

A COURSE CURRICULUM

A COMPLETE TEACHING BUNDLE

Algebra

One

Expressions, equations, functions, linear graphs, systems, exponents, polynomials, factoring, quadratics, and statistics — a full-year curriculum structured into ten sequenced units with guided notes, practice sets, assessments, midterm and final exams, plus five ready-to-use emergency substitute lesson plans.

EDITION **Corrected & Enhanced**
UNITS INCLUDED

01	Expressions, Properties & Order of Operations	02	Solving One- & Two-Step Equations & Inequalities
03	Multi-Step Equations, Variables on Both Sides & Literal Equations	04	Introduction to Functions, Function Notation & Domain/Range
05	Linear Functions: Slope, Intercepts & Graphing	06	Writing Linear Equations
07	Systems of Equations & Inequalities	08	Exponent Rules & Polynomial Operations
09	Factoring & Introduction to Quadratics	10	Statistics: Data Displays, Measures of Centre & Spread

10

UNITS

50+

PRACTICE SETS

2

MAJOR EXAMS

5

SUB PLANS

Algebra 1 • Complete Curriculum

UNITS 1 – 10 • MIDTERM • FINAL • SUB PLANS

UM Printables

CORRECTED & COMPLETE

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FULL-YEAR PACING GUIDE

This pacing guide distributes the ten units across 180 instructional days, including review, assessment, and buffer days. Each unit includes the recommended sequence of Guided Notes → Classwork → Homework (5 sets) → Quizzes (2) → Unit Test, with answer keys for every practice and assessment item.

Unit	Topic	Days
1	Expressions, Properties & Order of Operations	15
2	Solving One- and Two-Step Equations & Inequalities	17
3	Multi-Step Equations, Variables on Both Sides & Literal Equations	16
4	Introduction to Functions, Function Notation & Domain/Range	16
5	Linear Functions: Slope, Intercepts & Graphing	18
	<i>MIDTERM REVIEW & EXAM</i>	5
6	Writing Linear Equations	16
7	Systems of Equations & Inequalities	18
8	Exponent Rules & Polynomial Operations	16
9	Factoring & Introduction to Quadratics	18
10	Statistics: Data Displays, Measures of Centre & Spread	15
	<i>FINAL REVIEW & EXAM</i>	5
	<i>Buffer / Emergency Sub Days</i>	5
TOTAL		180

Pacing Tip

Each unit follows a consistent rhythm: **Day 1–3** introduce new concepts via Guided Notes with class discussion; **Day 4–8** pair Classwork practice with nightly Homework sets; **Day 9–11** use Homework 4–5 and Quiz 1 to surface misconceptions; **Day 12–14** spiral review with Quiz 2 and small-group reteach; **Day 15–16** administer the Unit Test. Use the buffer days at the end of each quarter for extension tasks, project-based learning, or makeup work.

UNIT 1 • GUIDED NOTES (continued)

Lesson 3: Order of Operations (PEMDAS)

★ Key Vocabulary

Parentheses — simplify everything inside grouping symbols first, working from the innermost grouping outward.

Exponents — evaluate powers and roots.

Multiplication and Division — perform these from **left to right** as they appear. They have equal priority; do not always multiply first.

Addition and Subtraction — also perform these from **left to right**.

Strategy: Grouping Symbols

Treat every set of parentheses, brackets, and braces as a mini-problem. Solve the contents of each group completely before moving on. If you see a fraction bar in an expression like $(3 + 4) / (2 - 1)$, evaluate both the numerator and denominator before dividing.

Example 5

Evaluate: $3 + 4 \times 2^2$.

Solution: Exponent first: $2^2 = 4$. Then multiply: $4 \times 4 = 16$. Then add: $3 + 16 = 19$.

Example 6

Evaluate: $(5 + 3) \times 2 - 4$.

Solution: Parentheses: $5 + 3 = 8$. Multiply: $8 \times 2 = 16$. Subtract: $16 - 4 = 12$.

⚠ Common Mistake

A common error is reading PEMDAS as “Multiply before Divide” or “Add before Subtract.” The M/D pair and the A/S pair each have **equal priority** and are evaluated left to right. For example, $12 \div 3 \times 2 = 4 \times 2 = 8$ (not $12 \div 6 = 2$).

📎 Try It

Evaluate: $8 \div 2 \times 4$.

Lesson 4: Evaluating Algebraic Expressions

Evaluating an algebraic expression means substituting specific values for the variables and then simplifying the resulting numeric expression using the Order of Operations. Always substitute the given value (including any negative sign) inside parentheses to keep signs organized.

Example 7

Evaluate $2x + 3y$ when $x = 4$ and $y = -1$.

Solution: Substitute: $2(4) + 3(-1)$. Multiply: $8 + (-3)$. Add: **5**.

★ Key Vocabulary

Slope-Intercept Form: $y = mx + b$, where m is the slope and b is the y-intercept (where the line crosses the y-axis).

Y-Intercept: The point where the line crosses the vertical y-axis. It always has coordinates $(0, b)$.

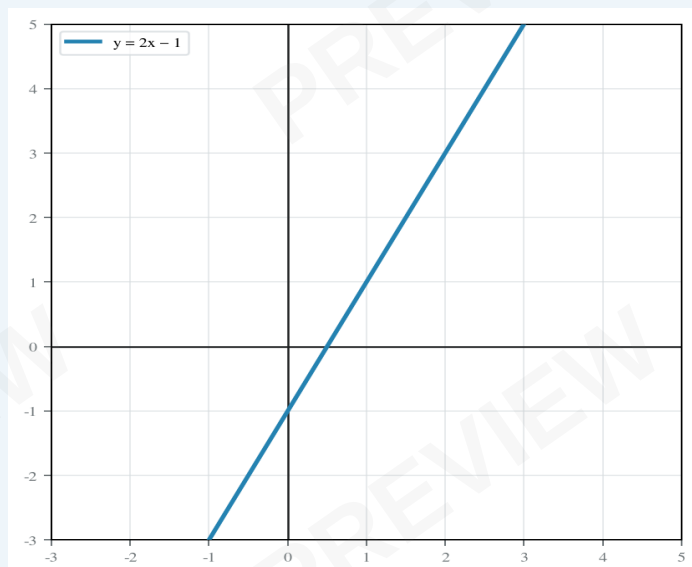
Strategy: Graphing in Slope-Intercept Form

Step 1. Plot the y-intercept b on the y-axis (the point $(0, b)$). **Step 2.** Use the slope m as rise/run — from b , move up (or down) by the rise and right by the run to find a second point. **Step 3.** Draw a straight line through both points, extending in both directions with arrows.

Example 3

Graph $y = 2x - 1$.

Solution: $m = 2$ (rise 2, run 1). $b = -1$ (plot at $(0, -1)$). Start at $(0, -1)$, go up 2 and right 1 to $(1, 1)$. Draw a line through both points.



Example 4

Identify the slope and y-intercept: $y = -3x + 4$.

Solution: $m = -3$, $b = 4$. The line crosses the y-axis at $(0, 4)$ and falls 3 units for every 1 unit it moves right.

⚠ Common Mistake

When the equation is rearranged (e.g., $y = 4 - x$), students often read m as $+1$. Rewrite as $y = -x + 4$ first, then identify $m = -1$, $b = 4$. The sign in front of the x -term belongs to the slope.

🔗 Try It

Identify the slope and y-intercept: $y = 4 - x$.

UNIT 7 • GUIDED NOTES

Name: _____ Date: _____ Period: _____

Lesson 1: Solving Systems by Graphing

★ Key Vocabulary

System of Equations: Two or more equations with the same variables, considered together.

Solution: The ordered pair (x, y) that satisfies BOTH equations. On a graph, this is the point of intersection.

Special Cases When Graphing

Parallel Lines: Same slope, different y-intercepts → the lines never intersect → **No Solution**.

Coincident Lines: Same slope AND same y-intercept → the lines lie on top of each other → **Infinite Solutions**.

Strategy: Graphical Solution Method

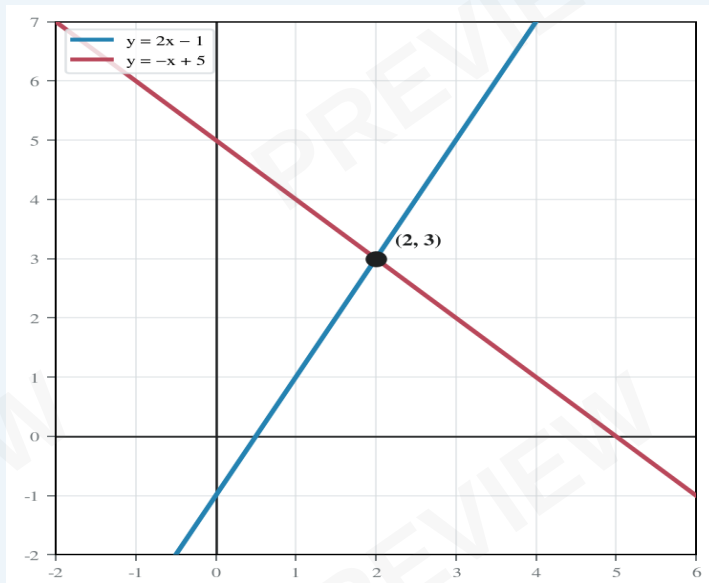
Step 1. Write each equation in slope-intercept form ($y = mx + b$). **Step 2.** Graph both lines on the same coordinate plane.

Step 3. Find the point where the two lines cross — that (x, y) is the solution. **Step 4.** If lines are parallel, no solution. If they coincide, infinite solutions.

Example 1

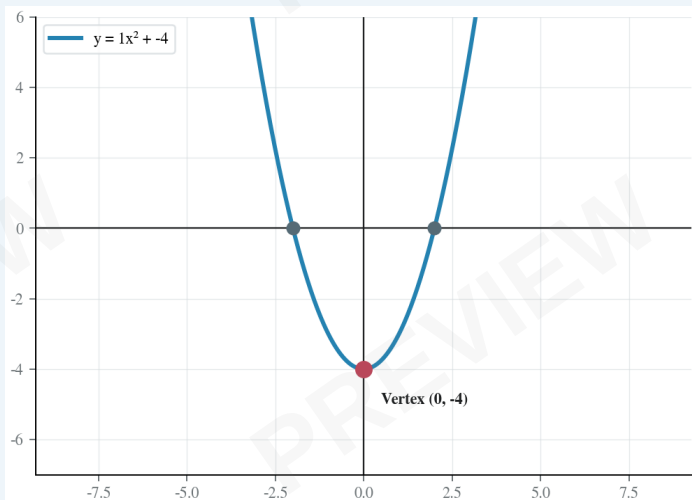
Solve by graphing: $y = 2x - 1$ and $y = -x + 5$.

Solution: Set them equal: $2x - 1 = -x + 5 \rightarrow 3x = 6 \rightarrow x = 2$. Substitute back: $y = 2(2) - 1 = 3$. Intersection at **(2, 3)**.



Try It

Solve by graphing: $y = x + 1$ and $y = -x + 3$.

Example 9Solve: $x^2 = 9$.**Solution:** Rewrite as $x^2 - 9 = 0$. Factor (difference of squares): $(x + 3)(x - 3) = 0$. $x = -3$ or $x = 3$.The graph of $y = x^2 - 9$ is a parabola opening upward with vertex at $(0, -9)$ and x -intercepts at $(-3, 0)$ and $(3, 0)$.**⚠ Common Mistake**

You cannot use the Zero-Product Property unless the equation is set equal to zero. The equation $x^2 - 5x + 6 = 2$ cannot be solved by factoring directly — first subtract 2 from both sides to get $x^2 - 5x + 4 = 0$, then factor.

📎 Try ItSolve: $x^2 + 7x + 12 = 0$.

★ Key Vocabulary

Range: The difference between the maximum and minimum values. $\text{Range} = \text{max} - \text{min}$.

Quartiles: Q1 = median of the lower half; Q2 = median of the whole data set; Q3 = median of the upper half.

Interquartile Range (IQR): $\text{IQR} = \text{Q3} - \text{Q1}$. The range of the middle 50% of the data.

Five-Number Summary: Min, Q1, Q2 (median), Q3, Max — the data behind every box plot.

Example 3

Find the five-number summary and IQR of: 2, 4, 6, 8, 10, 12, 14, 16.

Solution: Already sorted. Min = 2; Max = 16. Median (Q2) = $(8 + 10)/2 = 9$. Lower half (2, 4, 6, 8): $\text{Q1} = (4 + 6)/2 = 5$. Upper half (10, 12, 14, 16): $\text{Q3} = (12 + 14)/2 = 13$. $\text{IQR} = 13 - 5 = 8$.

✏ Try It

Find the five-number summary and IQR of: 5, 7, 9, 10, 12, 15, 18.

Lesson 3: Data Displays — Histograms & Box Plots

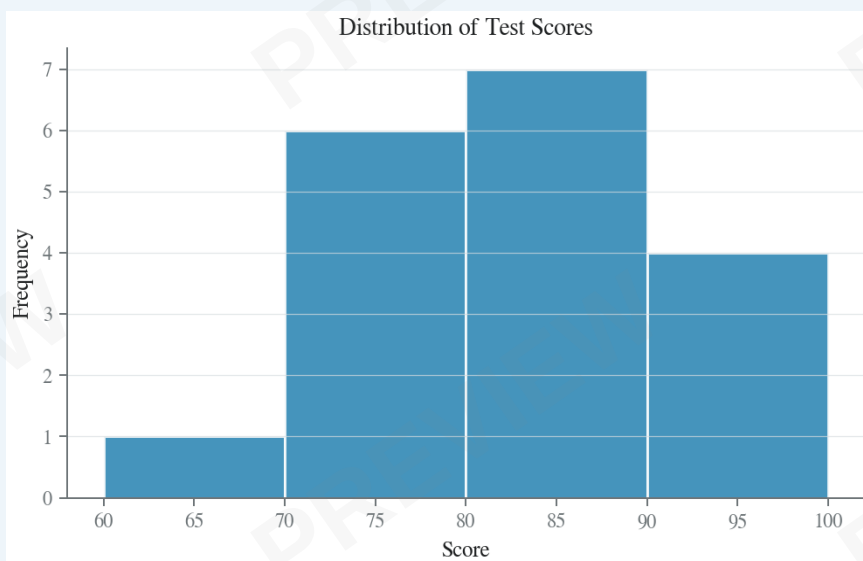
★ Key Vocabulary

Histogram: A bar graph showing the frequency of data in equal-sized intervals (bins). Bars touch (no gaps) because the data is continuous.

Box Plot (Box-and-Whisker): A graph of the five-number summary. The “box” spans Q1 to Q3 with a line at the median; “whiskers” extend out to Min and Max.

Example 4 — Reading a Histogram

The histogram below shows the distribution of test scores on a recent Algebra 1 exam.



Interpretation: Most students scored in the 80–89 range (5 students). The distribution is slightly left-skewed (a longer tail toward the lower scores). The modal interval is 80–89.

MIDTERM EXAM • UNITS 1–5

Name: _____ Date: _____ Period: _____

Time: 60–80 minutes. Show all work. Circle final answers. Calculator permitted on items marked ♦.

Part 1: Expressions, Properties & Order of Operations

1. Identify the variables, coefficients, and constants: $7a - 3b + 10$
2. Name the property: $(x + 8) + 2 = x + (8 + 2)$
3. Distribute: $-5(3x - 4)$
4. Evaluate: $6 + 4 \times 3^2$
5. Evaluate $3m - 2n$ when $m = 4$ and $n = -3$
6. Translate: “Four less than three times a number”
7. Simplify: $2(4x + 1) - 5x$
8. Name the property: $6 \cdot (1/6) = 1$
9. Evaluate: $(12 - 4) \div 2 + 5$
10. Translate: “The sum of a number and 6, divided by 4”
11. Simplify: $3(x - 2) + 4(x + 1)$
12. Evaluate $-2p^2 + q$ when $p = -3$ and $q = 7$

Part 2: Equations & Inequalities

13. Solve: $y - 9 = -4$
14. Solve: $-4x = 28$
15. Solve: $3x + 7 = 22$
16. Solve: $-2m + 5 = 17$
17. Solve: $4(x - 2) = 2x + 6$
18. Solve for w : $P = 2l + 2w$
19. Solve: $5x + 2 = 5x - 3$ (special case)
20. Solve and graph: $x + 4 \leq 1$
21. Solve and graph: $-3y < 12$
22. Solve and graph: $2x - 5 > 9$
23. Solve and graph: $-4(a - 2) \geq 16$
24. Solve for r : $I = prt$

Part 3: Functions & Linear Graphs ♦

25. Is $\{(2, 5), (3, 5), (4, 5)\}$ a function? Explain.
26. Find the domain and range of $\{(0, 1), (2, 3), (4, 5)\}$.
27. If $f(x) = 4x - 2$, find $f(-1)$.
28. Find the slope through $(-2, 3)$ and $(4, 1)$.
29. Graph $y = 2x - 3$. Identify m and b .
30. Find the x - and y -intercepts of $4x + 3y = 24$.
31. Is the graph of a vertical line a function? Why?
32. Is the equation $y^2 = x$ a function? Explain.
33. Find k if y varies directly with x and $y = 18$ when $x = 6$.
34. Write the equation of the line through $(0, -2)$ and $(3, 4)$.
35. Convert $y = -2/3x + 4$ to standard form.
36. Write the equation of a horizontal line through $(5, -7)$.
37. Is $y = 5x$ a direct variation? Why?

Answer Key: Quiz 1

1. $6x(x + 2)$
2. $(x + 7)(x + 2)$
3. $(x - 5)(x + 1)$
4. $(x + 8)(x - 8)$
5. $x = -3$ or $x = -4$

Answer Key: Quiz 2

1. $(2x + 1)(x + 4)$
2. $(x + 6)^2$
3. $x = 5$ or $x = 6$
4. $x = -7$ or $x = 7$
5. $x = 0$ or $x = -3$

Answer Key: Unit 9 Test

1. $5(x - 5)$
2. $4x(x + 2)$
3. $(x + 3)(x + 5)$
4. $(x - 4)(x - 7)$
5. $(x + 5)(x - 3)$
6. $(x - 8)(x + 2)$
7. $(2x + 1)(x + 4)$
8. $(3x - 2)(x - 4)$
9. $(x + 10)(x - 10)$
10. $(x + 8)^2$
11. $x = -1$ or $x = -4$
12. $x = 3$ or $x = 5$
13. $x = -6$ or $x = 6$
14. $x = 0$ or $x = -9$
15. $x = 1/2$ or $x = -2$
16. $(3x + 1)(3x - 1)$
17. $(x - 9)^2$
18. $x = -3$ (double root)
19. $x = -9$ or $x = 9$
20. $x = 0$ or $x = 4$

FINAL EXAM • UNITS 1–10

Name: _____ Date: _____ Period: _____

Time: 90–120 minutes. Show all work. Calculator permitted on items marked ♦.

Part 1: Expressions, Equations & Inequalities (Units 1–3)

1. Distribute: $-3(2x - 5)$
2. Evaluate: $5 + 4 \times 2^2$
3. Evaluate $3a - 2b$ when $a = 4$ and $b = -3$
4. Translate: “Twice a number, decreased by 7”
5. Name the property: $x \cdot 1 = x$
6. Solve: $4x - 9 = 19$
7. Solve: $-5y + 7 = -8$
8. Solve: $3(x + 4) = 2x + 5$
9. Solve: $4x - 2 = 4x + 6$ (special case)
10. Solve for y : $5x - 2y = 8$
11. Solve and graph: $2x + 3 \leq 11$
12. Solve and graph: $-4x > 12$
13. Solve and graph: $3(x - 2) > 9$
14. Solve for r : $A = P + Pr$
15. Simplify: $5(2x - 1) - 3(x + 4)$
16. Evaluate: $18 \div 3 \times 2$
17. Evaluate $p^2 - 2q$ when $p = -2$ and $q = 5$
18. Solve: $6 - x = -3$
19. Name the property: $4 + (-4) = 0$
20. Translate: “The quotient of a number and 5, plus 8”

Part 2: Functions & Linear Equations (Units 4–6) ♦

21. Is $\{(2, 5), (2, 7), (4, 1)\}$ a function? Explain.
22. Find the domain and range of $\{(0, 3), (1, 4), (2, 5)\}$.
23. If $g(x) = 3x^2 - 1$, find $g(-2)$.
24. Find the slope through $(1, 4)$ and $(5, 12)$.
25. Write the equation in slope-intercept form: $m = -2$, $b = 5$.
26. Find the x - and y -intercepts of $5x + 4y = 20$.
27. Write the equation of a horizontal line through $(3, -4)$.
28. Convert $y = 1/2x - 3$ to standard form.
29. Write the equation of a line parallel to $y = 4x + 1$ through $(2, 5)$.
30. Write the equation of a line perpendicular to $y = 2x + 3$ through $(4, -1)$.
31. If y varies directly with x and $y = 12$ when $x = 4$, find the equation.
32. Word problem: \$40 initial + \$15/hr $\rightarrow$ equation.
33. Identify m and b : $y = 6 - 3x$.
34. Is the graph of $x = 7$ a function? Why?
35. Find $f(0)$ if $f(x) = -4x + 9$.
36. Write the equation through $(1, 2)$ and $(3, 8)$.
37. Convert $2x + 3y = 12$ to slope-intercept form.
38. Does $y = 3x$ represent a direct variation? Why?
39. Slope of a vertical line?
40. Equation of a vertical line through $(-3, 5)$?

Part 3: Systems, Exponents, Polynomials, Factoring, Stats (Units 7–10) ♦

SUB PLAN 1 • ORDER OF OPERATIONS REVIEW

Name: _____ Date: _____ Period: _____

Directions: Evaluate each expression using PEMDAS. Show every step. No calculators.

1. $8 + 4 \times 5$
2. $(10 - 3) \times 4$
3. $12 \div 4 + 6$
4. $6 + 2^3 \times 3$
5. $(8 + 4) \div 3$
6. $20 - 2 \times 6 + 4$
7. $3^2 + 4^2$
8. $(15 - 5^2) + 8$
9. $50 \div (4 + 6)$
10. $2 \times (5 + 3)^2 - 10$
11. $7 + 3 \times 4 - 2^3$
12. $(9 - 2)^2 \div 7$

SUB PLAN 1 • ANSWER KEY

1. $8 + 20 = 28$
2. $7 \times 4 = 28$
3. $3 + 6 = 9$
4. $6 + 8 \times 3 = 6 + 24 = 30$
5. $12 \div 3 = 4$
6. $20 - 12 + 4 = 8 + 4 = 12$
7. $9 + 16 = 25$
8. $(15 - 25) + 8 = -10 + 8 = -2$
9. $50 \div 10 = 5$
10. $2 \times 64 - 10 = 128 - 10 = 118$
11. $7 + 12 - 8 = 19 - 8 = 11$
12. $49 \div 7 = 7$

A LOOK INSIDE THE BUNDLE

Everything You Need to Teach Algebra 1.

A complete, classroom-tested, print-ready curriculum — corrected and enhanced.

10

UNITS

146

PAGES

50+

PRACTICE SETS

180

DAY PACING

Ten Sequenced Units

01 Expressions & Properties

Variables, properties of real numbers, PEMDAS, translating words to algebra.

02 One- & Two-Step Equations

Inverse operations, inequalities, the flip rule, number-line graphing.

03 Multi-Step & Literal Equations

Distribution, variables on both sides, special solutions, formulas.

04 Functions & Domain/Range

Vertical Line Test, function notation $f(x)$, identifying functions.

05 Linear Functions & Graphing

Slope, intercepts, slope-intercept & standard form, direct variation.

06 Writing Linear Equations

Point-slope form, parallel & perpendicular lines, real-world modeling.

07 Systems of Equations

Graphing, substitution, elimination, systems of inequalities, word problems.

08 Exponents & Polynomials

Five exponent rules, scientific notation, add/subtract/multiply/divide polynomials.

09 Factoring & Quadratics

GCF, trinomials, AC method, special patterns, solve by factoring, parabolas.

10 Statistics & Data Displays

Mean, median, mode, range, IQR, MAD, histograms, box plots, scatter plots.

What's Included in Every Unit

- ✓ Expanded Guided Notes with worked examples
- ✓ 5 Homework Sets with full answer keys
- ✓ Unit Test (20 problems) with answer key
- ✓ Coordinate-plane & number-line graphs
- ✓ Classwork Practice (24 problems)
- ✓ Quiz 1 & Quiz 2 with answer keys
- ✓ Key Vocabulary & Common Mistake callouts
- ✓ Strategy boxes & Study Tips

CORRECTED & COMPLETE EDITION

Seven answer-key errors in the original have been re-verified and fixed (each marked inline).

Plus: a 37-question Midterm, a 60-question Final, and 5 Emergency Substitute Lesson Plans — all

Designed for classroom use

Print-ready · 8.5 × 11 in