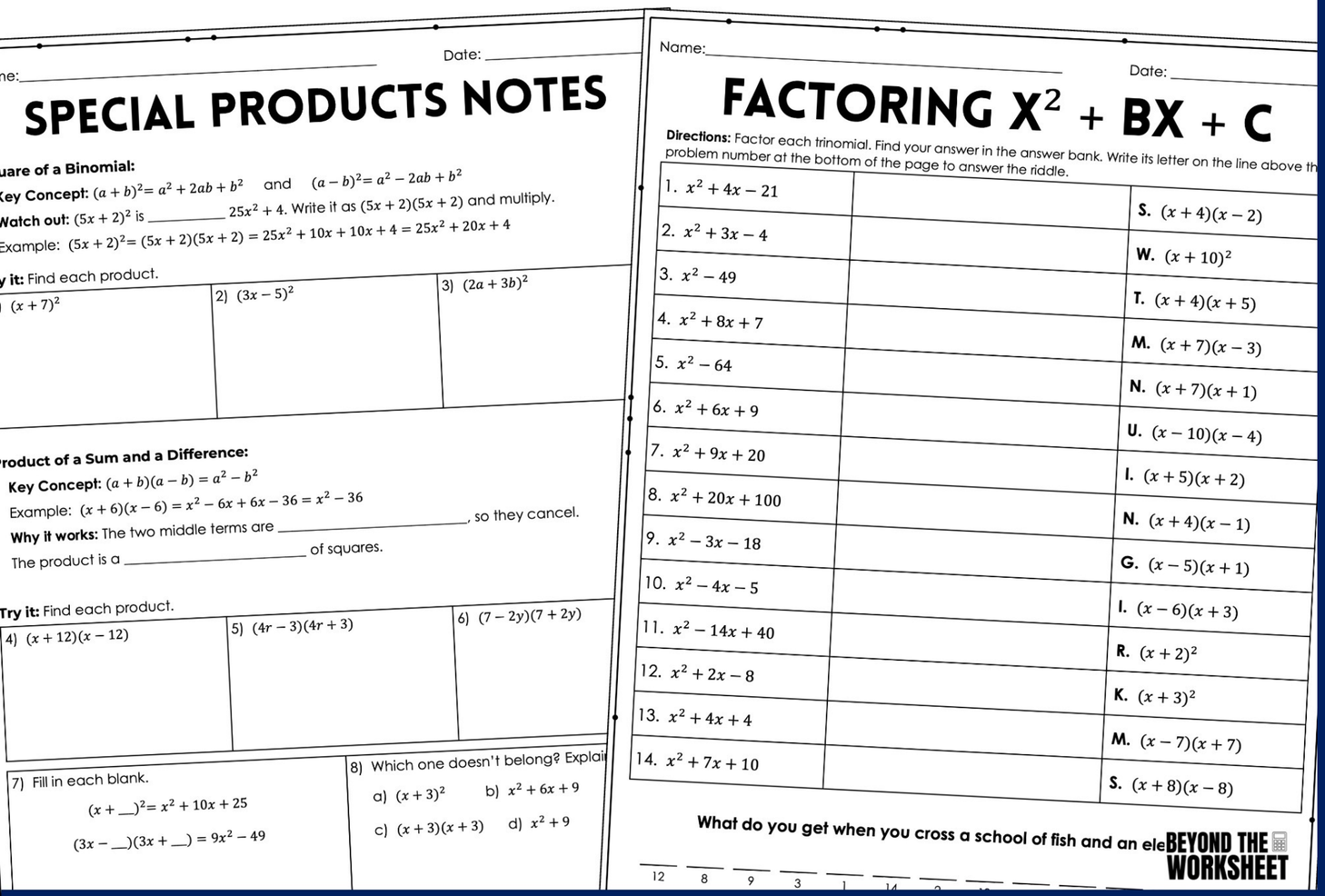
ALGEBRA 1 CURRICULUM – UNIT 8

ADD, SUBTRACT, MULTIPLY & SOLVE POLYNOMIALS



Date:

SPECIAL PRODUCTS NOTES

uare of a Binomial:

Key Concept: $(a+b)^2 = a^2+2ab+b^2$ and $(a-b)^2 = a^2-2ab+b^2$

Watch out: $(5x+2)^2$ is _____ $25x^2+4$. Write it as $(5x+2)(5x+2)$ and multiply.

Example: $(5x+2)^2 = (5x+2)(5x+2) = 25x^2+10x+10x+4 = 25x^2+20x+4$

y it: Find each product.

1) $(x+7)^2$

2) $(3x-5)^2$

3) $(2a+3b)^2$

roduct of a Sum and a Difference:

Key Concept: $(a+b)(a-b) = a^2-b^2$

Example: $(x+6)(x-6) = x^2-6x+6x-36 = x^2-36$

Why it works: The two middle terms are _____, so they cancel.

The product is a _____ of squares.

Try it: Find each product.

4) $(x+12)(x-12)$

5) $(4r-3)(4r+3)$

6) $(7-2y)(7+2y)$

7) Fill in each blank.

$(x+__)^2 = x^2+10x+25$

$(3x-__)(3x+__) = 9x^2-49$

8) Which one doesn't belong? Explai

a) $(x+3)^2$ b) x^2+6x+9

c) $(x+3)(x+3)$ d) x^2+9

Name: Date:

FACTORING $X^2 + BX + C$

Directions: Factor each trinomial. Find your answer in the answer bank. Write its letter on the line above th problem number at the bottom of the page to answer the riddle.

1. $x^2+4x-21$		S. $(x+4)(x-2)$
2. x^2+3x-4		W. $(x+10)^2$
3. x^2-49		T. $(x+4)(x+5)$
4. x^2+8x+7		M. $(x+7)(x-3)$
5. x^2-64		N. $(x+7)(x+1)$
6. x^2+6x+9		U. $(x-10)(x-4)$
7. $x^2+9x+20$		I. $(x+5)(x+2)$
8. $x^2+20x+100$		N. $(x+4)(x-1)$
9. $x^2-3x-18$		G. $(x-5)(x+1)$
10. x^2-4x-5		I. $(x-6)(x+3)$
11. $x^2-14x+40$		R. $(x+2)^2$
12. x^2+2x-8		K. $(x+3)^2$
13. x^2+4x+4		M. $(x-7)(x+7)$
14. $x^2+7x+10$		S. $(x+8)(x-8)$

What do you get when you cross a school of fish and an ele

BEYOND THE WORKSHEET

12 8 9 3 1 14

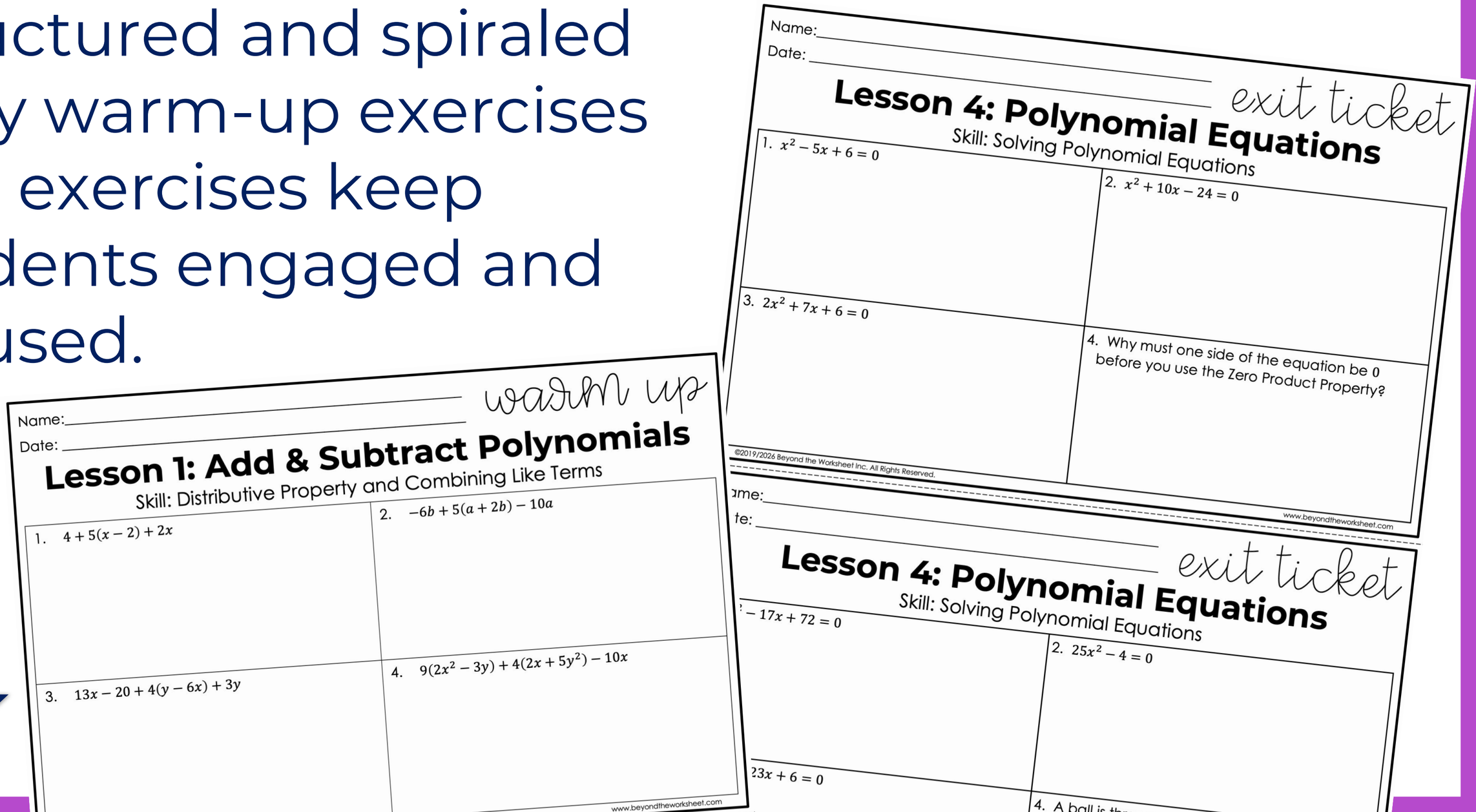
GUIDED NOTES, PRACTICE, ACTIVITIES, ASSESSMENTS AND MORE!

This Algebra 1 Polynomials Unit includes 12 days of instruction covering adding, subtracting, multiplying, and factoring polynomials, along with solving polynomial equations. Students work through guided notes, practice problems, error analysis, and engaging activities that build procedural fluency and mathematical reasoning.

learn more!

WARM-UPS & EXIT TICKETS

- Structured and spiraled daily warm-up exercises and exercises keep students engaged and focused.



STUDENT FRIENDLY NOTES

- The notes provide students with a place to review the proper steps for each operation as well as guided practice.

Name: _____ Date: _____

ADD & SUBTRACT POLYNOMIALS *notes*

Key Words

- Polynomial - _____
- Monomial, Binomial, Trinomial - _____
- Degree - _____
- Leading Coefficient - _____

Writing Polynomials in Standard Form:

- **Key Concept:** Write terms in order from greatest degree to least degree.
- Example: Write $6 + 4x^3 + x$ in standard form.
  - Degree: _____
  - Leading coefficient: _____
  - Number of terms: _____
  - This polynomial is a (shade one):

monomial	binomial	trinomial

Name: _____ Date:

POLYNOMIAL EQUATIO

The Zero Product Property

- **Key Concept:**

If $a \cdot b = 0$, then $a = 0$ or $b = 0$. A product can only equal _____ if one of its factors i

- Example: $(x-5)(2x+3) = 0 \rightarrow x-5=0$ or $2x+3=0 \rightarrow x=5$ or $x=-\frac{3}{2}$

- **Watch out:** This only works when one side is 0. If $(x-2)(x+1)=6$, you **cannot** write $x-$

h out: Do not divide both sides by the variable. You will lose the solution $x = 0$.

a Polynomial Equation by Factoring

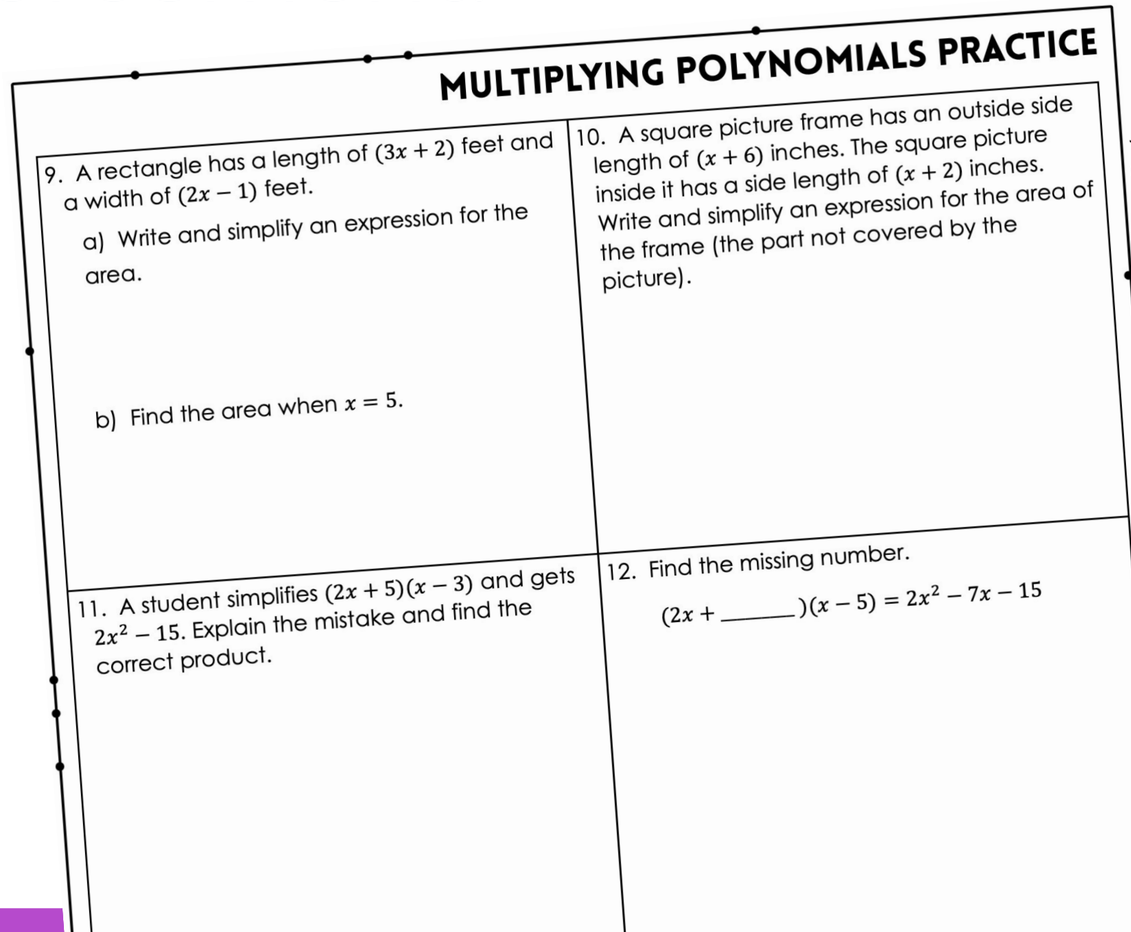
the equation in standard form (= 0).	$x^2 - 7x = 18 \rightarrow x^2 - 7x - 18 = 0$
r completely.	$(x-9)(x+2) = 0$
ch factor equal to 0.	$x - 9 = 0$ or $x + 2 = 0$
ach equation.	$x = 9$ or $x = -2$
the original equation.	$81 - 63 = 18$ ✓ $4 + 14 = 18$ ✓

each equation. Check your solutions.

$-9) = 0$	2) $18x^2 + 12x = 0$	3) $x^2 + 9x = -20$
$= 0$	5) $4x^2 = 25$	6) $2x^2 - 5x - 3 = 0$

PRACTICE WORKSHEETS

- Each skill includes a worksheet for independent practice and skill reinforcement.



MULTIPLYING POLYNOMIALS PRACTICE

9. A rectangle has a length of $(3x + 2)$ feet and a width of $(2x - 1)$ feet.

a) Write and simplify an expression for the area.

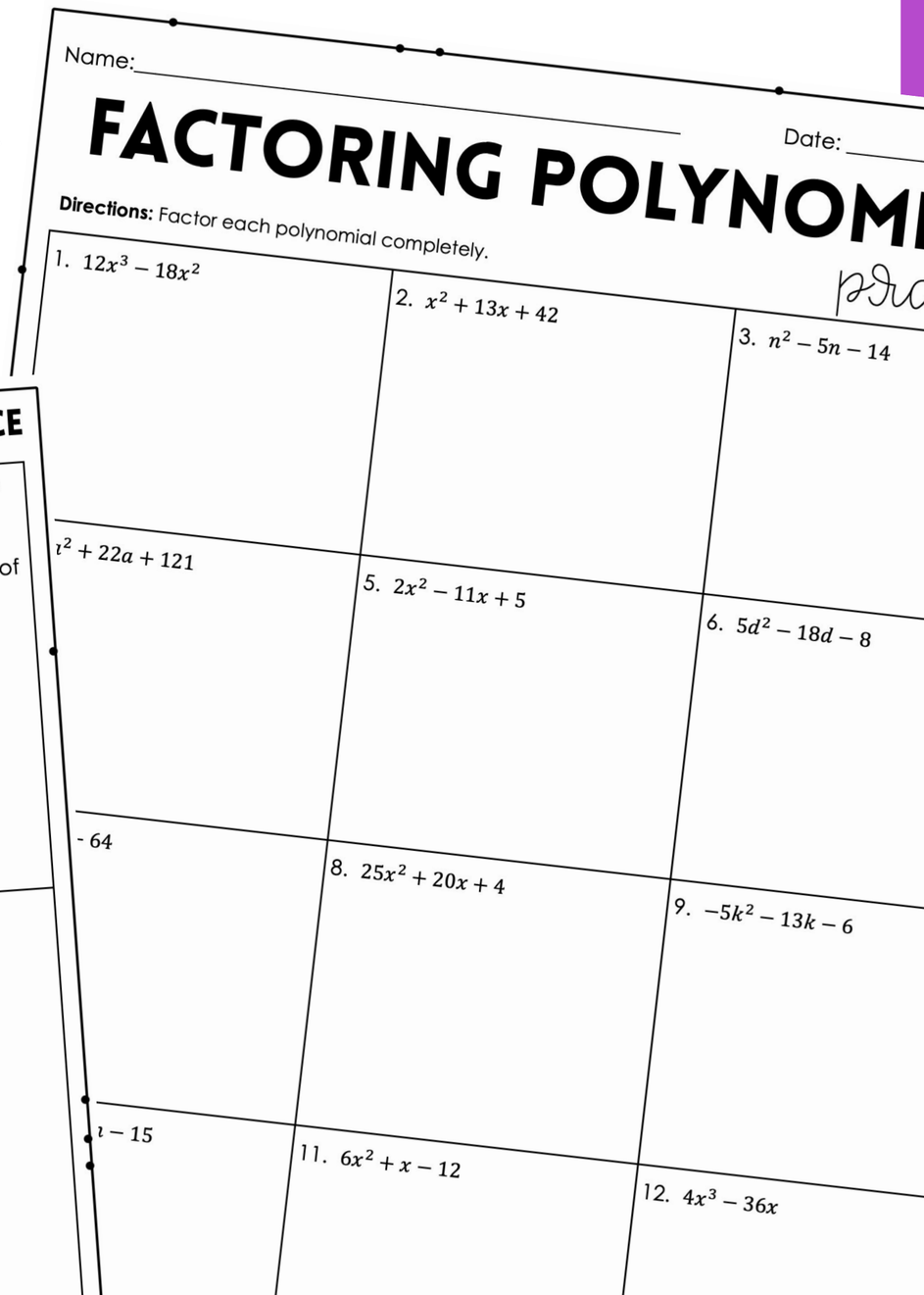
b) Find the area when $x = 5$.

10. A square picture frame has an outside side length of $(x + 6)$ inches. The square picture inside it has a side length of $(x + 2)$ inches. Write and simplify an expression for the area of the frame (the part not covered by the picture).

11. A student simplifies $(2x + 5)(x - 3)$ and gets $2x^2 - 15$. Explain the mistake and find the correct product.

12. Find the missing number.

$(2x + _____)(x - 5) = 2x^2 - 7x - 15$



Name: _____

Date: _____

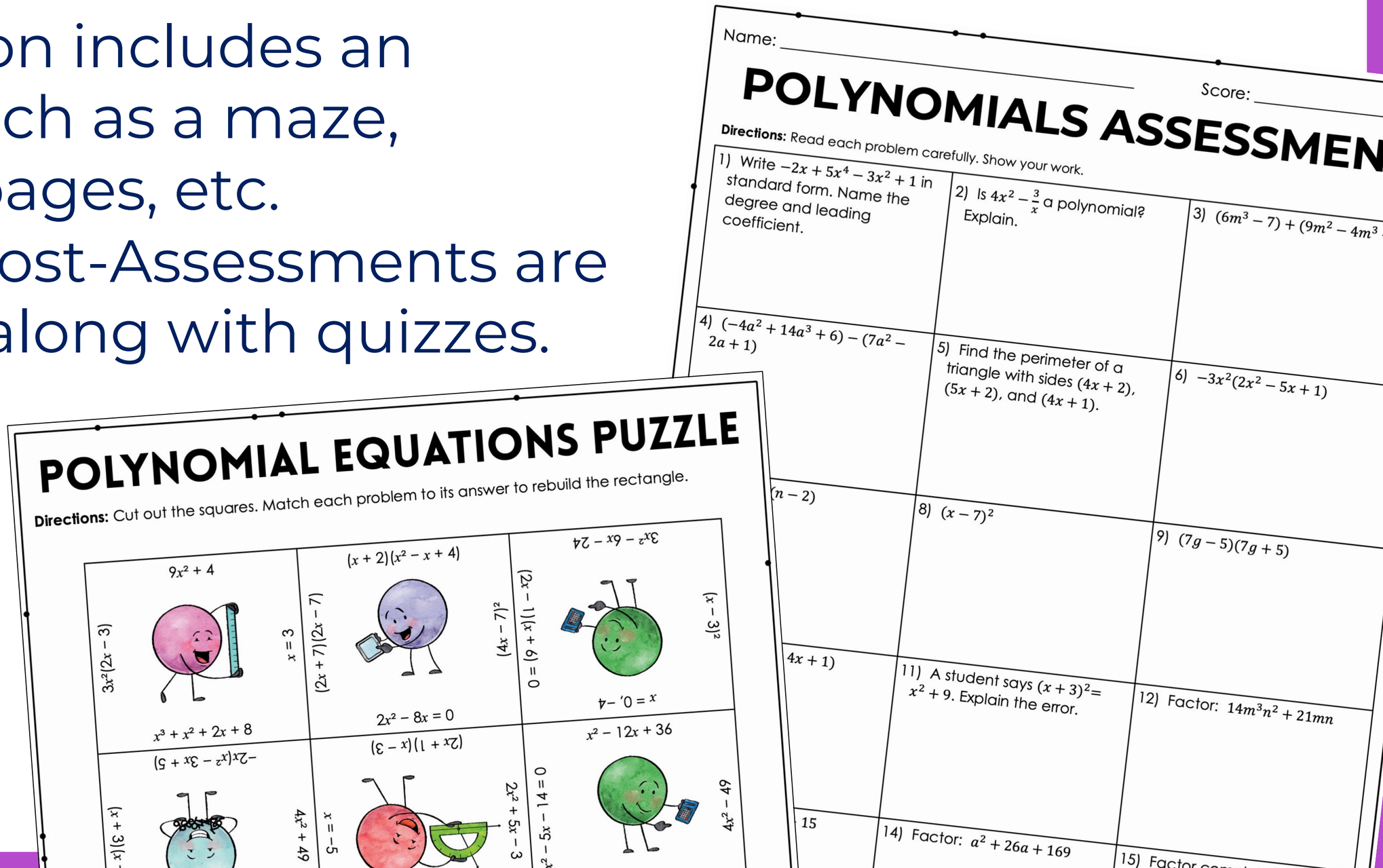
FACTORING POLYNOMI

Directions: Factor each polynomial completely.

1. $12x^3 - 18x^2$	2. $x^2 + 13x + 42$	3. $n^2 - 5n - 14$
$t^2 + 22a + 121$	5. $2x^2 - 11x + 5$	6. $5d^2 - 18d - 8$
$- 64$	8. $25x^2 + 20x + 4$	9. $-5k^2 - 13k - 6$
$t - 15$	11. $6x^2 + x - 12$	12. $4x^3 - 36x$

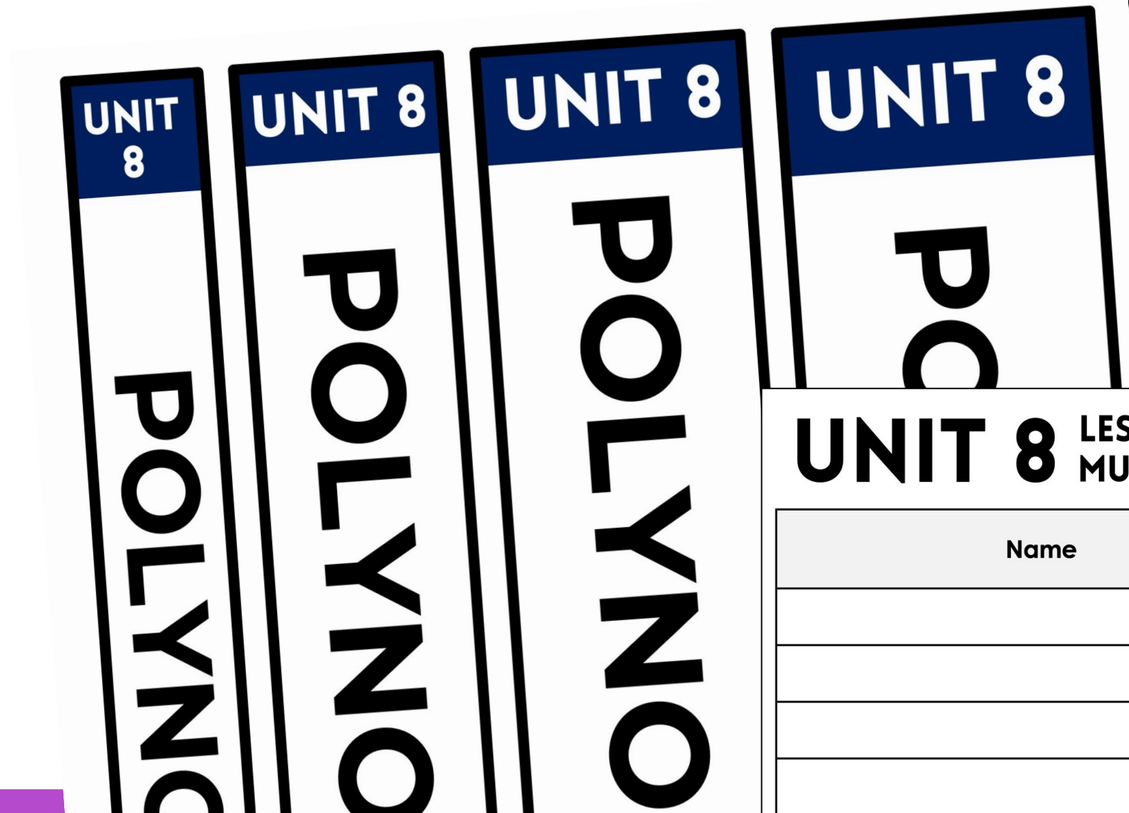
ACTIVITIES AND ASSESSMENTS

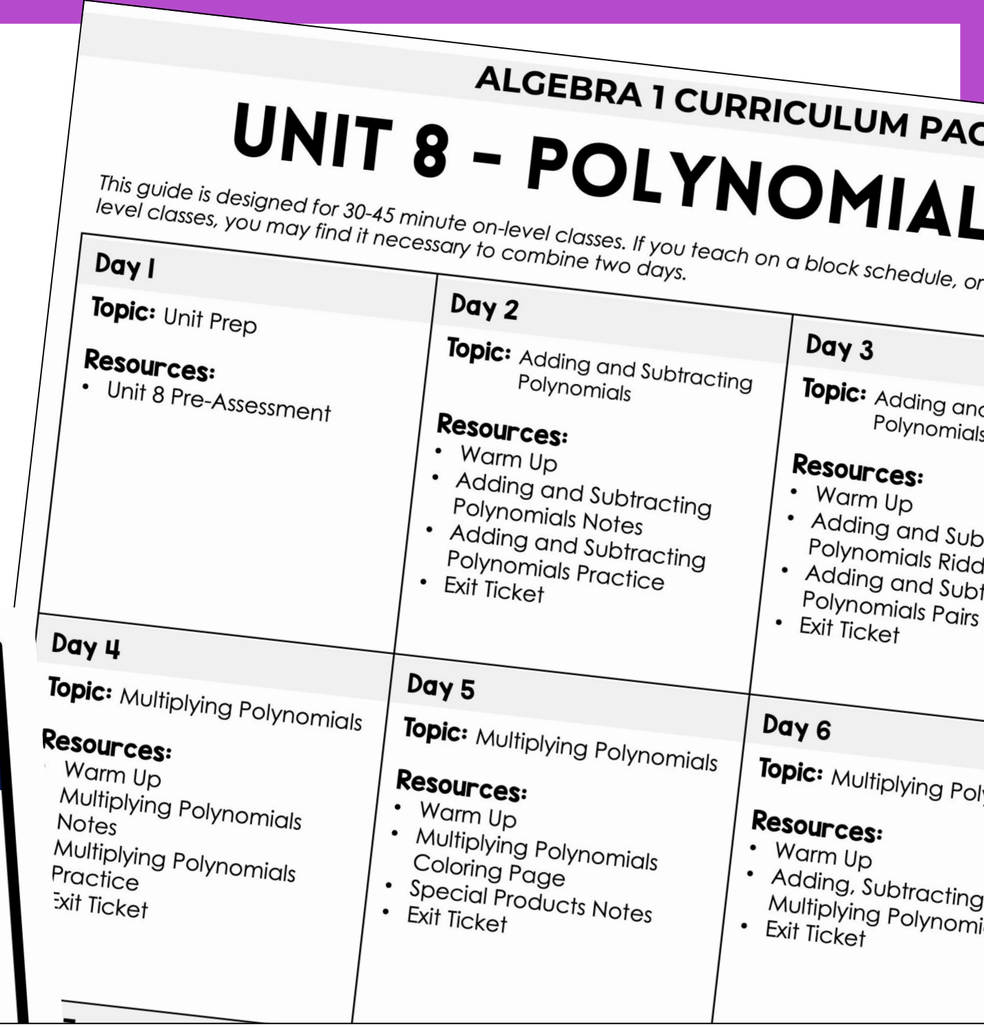
- Each lesson includes an activity such as a maze, coloring pages, etc.
- Pre and Post-Assessments are included along with quizzes.



TEACHER RESOURCES

- Pacing guide
- Tracking pages
- Lesson info sheets
- Binder covers and spine labels




ALGEBRA 1 CURRICULUM PAC

UNIT 8 – POLYNOMIAL

This guide is designed for 30-45 minute on-level classes. If you teach on a block schedule, or level classes, you may find it necessary to combine two days.

Day 1
Topic: Unit Prep
Resources:
- Unit 8 Pre-Assessment

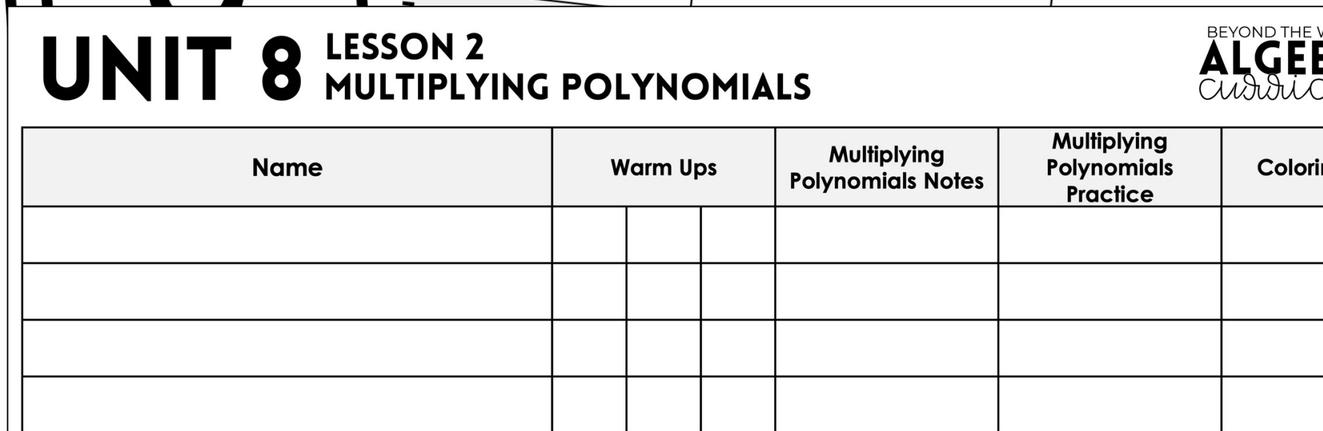
Day 2
Topic: Adding and Subtracting Polynomials
Resources:
- Warm Up
- Adding and Subtracting Polynomials Notes
- Adding and Subtracting Polynomials Practice
- Exit Ticket

Day 3
Topic: Adding and
Polynomials
Resources:
- Warm Up
- Adding and Sub
Polynomials Ridd
- Adding and Subt
Polynomials Pairs
- Exit Ticket

Day 4
Topic: Multiplying Polynomials
Resources:
- Warm Up
- Multiplying Polynomials Notes
- Multiplying Polynomials Practice
- Exit Ticket

Day 5
Topic: Multiplying Polynomials
Resources:
- Warm Up
- Multiplying Polynomials Coloring Page
- Special Products Notes
- Exit Ticket

Day 6
Topic: Multiplying Pol
Resources:
- Warm Up
- Adding, Subtracting
Multiplying Polynomi
- Exit Ticket


UNIT 8 LESSON 2
MULTIPLYING POLYNOMIALS

BEYOND THE
ALGEB

Name	Warm Ups			Multiplying Polynomials Notes	Multiplying Polynomials Practice	Colori

EVERYTHING INCLUDED:

- Lessons are designed for 30-45 minute on-level classes and may need to be adjusted for longer classes or varied levels.
- Also includes an answer key and editable version.

UNIT 6

ALGEBRA 1 curriculum
BEYOND THE WORKSHEET

Linear Systems	
Lesson	**Resources**
Unit Prep (pgs. 3 – 9)	• Weekly Warm Up Sheet • Exit Tickets • Lesson Plan Template • Vocabulary Sheets • Pre-Assessment
(1) Solving Systems by Graphing (pgs. 10 – 20)	• 2 Warm-Ups • Solving Systems by Graphing Notes • Graphing Calculator Tips Half Sheet • Solving Systems by Graphing Fold and Flip Notes • Solving Systems by Graphing Practice Worksheet • Solving Systems by Graphing Applications • 2 Exit Tickets
(2) Solving Linear Systems (pgs. 21 – 37)	• 4 Warm-Ups • Solving Systems Using Substitution Notes • Solving Systems Using Substitution Practice Worksheet • Solving Systems Using Elimination Notes • Solving Systems Using Elimination Practice Worksheet • Solving Systems Applications • Solving Systems Fold and Flip Notes • Solving Linear Systems Quiz • 4 Exit Tickets
(3) Solutions to Linear Systems (pgs. 38 – 48)	• 2 Warm-Ups • Solutions to Linear Systems Notes • Solutions to Linear Systems Fold and Flip Notes • Solutions to Linear Systems Practice Worksheet • 2 Exit Tickets
(4) Systems of Inequalities (pgs. 49 – 56)	• 2 Warm-Ups • Systems of Inequalities Notes • Systems of Inequalities Practice Worksheet • Systems of Inequalities Applications • Systems of Inequalities Quiz • 2 Exit Tickets
(5) Matrices {optional} (pgs. 57 – 61)	• 1 Warm Up • Solving Systems Using Matrices Notes • Solving Systems Using Matrices Practice Worksheet • 1 Exit Ticket
End of Unit (pgs. 62 – 66)	• Study Guide • Unit Exam

©2019/2026 Beyond the Worksheet Inc. All Rights Reserved.

Have questions?

Lindsay@beyondtheworksheet.com

www.beyondtheworksheet.com

www.facebook.com/BeyondTheWorksheet

www.instagram.com/beyond_the_worksheet

www.pinterest.com/BeyondTheWorksheet

www.youtube.com/@BeyondtheWorksheet

