEARNING ACTIVITY SHEET

Learning Area:	Mathematics		Quarter:	4
Lesson No.:	1		Date:	
Lesson Title/ Topic:	Variable, Constant, and Other Terms Related to Algebraic Expressions			
Name:			Grade & Section:	

I. Activity No. 2: Algebraic Expression Analysis (1 session)
II. Objective(s):
 ● To differentiate variables, constants, coefficients, and terms in algebraic expressions.
 ● To practice identifying and distinguishing between these components within given algebraic expressions.
III. Materials Needed:
 ● printed copies of the activity worksheet for each student
 ● pencils or pens
IV. Instructions: For each expression, identify the variable(s), constant term, coefficient(s), and term(s).

 1. $3x + 7y - 5$

 ● Variable(s):

 ● Constant(s):

 ● Coefficient(s):

 ● Term(s):

 2. $4a^2b - 9c + 2$

 ● Variable(s):

 ● Constant(s):

 ● Coefficient(s):

 ● Term(s):

 3. $2xy - 3x^2 + 5y^2z$

 ● Variable(s):

 ● Constant(s):

 ● Coefficient(s):

 ● Term(s):

 4. $8p - 6q^2r^3 + 10$

 ● Variable(s):

 ● Constant(s):

 ● Coefficient(s):

 ● Term(s):

5. $-3mn + 4m^2n^2 - 7$

- Variable(s):
- Constant(s):
- Coefficient(s):
- Term(s):

6. $\frac{1}{2} x^2 - 3xy + 7z - 10$

- Variable(s):
- Constant(s):
- Coefficient(s):
- Term(s):

7. $5ab - 2bc + 3cd - 4d^2$

- Variable(s):
- Constant(s):
- Coefficient(s):
- Term(s):

8. $6xy + 9x^2 - 2y^2z + 11$

- Variable(s):
- Constant(s):
- Coefficient(s):
- Term(s):

9. $-4pq^2 + 7r^3 - 2p + 3$

- Variable(s):
- Constant(s):
- Coefficient(s):
- Term(s):

10. $2x^3 - 5xy^2z + 9y - 11$

- Variable(s):
- Constant(s):
- Coefficient(s):
- Term(s):

V. Synthesis/Extended Practice/Differentiation (if needed):

Synthesis:

Consider how the arrangement of variables, constants, coefficients, and terms impact the overall structure and meaning of algebraic expressions.

Extended Practice:

1. Provide additional algebraic expressions for students to analyze, incorporating different combinations of variables, constants, coefficients, and terms.
2. Have students create their own algebraic expressions and exchange them with a partner to analyze and identify the components.

Differentiation:

1. For students who need additional support, provide examples and explanations of each component before starting the activity.
2. Offer guided practice sessions where students work in small groups with teacher support to analyze algebraic expressions and identify their components.
3. Challenge advanced students to create more complex algebraic expressions with multiple variables, terms, and operations, and then analyze them to identify the components.

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I.   **Activity No. 3:** Polynomial or Not? Identify! (1 session)

II.   **Objective(s):** To determine whether each algebraic expression is a polynomial, or not, and if it is, to identify its degree and type based on the number of terms.

III.   **Materials Needed:**
   ● printed copies of the activity worksheet for each student
   ● pencils or pens

IV.   **Instructions:** Identify each algebraic expression, draw a **star** if it is a polynomial and a **heart** if it is not a polynomial, and if it is a polynomial, identify its degree and type based on the number of terms.

Example: $2x^2$ - ☆, degree: 2, monomial

Remember:

Polynomial ★   Not Polynomial ♥
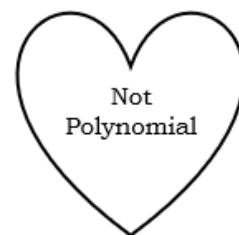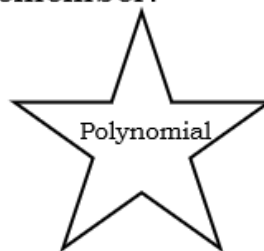
1. $3x^2 + 5x - 2$

2. $\frac{2}{x} + 4x^3$

3. $7x^4 - 2x^2 + x - 5$

4. $\sqrt{x} + 2x^2 - 3$

5. $2x^3y^2 - 5xy + 1$

6. $x^2 + 3x - 4x^{-2}y + 2$

7. $6x^4 - 8x^3 + 2x^2 - x + 4$

8. $\frac{1}{x^2} + 3x - 7$

9. $\sqrt{2xy} + 4xy^2 + 3y^3$

10. $5x^3 - 2x^2y - y^3$

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V. Synthesis/Extended Practice/Differentiation (if needed):

Reflect on the characteristics of polynomial expressions compared to non-polynomial expressions. How does identifying the degree and type of a polynomial help in understanding its behavior and properties? Provide examples to support your explanation.

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Learning Area:	Mathematics	Quarter:	4
Lesson No.:	1	Date:	
Lesson Title/ Topic:	Translating Verbal Phrases to Algebraic Expressions		
Name:		Grade & Section:	

I. **Activity No. 4:** Algebra Vocabulary Categorization Challenge (1 session)
II. **Objective(s):**
   ● To enhance understanding of algebraic vocabulary and its corresponding mathematical symbols.
   ● To strengthen familiarity with algebraic terminology through interactive engagement.
III. **Materials Needed:**
   ● printed copies of the activity worksheet for each student
   ● pencils or pens
IV. **Instructions:** Categorize the following terms according to their corresponding mathematical symbols. Write the words that correspond to the operation.

Terms:

●plus	●equal to	●less than
●more than	●minus	●decreased by
●times	●the product of	●the same as
●ratio of	●not equal to	●not the same as
●increased by	●greater than	●is
●subtracted by	●diminished by	●is less than or equal to
●multiplied by	●equivalent	●is at most
●less	●the sum of	
●the quotient of	●the difference of	

Operation	Words
+	
−	
.	
÷	
=	
≠	
>	
<	
≤	
≥	

V. **Synthesis/Extended Practice/Differentiation (if needed):**

How does categorizing mathematical terms according to their corresponding symbols help in problem-solving and communicating mathematical ideas effectively? Provide examples to support your explanation.

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<div align="center">**LEARNING ACTIVITY SHEET**</div>

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Lesson Title/ Topic:	Translating Verbal Phrases to Algebraic Expressions		
Name:		**Grade & Section:**	

I.   Activity No. 5: Find a Match! (1 session)
II.   Objective(s):
   ● To understand the concept of algebraic expressions by matching verbal phrases with their corresponding mathematical representations.
   ● To promote critical thinking by identifying relationships between mathematical operations and verbal descriptions
III. Materials Needed:
   ● printed copies of the activity worksheet for each student
   ● pencils or pens
IV. Instructions: Your task is to pair each verbal phrase on the box with its corresponding number. Each number corresponds to a letter, which, when correctly matched, will reveal a quotation. Some letters may be used multiple times.

____ 1. The sum of a number and three

____ 2. Four times a certain number decreased by one

____ 3. One subtracted from four times a number

____ 4. A certain number decreased by two

____ 5. Four increased by a certain number

____ 6. A certain number decreased by three

____ 7. Three more than a number

____ 8. Twice a number decreased by three

____ 9. A number added to four

____ 10. The sum of four and a number

____ 11. The difference between two and a number

____ 12. The sum of four times a number and three

____ 13. A number increased by three

____ 14. Four times a number subtracted to one

____ 15. Twice a number is equal to 4

A- $x + 3$	B- $3 + 4x$	E- $4 + x$	I- $x + 4$	L- $4x - 1$	!- $2x = 4$
M- $x - 2$	N- $x - 3$	P- $3 - x$	Q- $2 - x$	R- $2x - 3$	U- $4x + 3$

V. Synthesis/Extended Practice/Differentiation (if needed):

What is the quotation? _____

Give your ideas about the quotation.

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LEARNING ACTIVITY SHEET

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Lesson No.:	1		Date:	
Lesson Title/ Topic:	Translating Verbal Phrases to Algebraic Expressions			
Name:			Grade & Section:	

I.   **Activity No. 6:** Translate & Match: A Verbal Phrases to Algebraic Expressions Game

II. **Objective(s):**
   ● To practice translating verbal phrases to algebraic expressions
   ● To promote critical thinking by identifying relationships between mathematical operations and verbal descriptions

III. **Materials Needed:**
   ● Game cards with verbal phrases (printed or written on index cards)
   ● Game board or playing area (optional)
   ● Markers or tokens for each player

IV. **Instructions:**
   1. Shuffle the game cards and place them face down on the table or playing area.
   2. Each player takes turns drawing a card from the deck.
   3. Read the verbal phrase on the card aloud.
   4. Using the verbal phrase, mentally or aloud, convert it into an algebraic expression.
   5. Players then race to find the matching algebraic expression on a separate set of cards or on the game board.
   6. The player who finds the matching algebraic expression first earns a point.
   7. Continue playing until all cards have been drawn and matched.
   8. The player with the most points at the end of the game wins.

   <u>Example of Game Cards:</u>

"THE SUM OF A NUMBER AND 5."	"THREE TIMES THE DIFFERENCE BETWEEN A NUMBER AND 7"	"TEN LESS THAN TWICE A NUMBER"	"TWICE THE SUM OF A NUMBER AND 4."
THE PRODUCT OF A NUMBER AND 9 DECREASED BY 6."	AB	3(x−7)	2x−10
2(x+4)	x+5	9x−6	THE PRODUCT OF A AND B

V. Synthesis/Extended Practice/Differentiation (if needed):

How did you find the activity? Did you enjoy it? Why or why not?

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