

LINEAR FUNCTIONS & RELATIONSHIPS

Graphing Linear Equations from Table

Directions: Find your way through the maze by moving to the equation parallel or perpendicular to the one in the current box.

START

$y = 4x + 6$
Which line is PERPENDICULAR to this?

$y = -\frac{1}{4}x - 3$
Which line is PARALLEL to this?

$4y = x + 6$
Which line is PERPENDICULAR to this?

$8x + 2y = 24$
Which line is PARALLEL to this?

$12x + 3y = 9$
Which line is PARALLEL to this?

$2x + 8y = 8$
Which line is PERPENDICULAR to this?

$-8x + 2y = 12$
Which line is PERPENDICULAR to this?

$y = \frac{20}{5}x + 2$
Which line is PARALLEL to this?

$y = -\frac{16}{4}x - 1$
Which line is PERPENDICULAR to this?

$y - 4 = -\frac{1}{4}(x + 1)$
Which line is PERPENDICULAR to this?

$y = -4x + 2$
Which line is PARALLEL to this?

$100 = 10x + 40y$
Which line is PERPENDICULAR to this?

$16x = 4y - 2$
Which line is PARALLEL to this?

$-12x + 48y = 60$
Which line is PERPENDICULAR to this?

$y = -\frac{1}{4}x + 6$
Which line is PARALLEL to this?

$-20x + 5y = 20$
Which line is PARALLEL to this?

$3y = -12x + 9$
Which line is PARALLEL to this?

$60x - 15y = 120$
Which line is PERPENDICULAR to this?

$y = -\frac{12}{3}x - 3$
Which line is PARALLEL to this?

END
BEYOND THE WORKSHEET

Guided Practice:

Example: $y = 0.5x + 2$

1. Complete the table.

2. Plot the points.

3. Draw the line.

x	y

Help students develop a deep understanding of **linear functions and relationships** with this comprehensive unit. Students begin by identifying and evaluating functions before exploring slope, graphing linear equations using multiple methods, writing equations in different forms, parallel and perpendicular lines, real-world linear applications, and scatter plots with lines of best fit.

Throughout the unit, students strengthen their graphing skills while making meaningful connections between equations, tables, graphs, and real-world situations.

learn more!

WARM-UPS & EXIT TICKETS

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

Name: _____

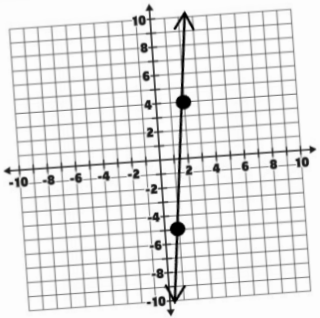
Date: _____

exit ticket

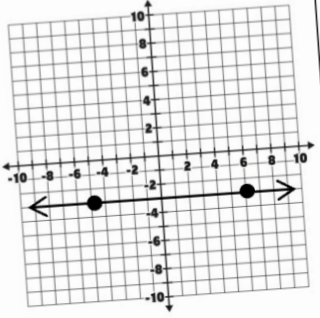
Lesson 2: Calculating Slope

Skill: Finding Slope from Graphs

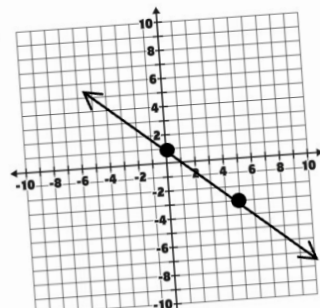
1) Find the slope of the line.
Express the slope as a fraction in simplest form.



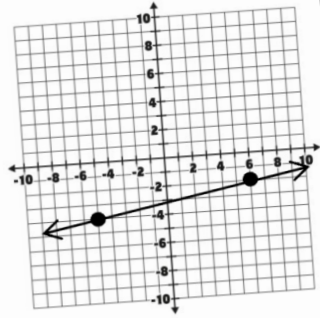
2) Find the slope of the line.
Express the slope as a fraction in simplest form.



3) Find the slope of the line.
Express the slope as a fraction in simplest form.



4) Find the slope of the line.
Express the slope as a fraction in simplest form.



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Name: _____

Date: _____

warm up

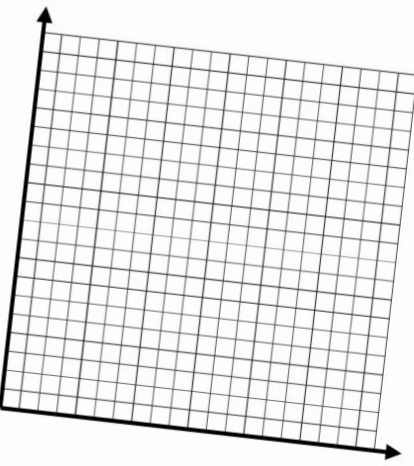
Lesson 8: Scatter Plots and Line of Best Fit

Skill: Creating Scatter Plots

Directions: Create a scatter plot for the relationships represented in each table.

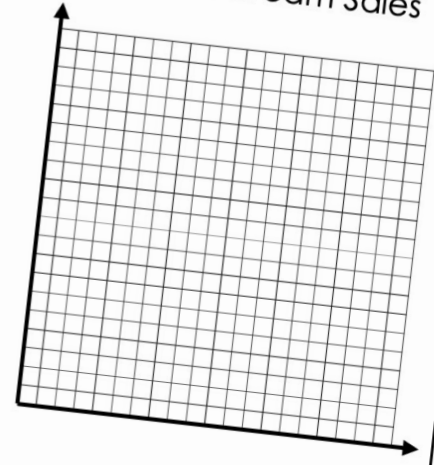
1) Items Sold and Earnings

Items	\$
2	12
4	30
2	15
6	30
8	50
12	70
8	40



2) Outside Temperature and Ice Cream Sales (units sold)

Temp °F	# Sold
70	85
80	90
60	70
50	70
40	50
80	80
75	75



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Name: _____

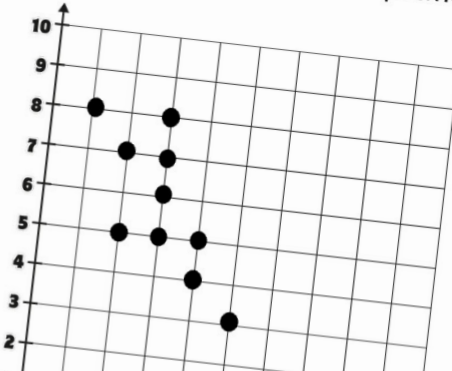
Date: _____

warm up

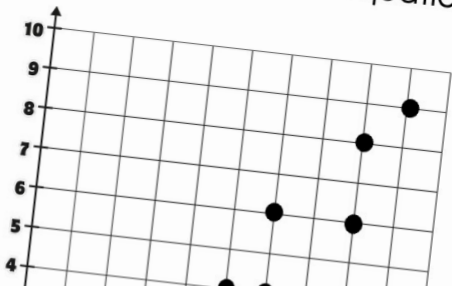
Lesson 8: Scatter Plots and Line of Best Fit

Skill: Line of Best Fit

Draw a line of best fit and write an equation for the line.



2) Draw a line of best fit and write an equation for the line.

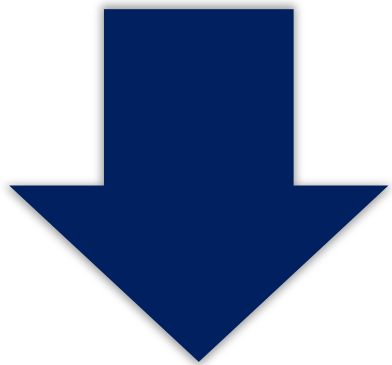


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STUDENT FRIENDLY NOTES

- This unit is a full review unit of key skills necessary for success in Algebra 1.
 - The notes provide students with a place to review the proper steps for each operation as well as guided practice.
- 



FRIENDLY NOTES

Full review unit of key concepts for success in

Provide students with a clear understanding of the proper steps for solving problems as well as guided practice.

FUNCTIONAL RELATIONSHIPS NOTES

Name: _____ Date: _____

What is a Function?

- _____
- _____

Functional and Linear Relationships:

Functional Relationships	Non-Functional Relationships	Linear Relationships	Non-Linear Relationships

Identifying Functions From:

x			
y			

Graphing a Linear Function

PARALLEL & PERPENDICULAR LINES notes

Name: _____ Date: _____

Parallel Lines:

- Two different lines in the same plane are _____ if they do not intersect.
- In a coordinate plane, any two _____ or _____ lines are parallel.
- Any two non-vertical lines are parallel only if they have the same _____.
- Example: $y = 2x + 3$ and $y = 2x - 7$

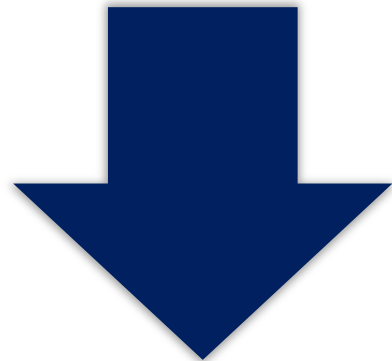
Practice:

1. Which two equations represent parallel lines?

a) $-x + 4y = 8$ b) $-2x + 8y = -16$ c) $-4x + y = 4$

PRACTICE WORKSHEETS

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



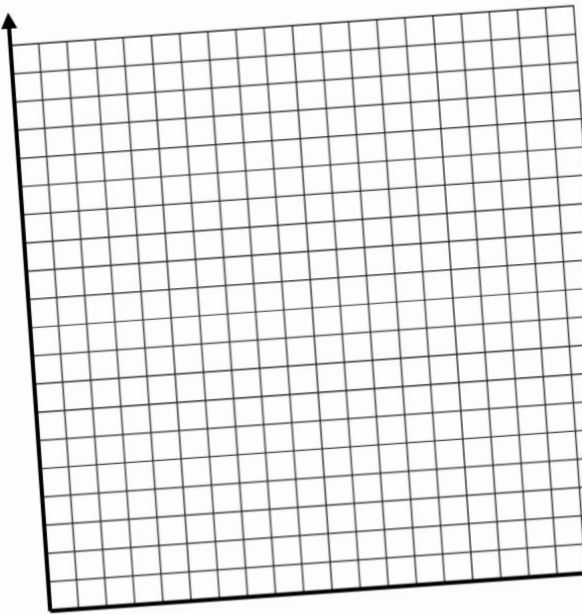
Name: _____ Date: _____

LINEAR EQUATIONS APPLICATIONS

practice

1. Josiah joined a gym and paid a \$20 membership fee. Every three months he pays \$60 to continue to be a member. Let x represent the number of months he is a member and y represent the total he has paid for his membership.

- Write an equation to represent this situation.
- Identify the slope and y -intercept.
- Graph.
- How much will he have paid after 5 months?
After two years?



2. The value of a new car is \$20,000. Every two years the value drops \$2,500. Let x represent the age of the car in years and y represent the value of the car.

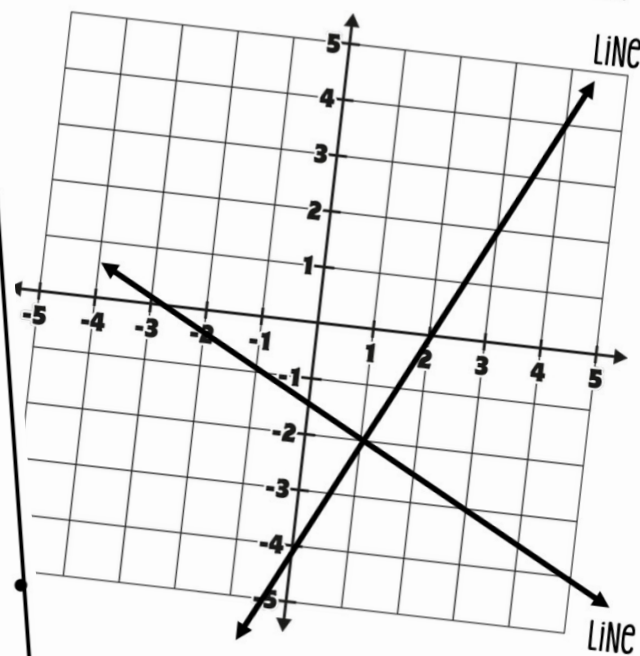
Name: _____ Date: _____

FINDING SLOPE FROM GRAPH

practice

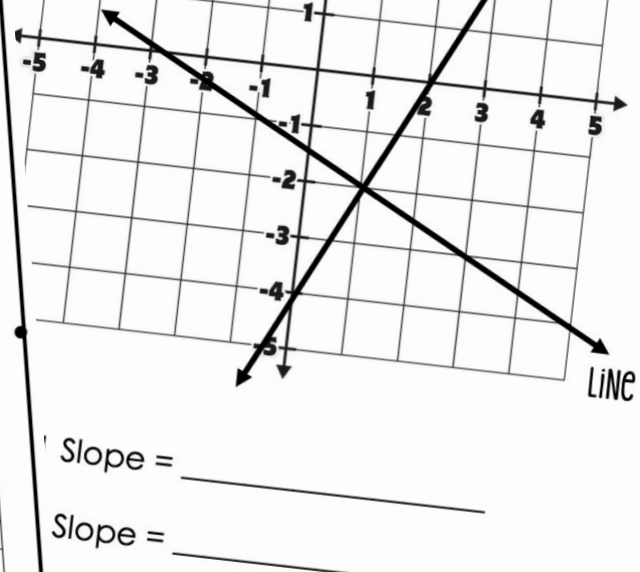
Directions: Find the slope of each line.

Line 1



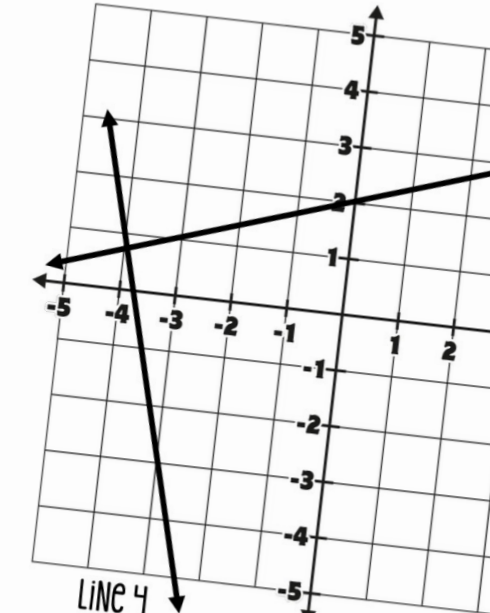
Slope = _____

Line 2



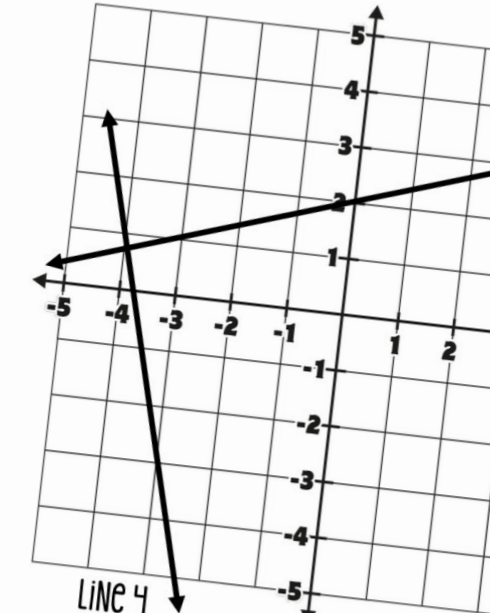
Slope = _____

Line 3



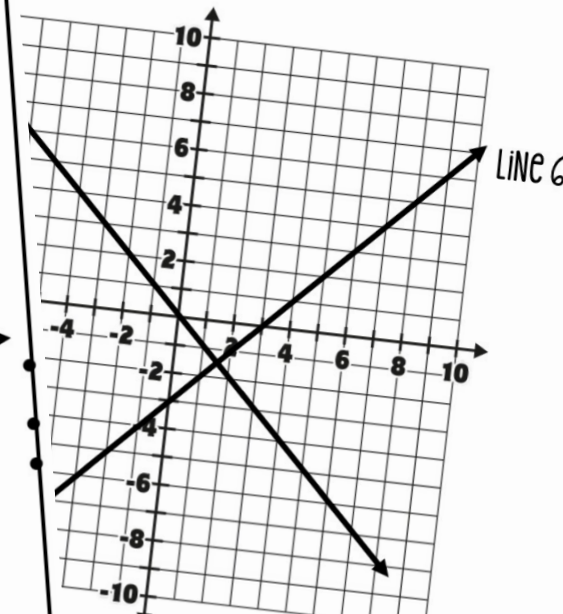
Line 3 Slope = _____

Line 4

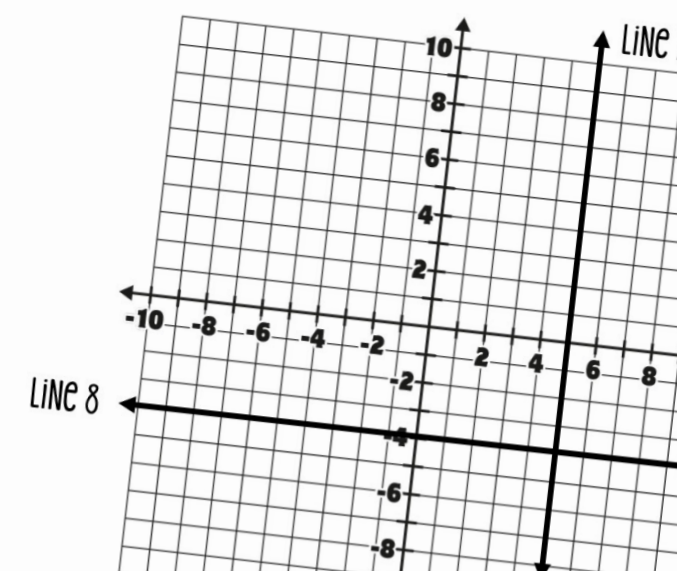


Line 4 Slope = _____

Line 6



Line 8



ACTIVITIES AND ASSESSMENTS

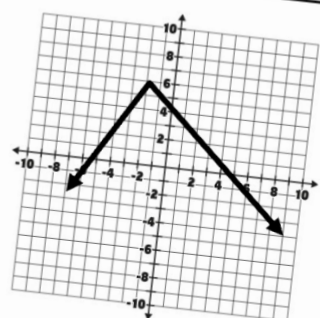
- Each lesson includes an activity such as a maze, coloring pages, etc.
- Pre and Post-Assessments are included along with quizzes.

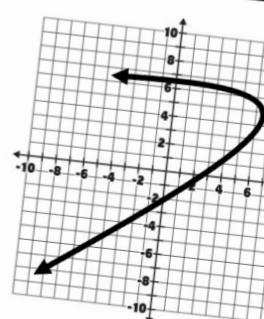


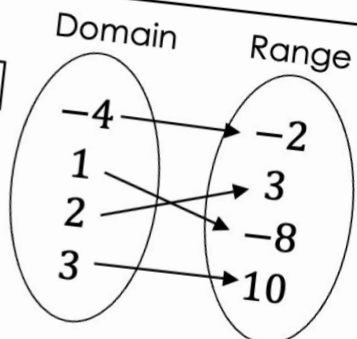
Name: _____ Score: _____

LINEAR FUNCTIONS & RELATIONSHIPS

For #1 – 4: Classify each relationship as a function or not a function. Identify the domain and range. If the relationship is a function, state whether it is linear.

1.  Function? ☐ yes ☐ no Linear? ☐ yes ☐ no Domain: _____ Range: _____

2.  Function? ☐ yes ☐ no Linear? ☐ yes ☐ no Domain: _____ Range: _____

3.  Domain Range
yes no
no
Function? ☐ yes ☐ no Linear? ☐ yes ☐ no Domain: _____ Range: _____

4. $\{(2, -2), (-4, 10), (-8, 8), (-12, -3)\}$
Function? ☐ yes ☐ no Linear? ☐ yes ☐ no Domain: _____ Range: _____

5. Evaluate each function for the given value or find the value that makes the function true.
find $f(-4)$.

6. If $f(m) = \frac{m}{4} - 3$, find $f(30)$.

Name: _____ Date: _____

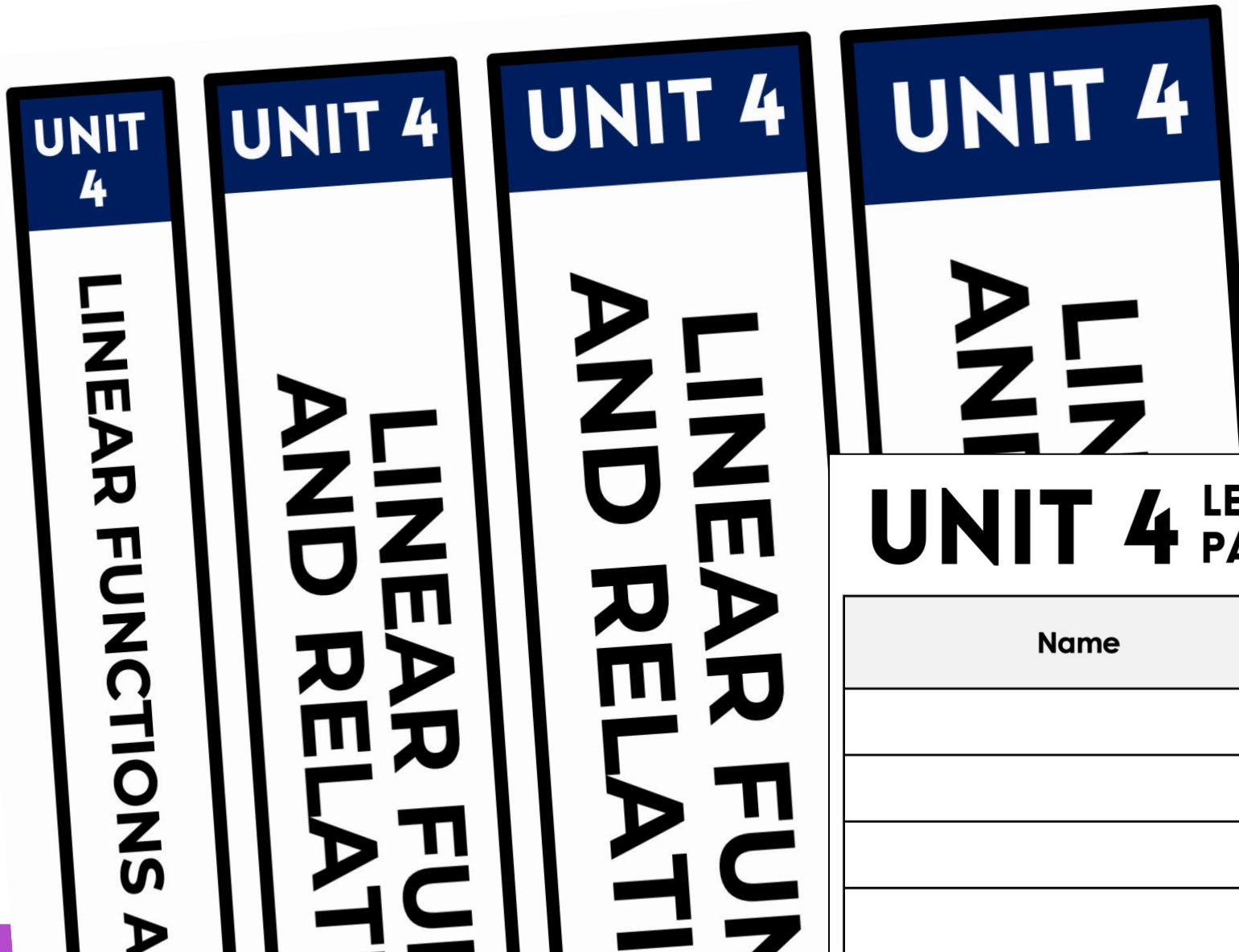
EVALUATING FUNCTIONS

Directions: Evaluate each function. Find your answer in one of the three columns. Find the problem number on the coloring page and color each section with the number the color that corresponds to your answer.

#	Function	Answer 1	Answer 2	Answer 3
1	$g(x) = 2x - 9 ; g(3)$	$g(3) = 14$ BLUE	$g(3) = -3$ PURPLE	$g(3) = -12$ YELLOW
2	$k(x) = x^3 + 7 ; k(4)$	$k(4) = 19$ RED	$k(4) = 50$ BLACK	$k(4) = 71$ ORANGE
3	$f(x) = \frac{x}{2} + 7 ; f(-3)$	$f(-3) = 8.5$ BLUE	$f(-3) = 5.5$ GREEN	$f(-3) = 1$ RED
		$k(2) = -12$ ORANGE	$k(2) = 12$ YELLOW	$k(2) = -6$ PURPLE

TEACHER RESOURCES

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



ALGEBRA 1 CURRICULUM PAC

UNIT 4 – LINEAR FUNCTIONS & RELATIONS

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.

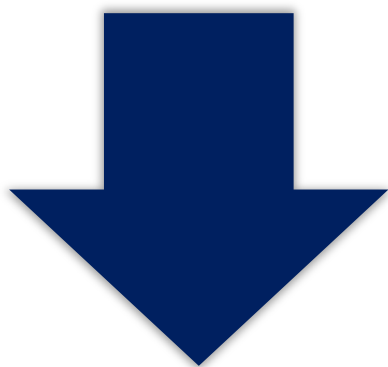
Day 1 Topic: Unit Prep Resources: • Unit 1 Pre-Assessment	Day 2 Topic: Identifying & Evaluating Functions Resources: • Warm Up • Functional Relationships Notes • Identifying Functions Graphic Organizer • Identifying Functions Practice Worksheet • Exit Ticket	Day 3 Topic: Identifying & Evaluating Functions Resources: • Warm Up • Evaluating Functions • Evaluating Functions Practice Worksheet • Exit Ticket
Day 4 Topic: Identifying & Evaluating Functions Resources: • Warm Up • Graphing Functional Relationships Notes • Graphing Functional Relationships Practice Worksheet • Exit Ticket	Day 5 Topic: Identifying & Evaluating Functions Resources: • Warm Up • Finish notes and practice • Evaluating Functions Coloring Worksheet • Exit Ticket	Day 6 Topic: Calculating Slope Resources: • Warm Up • Exploring Slope on a Graph • Slope and Rate of Change Notes • Slope and Rate of Change Practice • Exit Ticket

UNIT 4 LESSON 6 PARALLEL AND PERPENDICULAR LINES

Name	Warm Ups		Parallel & Perpendicular Notes	Parallel & Perpendicular Practice	Parallel & Perpendicular Maze	Exit Ticket

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 4

ALGEBRA 1

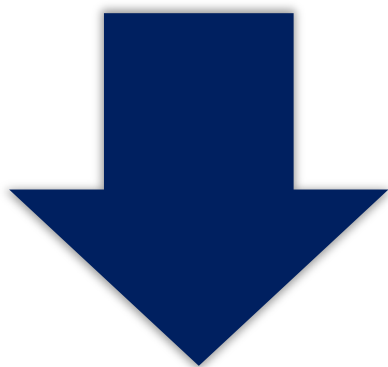
curriculum
BEYOND THE WORKSHEET

Linear Functions and Relationships

Lesson	Resources
Unit Prep (pgs. 7 – 13)	• Weekly Warm Up Sheet • Exit Tickets • Lesson Plan Template • Vocabulary Sheets • Pre-Assessment
(1) Identifying and Evaluating Functions (pgs. 14 – 30)	• 4 Warm Ups • Functional Relationships Notes • Identifying Functions Graphic Organizer • Identifying Functions Fold and Flip Notes • Identifying Functions Practice Worksheet – 2 pages • Evaluating Functions Notes • Evaluating Functions Practice Worksheet • Graphing Functional Relationships Notes • Graphing Functional Relationships Practice Worksheet • 4 Exit Tickets • Supplemental Resources • Evaluating Functions Coloring Worksheet
(2) Calculating Slope (pgs. 31 – 51)	• 4 Warm Ups • Exploring Slope on a Graph • Slope and Rate of Change Notes • Types of Slope Fold and Flip Notes • Finding Slope From Fold and Flip Notes • Finding Slope From Graphs Practice Worksheet • Slope from Two Points Practice Worksheet • Slope and Rate of Change Practice • Slope Applications Notes • Slope Applications Practice • 4 Exit Tickets • Supplemental Resources • Slope Board Game • Slope From Two Points Coloring Page • Slope Task Cards
(3) Graphing Linear Relationships Using Tables and Slope-Intercept Form (pgs. 52 – 66)	• 4 Warm Ups • Graphing Linear Equations From Tables Notes • Graphing Linear Equations From Tables Practice • Slope-Intercept Form Notes • Slope and y-intercept Graphic Organizers • Slope-Intercept Practice Worksheets • Slope-Intercept Form Riddle • 4 Exit Tickets • Supplemental Resources • Slope-Intercept Form Coloring Worksheet

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 4

ALGEBRA 1

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BEYOND THE WORKSHEET

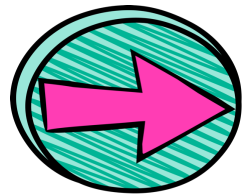
Linear Functions and Relationships

Lesson	Resources
(4) Graphing Linear Relationships Using Intercepts (pgs. 67 – 72)	• 2 Warm Ups • Graphing Linear Equations Using Intercepts Notes • Graphing Linear Equations Using Intercepts Practice • 2 Exit Tickets
(5) Graphing Linear Relationships Using Point-Slope Form (pgs. 73 – 81)	• 2 Warm Ups • Point-Slope Form Notes • Point-Slope Form Practice • Graphing Review Worksheet • Graphing and Slope Quiz • 2 Exit Tickets • Supplemental Resources in Folder • Point-Slope and Slope-Intercept Matching Activity
(6) Parallel and Perpendicular Lines (pgs. 82 – 89)	• 2 Warm Ups • Parallel and Perpendicular Lines Notes • Parallel and Perpendicular Lines Practice Worksheets • Parallel and Perpendicular Lines Maze • 2 Exit Tickets
(7) Graphing Linear Equations Applications (pgs. 90 – 97)	• 1 Warm Up • Graphs & Linear Applications Notes • Graphing Linear Equations Applications • Applications and Parallel/Perpendicular Lines Quiz • 1 Exit Ticket
(8) Scatter Plots and Line of Best Fit (pgs. 98 – 110)	• 4 Warm Ups • Constructing and Interpreting Scatter Plots Notes • Constructing Scatter Plots Practice Worksheet • Interpreting Scatter Plots Practice Worksheets • Line of Best Fit Notes • Line of Best Fit Practice • Scatter Plots and Line of Best Fit Quiz • 4 Exit Tickets
End of Unit (pgs. 111 – 117)	• Study Guide • Unit Exam

Have questions?



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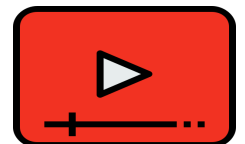
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