

LINEAR AND FUNCTIONAL RELATIONSHIPS

Name _____ Date _____

WARM UP #1

Lesson 2: Linear and Functional Relationships

Skill: Plotting Points on a Coordinate Plane

1) Plot the points from the table.

x	y
-6	-9
-4	-5
0	3

2) Draw a line through the points. What is the slope of this line?

SLOPE AND RATE OF CHANGE

Lesson 1

Source: 8th Unit 3, Lesson 1: Slope and Rate of Change

Suggested Class Time: 4 days

The Big Idea

This is a complete lesson and practice for slope and rate of change from tables, graphs and equations in real-life situations.

Standards

CCSS

8.F.3: Interpret the equation $y = mx + b$ as defining a linear function whose graph is a straight line; give examples of functions that are not linear.

8.F.4: Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or two two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models or in terms of a graph or a table of values.

8.F.5: Describe qualitatively the functional relationship between two quantities by analyzing a graph. Interpret the unit rate qualitatively in terms of a proportional relationship.

Name _____ Date _____

NOTES

SLOPE-INTERCEPT FORM

Slope Review

The steepness of the line is the ratio of the vertical change to the horizontal change, or "rise over run". This ratio is the slope of a line. Another term for slope is "rate of change".

There are four different types of slope: (Sketch an example of each)

Undefined Slope Zero Slope

COMPARING LINEAR FUNCTIONS

1) Harrison can purchase 4 DVDs for \$19.99 or 6 DVDs for \$22.50. Which is the better deal?

2) Circle the function with the greatest rate of change.

x	y
-2	-4
-1	-2
0	0
1	2

SLOPE-INTERCEPT FORM

Objectives:

- Graph a linear equation in slope-intercept form.
- Graph and interpret equations in slope-intercept form that model real-life situations.

For #1 – 4: Identify the slope and y-intercept for each graph shown below.

1) Movie Tickets

2) Popcorns Bought

QUIZ

3) Circle the function with the smallest rate of change.

x	y
5	-1
4	-2
3	-3
2	-4

Name _____ Date _____

EXIT TICKET #3

Lesson 1: Slope and Rate of Change

Skill: Slope Applications

1) A truck driver was 75 miles from home after 1.5 hours, 300 miles from home after 6 hours and 750 miles from home after 15 hours. Identify the rate of change. Explain what the rate of change means in the context of the problem.

2) Adelaide rented a bicycle at the beach. She paid a \$5 rental fee, which was included in the total of \$8 for her three-hour rental. Find the rate of change.

Name _____ Date _____

ASSESSMENT

LINEAR AND FUNCTIONAL RELATIONSHIPS

Identify each slope.

2) $y = -x + 3$

4) _____

UNIT 3 QUIZ
SLOPE-INTERCEPT FORM

Slope-Intercept Form Quiz

lindsayperro@gmail.com Switch account

* Required

Email *

Your email

unit
3

LINEAR AND FUNCTIONAL RELATIONSHIPS

Vocabulary

- | | |
|---|--|
| <ul style="list-style-type: none">• Coordinate plane• Domain• Function• Graph of a function• Input• Linear | <ul style="list-style-type: none">• Non-linear• Ordered pair• Rate of change• Slope• Unit rate |
|---|--|

Objectives

- Identify and contextualize slope and rate of change from tables, graphs and equations in real-life situations.
- Identify, describe and graph functional relationships
- Solve problems involving linear relationships
- Model linear relationships in real-life situations
- Represent linear equations using words and tables.
- Solve problems involving linear relationships
- Represent linear equations using words, tables, and graphs.
- Understand and write equations in slope-intercept form.
- Represent linear equations using equations and graphs.
- Identify, write, and solve linear and functional relationships presented in real-life situations.

Standards

CCSS

- 8.F.1
- 8.F.2
- 8.F.3
- 8.F.4
- 8.F.5
- 8.EE.5
- 8.EE.6

TEKS

- 8.4(A)
- 8.4(C)
- 8.5(B)
- 8.5(G)
- 8.5(H)
- 8.5(I)
- A.2(A)
- A.3.(B)

8TH GRADE MATH CURRICULUM - UNIT 3

LINEAR AND FUNCTIONAL RELATIONSHIPS

Lesson	Resources
Unit Prep pages (3 – 11)	• Vocabulary Page • Warm Up Page • Unit Pre-Assessment
1) Slope and Rate of Change pages (12 – 32)	• 4 Warm-Ups • Slope and Rate of Changes Notes • Slope and Rate of Change Guided Practice • Slope Applications Notes • Slope Applications Practice • Types of Slope Fold and Flip Notes • Slope on a Graph Visual Approach • "Finding Slope From" Fold and Flip Notes • Finding Slope from Graphs Practice • Slope from Two Points Practice • Slope and Rate of Change Practice (2 pages) • 4 Exit Tickets
2) Properties of Linear and Functional Relationships pages (33 – 49)	• 3 Warm-Ups • Functional Relationships Notes • "Identifying Functions From" Fold and Flip Notes • Identifying Functions Practice • Linear Relationships Notes • "Identifying Linear Relationships From" Fold and Flip Notes • Identifying Linear Relationships Practice • Graphing Functions Explore • Graphing Functions Practice • 3 Exit Tickets
3) Graphing Linear Functions From Tables pages (50 – 57)	• 2 Warm-Ups • Graphing Linear Functions from Tables Notes • Comparing Linear Functions Notes (2 pages) • Graphing Linear Functions from Tables Practice • Comparing Linear Functions Practice • 2 Exit Tickets
4) Writing, Using and Graphing with Slope-Intercept Form pages (58 – 73)	• 3 Warm-Ups • Slope-Intercept Form Notes (2 pages) • Slope-Intercept Form Fold and Flip Notes • Y-Intercept and Slope Graphic Organizers • Slope-Intercept Form Practice (2 pages) • Slope-Intercept Form Quiz (2 pages) • 3 Exit Tickets
5) Linear Relationship Applications pages (74 – 79)	• 1 Warm-Up • Linear Relationship Applications Practice (3 pages) • 1 Exit Ticket
End of Unit pages (80 – 84)	• Review Sheet • Unit Post-Assessment (3 pages)

TEACHER RESOURCES

8TH GRADE MATH CURRICULUM - UNIT 3

LINEAR AND FUNCTIONAL RELATIONSHIPS

DAY 1 TOPIC: Unit Prep RESOURCES: • Unit 2 Review Activity (teacher choice) • Unit 3 Pre-Assessment	DAY 2 TOPIC: Slope and Rate of Change RESOURCES: • L1 Warm Up 1 • Slope and Rate of Change Notes • Slope and Rate of Change Guided Practice • Exit Ticket 1	DAY 3 TOPIC: Slope and Rate of Change RESOURCES: • L1 Warm Up 2 • Slope Applications Notes • Slope Applications Practice • Types of Slope Fold and Flip Notes • Exit Ticket 2
DAY 4 TOPIC: Slope and Rate of Change RESOURCES: • L1 Warm Up 3 • Slope on a Graph Visual Approach	DAY 5 TOPIC: Slope and Rate of Change RESOURCES: • L1 Warm Up 4 • Slope from Two Points	DAY 6 TOPIC: Properties of Linear and Functional Relationships RESOURCES: • L1 Warm Up 5

Approach

- Finding Slope

Visual Approach

WARM UP #1

SLOPE ON A GRAPH

Lesson 1: Slope and Rate of Change

Skill: Plotting Points on a Coordinate Plane

Graph each of the given ordered pairs on a coordinate plane.

1. Plot the following points:

- (-3, 1)
- (-2, 0)
- (-1, 2)
- (0, 1)
- (1, 0)
- (2, 1)
- (3, 0)

2. Identify which quadrant each of the following points would be in.

- (11, -3) = Quadrant _____
- (-3, -3) = Quadrant _____
- (4, 1) = Quadrant _____
- (2, 5) = Quadrant _____
- (5, 5) = Quadrant _____
- (4, 5) = Quadrant _____
- (5, -3) = Quadrant _____
- (-11, 4) = Quadrant _____

Example: Using the line on the graph, the hypotenuse, create a triangle using points B and C. Create another triangle using Points A and D.

1. Are the two triangles similar, identical or neither?

2. What is the connection?

CURRICULUM

8TH GRADE MATH CURRICULUM
**LINEAR AND
 FUNCTIONAL
 RELATIONSHIPS**

NAME _____ Date _____

PRACTICE

COMPARING LINEAR FUNCTIONS

Lesson 4: Slope-Skitt Slope

Search each type of slope. Provide a brief description.

1) Positive Slope 2) Negative Slope

1) Which line is the steepest?
 a) $y = 2x + 3$
 b) $y = -4x + 1$
 c) $y = 5x - 2$
 d) $y = -1x + 0$

2) Which function has the greatest rate of change?
 a) $f(x) = 3x + 2$
 b) $g(x) = -5x + 1$
 c) $h(x) = 7x - 4$

UNIT VO

UNIT VOCABULARY

LINEAR AND FUNCTIONAL RELATIONSHIPS

Coordinate Plane	
Domain	
Function	
Graph of a Function	
Input	

Name _____

Week of _____ to _____

Date:	
Date:	
Date:	

8TH GRADE MATH CURRICULUM - UNIT 3

LINEAR AND FUNCTIONAL RELATIONSHIPS

Student Tracking

Name	Pre-Assessment	Assessments	Notes



UNIT 3 LESSON 1

Close

UNIT 3 LESSON 1
SLOPE AND RATE OF CHANGE

Student Tracking

[illegible]

LINEAR AND FUNCTIONAL

3 **LINEAR AND FUNCTIONAL RELATIONSHIPS**

unit
3
**LINEAR AND
RELATIONSHIPS**

LINE
3
with

LINEAR AND FUNCTIONAL RELATIONSHIP

Standard(s): _____

Student Materials:

☐ Calculator	☐ Scissors	☐ Compass	☐
☐ Colored pencils	☐ Glue	☐ Graph paper	☐
☐ Ruler	☐ Protractor	☐ Dry erase	☐

Lesson Progression: _____

Date(s): _____

SLOPE AND RATE OF CHANGE

lezione
1

Resource: 8th Unit 3, Lesson 1: Slope and Rate of Change
Suggested Class Time: 4 days

The Big Idea
 This is a complete lesson and practice for slope and rate of change. Students will identify and contextualize slope and rate of change from tables, graphs and equations in real-life situations.

Standards
CCSS
 8.EE.8.A.1, 8.EE.8.A.2, 8.EE.8.A.3, 8.EE.8.A.4, 8.EE.8.A.5, 8.EE.8.A.6, 8.EE.8.A.7, 8.EE.8.A.8, 8.EE.8.A.9, 8.EE.8.A.10, 8.EE.8.A.11, 8.EE.8.A.12, 8.EE.8.A.13, 8.EE.8.A.14, 8.EE.8.A.15, 8.EE.8.A.16, 8.EE.8.A.17, 8.EE.8.A.18, 8.EE.8.A.19, 8.EE.8.A.20, 8.EE.8.A.21, 8.EE.8.A.22, 8.EE.8.A.23, 8.EE.8.A.24, 8.EE.8.A.25, 8.EE.8.A.26, 8.EE.8.A.27, 8.EE.8.A.28, 8.EE.8.A.29, 8.EE.8.A.30, 8.EE.8.A.31, 8.EE.8.A.32, 8.EE.8.A.33, 8.EE.8.A.34, 8.EE.8.A.35, 8.EE.8.A.36, 8.EE.8.A.37, 8.EE.8.A.38, 8.EE.8.A.39, 8.EE.8.A.40, 8.EE.8.A.41, 8.EE.8.A.42, 8.EE.8.A.43, 8.EE.8.A.44, 8.EE.8.A.45, 8.EE.8.A.46, 8.EE.8.A.47, 8.EE.8.A.48, 8.EE.8.A.49, 8.EE.8.A.50, 8.EE.8.A.51, 8.EE.8.A.52, 8.EE.8.A.53, 8.EE.8.A.54, 8.EE.8.A.55, 8.EE.8.A.56, 8.EE.8.A.57, 8.EE.8.A.58, 8.EE.8.A.59, 8.EE.8.A.60, 8.EE.8.A.61, 8.EE.8.A.62, 8.EE.8.A.63, 8.EE.8.A.64, 8.EE.8.A.65, 8.EE.8.A.66, 8.EE.8.A.67, 8.EE.8.A.68, 8.EE.8.A.69, 8.EE.8.A.70, 8.EE.8.A.71, 8.EE.8.A.72, 8.EE.8.A.73, 8.EE.8.A.74, 8.EE.8.A.75, 8.EE.8.A.76, 8.EE.8.A.77, 8.EE.8.A.78, 8.EE.8.A.79, 8.EE.8.A.80, 8.EE.8.A.81, 8.EE.8.A.82, 8.EE.8.A.83, 8.EE.8.A.84, 8.EE.8.A.85, 8.EE.8.A.86, 8.EE.8.A.87, 8.EE.8.A.88, 8.EE.8.A.89, 8.EE.8.A.90, 8.EE.8.A.91, 8.EE.8.A.92, 8.EE.8.A.93, 8.EE.8.A.94, 8.EE.8.A.95, 8.EE.8.A.96, 8.EE.8.A.97, 8.EE.8.A.98, 8.EE.8.A.99, 8.EE.8.A.100, 8.EE.8.A.101, 8.EE.8.A.102, 8.EE.8.A.103, 8.EE.8.A.104, 8.EE.8.A.105, 8.EE.8.A.106, 8.EE.8.A.107, 8.EE.8.A.108, 8.EE.8.A.109, 8.EE.8.A.110, 8.EE.8.A.111, 8.EE.8.A.112, 8.EE.8.A.113, 8.EE.8.A.114, 8.EE.8.A.115, 8.EE.8.A.116, 8.EE.8.A.117, 8.EE.8.A.118, 8.EE.8.A.119, 8.EE.8.A.120, 8.EE.8.A.121, 8.EE.8.A.122, 8.EE.8.A.123, 8.EE.8.A.124, 8.EE.8.A.125, 8.EE.8.A.126, 8.EE.8.A.127, 8.EE.8.A.128, 8.EE.8.A.129, 8.EE.8.A.130, 8.EE.8.A.131, 8.EE.8.A.132, 8.EE.8.A.133, 8.EE.8.A.134, 8.EE.8.A.135, 8.EE.8.A.136, 8.EE.8.A.137, 8.EE.8.A.138, 8.EE.8.A.139, 8.EE.8.A.140, 8.EE.8.A.141, 8.EE.8.A.142, 8.EE.8.A.143, 8.EE.8.A.144, 8.EE.8.A.145, 8.EE.8.A.146, 8.EE.8.A.147, 8.EE.8.A.148, 8.EE.8.A.149, 8.EE.8.A.150, 8.EE.8.A.151, 8.EE.8.A.152, 8.EE.8.A.153, 8.EE.8.A.154, 8.EE.8.A.155, 8.EE.8.A.156, 8.EE.8.A.157, 8.EE.8.A.158, 8.EE.8.A.159, 8.EE.8.A.160, 8.EE.8.A.161, 8.EE.8.A.162, 8.EE.8.A.163, 8.EE.8.A.164, 8.EE.8.A.165, 8.EE.8.A.166, 8.EE.8.A.167, 8.EE.8.A.168, 8.EE.8.A.169, 8.EE.8.A.170, 8.EE.8.A.171, 8.EE.8.A.172, 8.EE.8.A.173, 8.EE.8.A.174, 8.EE.8.A.175, 8.EE.8.A.176, 8.EE.8.A.177, 8.EE.8.A.178, 8.EE.8.A.179, 8.EE.8.A.180, 8.EE.8.A.181, 8.EE.8.A.182, 8.EE.8.A.183, 8.EE.8.A.184, 8.EE.8.A.185, 8.EE.8.A.186, 8.EE.8.A.187, 8.EE.8.A.188, 8.EE.8.A.189, 8.EE.8.A.190, 8.EE.8.A.191, 8.EE.8.A.192, 8.EE.8.A.193, 8.EE.8.A.194, 8.EE.8.A.195, 8.EE.8.A.196, 8.EE.8.A.197, 8.EE.8.A.198, 8.EE.8.A.199, 8.EE.8.A.200, 8.EE.8.A.201, 8.EE.8.A.202, 8.EE.8.A.203, 8.EE.8.A.204, 8.EE.8.A.205, 8.EE.8.A.206, 8.EE.8.A.207, 8.EE.8.A.208, 8.EE.8.A.209, 8.EE.8.A.210, 8.EE.8.A.211, 8.EE.8.A.212, 8.EE.8.A.213, 8.EE.8.A.214, 8.EE.8.A.215, 8.EE.8.A.216, 8.EE.8.A.217, 8.EE.8.A.218, 8.EE.8.A.219, 8.EE.8.A.220, 8.EE.8.A.221, 8.EE.8.A.222, 8.EE.8.A.223, 8.EE.8.A.224, 8.EE.8.A.225, 8.EE.8.A.226, 8.EE.8.A.227, 8.EE.8.A.228, 8.EE.8.A.229, 8.EE.8.A.230, 8.EE.8.A.231, 8.EE.8.A.232, 8.EE.8.A.233, 8.EE.8.A.234, 8.EE.8.A.235, 8.EE.8.A.236, 8.EE.8.A.237, 8.EE.8.A.238, 8.EE.8.A.239, 8.EE.8.A.240, 8.EE.8.A.241, 8.EE.8.A.242, 8.EE.8.A.243, 8.EE.8.A.244, 8.EE.8.A.245, 8.EE.8.A.246, 8.EE.8.A.247, 8.EE.8.A.248, 8.EE.8.A.249, 8.EE.8.A.250, 8.EE.8.A.251, 8.EE.8.A.252, 8.EE.8.A.253, 8.EE.8.A.254, 8.EE.8.A.255, 8.EE.8.A.256, 8.EE.8.A.257, 8.EE.8.A.258, 8.EE.8.A.259, 8.EE.8.A.260, 8.EE.8.A.261, 8.EE.8.A.262, 8.EE.8.A.263, 8.EE.8.A.264, 8.EE.8.A.265, 8.EE.8.A.266, 8.EE.8.A.267, 8.EE.8.A.268, 8.EE.8.A.269, 8.EE.8.A.270, 8.EE.8.A.271, 8.EE.8.A.272, 8.EE.8.A.273, 8.EE.8.A.274, 8.EE.8.A.275, 8.EE.8.A.276, 8.EE.8.A.277, 8.EE.8.A.278, 8.EE.8.A.279, 8.EE.8.A.280, 8.EE.8.A.281, 8.EE.8.A.282, 8.EE.8.A.283, 8.EE.8.A.284, 8.EE.8.A.285, 8.EE.8.A.286, 8.EE.8.A.287, 8.EE.8.A.288, 8.EE.8.A.289, 8.EE.8.A.290, 8.EE.8.A.291, 8.EE.8.A.292, 8.EE.8.A.293, 8.EE.8.A.294, 8.EE.8.A.295, 8.EE.8.A.296, 8.EE.8.A.297, 8.EE.8.A.298, 8.EE.8.A.299, 8.EE.8.A.300, 8.EE.8.A.301, 8.EE.8.A.302, 8.EE.8.A.303, 8.EE.8.A.304, 8.EE.8.A.305, 8.EE.8.A.306, 8.EE.8.A.307, 8.EE.8.A.308, 8.EE.8.A.309, 8.EE.8.A.310, 8.EE.8.A.311, 8.EE.8.A.312, 8.EE.8.A.313, 8.EE.8.A.314, 8.EE.8.A.315, 8.EE.8.A.316, 8.EE.8.A.317, 8.EE.8.A.318, 8.EE.8.A.319, 8.EE.8.A.320, 8.EE.8.A.321, 8.EE.8.A.322, 8.EE.8.A.323, 8.EE.8.A.324, 8.EE.8.A.325, 8.EE.8.A.326, 8.EE.8.A.327, 8.EE.8.A.328, 8.EE.8.A.329, 8.EE.8.A.330, 8.EE.8.A.331, 8.EE.8.A.332, 8.EE.8.A.333, 8.EE.8.A.334, 8.EE.8.A.335, 8.EE.8.A.336, 8.EE.8.A.337, 8.EE.8.A.338, 8.EE.8.A.339, 8.EE.8.A.340,

standards

CCSS

- 8.F.3: Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line; give examples of functions that are not linear.
- 8.F.4: Construct a function to model a linear relationship that are not linear quantities. Determine the rate of change and initial value of the function from a description of the relationship or two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a function or table in context. Interpret the rate of change in terms of its graph or a table of values.
- 8.EE.5: Describe qualitatively the functional relationship between two quantities by analyzing a graph.
- 8.EE.6: Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two proportional relationships represented in different ways.
- 8.EE.7: Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; interpret the equation $y = mx + b$ for a line intercepting the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at b .

TEKS

- 8.4(A): Use similar right triangles to develop an understanding that slope, m , given as the rate of change in y -values to the change in x -values, $(y_2 - y_1) / (x_2 - x_1)$, is the same slope for any two points (x_1, y_1) and (x_2, y_2) on the same line.
- 8.5(B): Represent linear non-proportional relationships with tables, graphs, and equations in the form of $y = mx + b$, where $b \neq 0$.
- 8.4(C): Use data from a table or graph to determine the rate of change or slope and interpret in mathematical and real-world problems.
- 8.5(J): Write an equation in the form $y = mx + b$, where $b \neq 0$.

Horizontal Planning

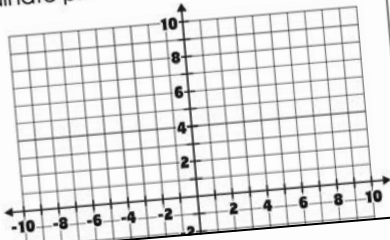
WARM UPS AND EXIT TICKETS

Lesson 1: Slope and Rate

Skill: Plotting Points on a Coordinate Plane

Graph each of the given ordered pairs on the coordinate plane.

- $(-9, 3)$
- $(6, -1)$
- $(2, 0)$
- $(-8, -2)$
- $(2, 7)$
- $(0, -3)$



2) Identify which of the following points are on the line.

- $(11, -3) = \text{Quadrant I}$
- $(-2, -2) = \text{Quadrant III}$
- $(4, 1) = \text{Quadrant I}$
- $(-2, 5) = \text{Quadrant II}$
- $(0, 0) = \text{Origin}$

Lesson 1: Slope and Rate of Change

Skill: Finding Slope From Graphs and Tables

1) Find the slope of the line represented by the points in the table.

x	y
-4	12
-2	6
2	-6
4	-12

2) Find the slope of the line graphed.



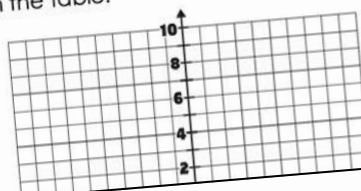
WARM UP #1

Lesson 2: Linear and Functional Relationships

Skill: Plotting Points on a Coordinate Plane

Plot the points from the table.

x	y
-6	-9
-4	-5
0	3
3	



2) Draw a line through the points.

Lesson 2: Linear and Functional Relationships

Skill: Graphing Functions

1) Sketch a graph to model: The temperature throughout 5 consecutive days varied from 55° in the morning to 85° in the afternoon.

2) Sketch a graph to model: The elevation of someone hiking a trail that ascends and then descends throughout a mountain range.

EXIT TICKET #1

Lesson 5: Linear Relationship Applications

Skill: Linear Relationship Applications

A costume rental company charges a \$30 rental fee, plus \$10 per day.

1. Write an equation to represent the total fee for a costume, based on the number of days rented.

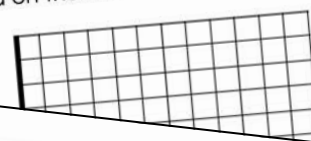
2. Find the slope and y-intercept.

slope = _____

y-intercept = _____

3. What does the slope mean in the context of the problem?

4. Graph the equation.



Name _____

Date _____

Lesson 4: Slope-Intercept Form

Skill: Finding Slope Review

1) Find the slope of the line that passes through $(-5, 8)$ and $(2, -6)$.

2) Find the slope of the line that passes through $(-10\frac{1}{2}, -5)$ and $(9\frac{1}{2}, 4)$.

3) Find the slope of the line that passes through $(-9, 6)$ and $(3, 0)$.

4) Find the slope of the line that passes through $(-4, 2)$ and $(-3, -12)$.

Lesson 5: Linear Relationships

Skill: Linear Relationships

A costume rental company charges a \$30 rental fee, plus \$10 per day.

1. Write an equation to represent the total fee for a costume, based on the number of days rented.

NOTES

SLOPE AND RATE OF CHANGE

WHAT IS SLOPE?

THE FOUR DIFFERENT TYPES OF SLOPE ARE:

How To FIND SLOPE FROM A GRAPH

GRAPHING LINEAR FUNCTIONS FROM TABLES

Where do you get the points?

1. Make sure your equation has been solved for y .
2. Choose 3 values for x to make your table.
 - Choose easy numbers to work with like _____, _____, _____.
3. Plug your x -values into the equation and solve for _____.

x	y

Example: $y = -x + 3$

The ordered pair _____

The ordered pair _____

The ordered pair _____

Graphing the line:

1. Plot the 3 points on the coordinate plane.

IT IS :

LOOKS LIKE:

Y-INTERCEPT

CHARACTERIZED BY:

NOTES

FUNCTIONAL RELATIONSHIPS

Characteristics of a functional relationship:

A functional relationship is:

A functional relationship is not:

SLOPE-INTERCEPT FORM

Slope Review

The steepness of the line is the ratio of the vertical change to the horizontal change, or "rise over run". This ratio is the slope of a line. Another term for slope is "rate of change".

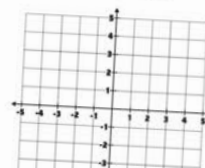
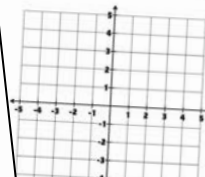
There are four different types of slope: (Sketch an example of each)

Positive Slope

Negative Slope

Undefined Slope

Zero Slope



Finding Slope From:

GRAPHS

TABLES

TWO POINTS

Identifying Linear Relationships

FROM A GRAPH

FROM A TABLE

FROM AN EQUATION

Types of Slope

POSITIVE SLOPE

NEGATIVE SLOPE

ZERO SLOPE

UNDEFINED SLOPE

Slope-Intercept Form

$Y =$

M

X

$+ B$

PRACTICE WORKSHEETS

Name _____ Date _____

SLOPE APPLICATION

Practice: Identify the slope in each situation. Explain what the slope means in the context of the situation.

1) Ryan is building a deck. He needs pieces of wood that are 8 feet long. Each 8-foot piece costs \$2.75. He has already spent \$124.62 on other supplies.

Identify the rate of change.

Explain what the rate of change means in the context of the problem.

2) Ben's taxi company charges \$0.45 per mile.

Identify the rate of change.

Explain what the rate of change means in the context of the problem.

Name _____ Date _____

Name _____ Date _____

SLOPE ON A GRAPH

Explore: Using the line on the graph as the hypotenuse, create a triangle using points B and C. Create another triangle using Points A and D.

- Are the two triangles similar, identical or neither?
- What is the slope of the triangle that connects points B and C?
- What is the slope of the triangle that connects points A and D?

Name _____ Date _____

SLOPE AND RATE OF CHANGE

For #1 – 10: Find the slope of each line.

1) The line that passes through (-2, 20) and (5, 6).

2)

x	y
9	2
3	-2
-3	-6
-9	-10

3)

x	y
3	16
4	13
5	10

4) The line that passes through (-2, -3).

Name _____ Date _____

Name _____ Date _____

IDENTIFYING LINEAR RELATIONSHIPS

Directions: Identify whether each relation is linear. Explain your answer.

1)

2)

x	y
1	1
4	3
7	5
10	7

3)

4)

Name _____ Date _____

LINEAR RELATIONSHIPS APPLICATIONS

For #5 – 8: Read each scenario carefully and complete all parts.

a) A streaming service charges \$1.50 per day for movie rental.

- Write an equation to represent the total fee for a movie, based on the number of days rented.
- Find the slope and y-intercept.

slope = _____ y-intercept = _____

c) What does the slope mean in the context of the problem?

d) Graph the equation.

6) Packs of paper are \$2 each with a \$4 delivery charge when ordered online.

- Write an equation to represent the total spent on packs of paper based on the number of packs purchased.
- Find the slope and y-intercept.

slope = _____ y-intercept = _____

Name _____ Date _____

SLOPE-INTERCEPT FORM

Label each part of the equation.

$$y = mx + b$$

Practice graphing:

1) $y = -4x + 6$

2) $y = \frac{2}{3}x - 3$

ASSESSMENTS - PRINT AND DIGITAL

Name _____ Date _____ Class _____

PRE-ASSESSMENT

Directions: Read each problem carefully. Show work when needed.

1) Bella purchased 4.2 pounds of apples for \$7.77. What is the cost of one pound of apples?

2) Kate ran 5 miles in 42.5 minutes. At the same pace, how long would it take her to run a total of 8.5 miles?

Name _____ Date _____

QUIZ

SLOPE-INTERCEPT FORM

Objectives:

- Graph a linear equation in slope-intercept form.
- Graph and interpret equations in slope-intercept form that model real-life situations.

For #1 - 4: Identify the slope and y-intercept for each graph shown below.

1) _____

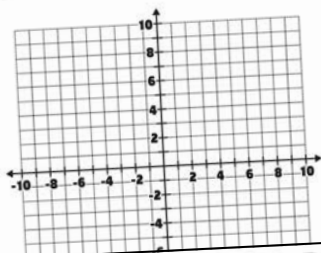
SLOPE-INTERCEPT FORM

For #5 - 8: Re-write each equation in slope-intercept form, if necessary, then graph.

5) $y = \frac{1}{2}x - 1$

slope = _____

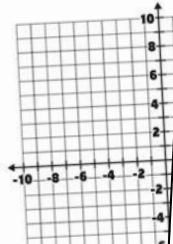
y-intercept = _____



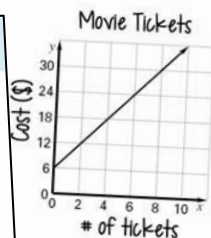
6) $-2y = 6x - 4$

slope = _____

y-intercept = _____

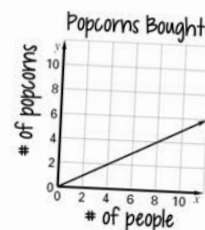


QUIZ



2) slope = _____

y-intercept = _____



Name _____ Date _____

ASSESSMENT

LINEAR AND FUNCTIONAL RELATIONSHIPS

For #1 - 4: Identify each slope.

1) $y = \frac{3}{5}x - 6$

2) $y = -x + 3$

LINEAR AND FUNCTIONAL RELATIONSHIPS

For #9 - 11: Identify whether the given relationship is linear. Explain why or why not.

9) The distance traveled in a car at an average speed of 65mph for any number of hours. Is this relation linear? Explain why or why not.

10) Is this relationship linear? Explain why or why not.

Day	0	5	10	15
Height (in.)	4.62	6.25	7.68	9.31

11) Is this relationship linear? Explain why or why not. $y = 5x(x + 3)$

For #12 - 15: Write an equation in slope-intercept form for the line that meets the given conditions.

12) Write an equation in slope-intercept form of the line that passes through $(-1, -1)$ and has a slope of $-\frac{1}{2}$.

13) Write an equation in slope-intercept form of the line that passes through $(-1, -1)$ and $(3, 7)$.

14) Write an equation in slope-intercept form that represents the relationship

x	y
1	3
2	6



UNIT 3 QUIZ

SLOPE-INTERCEPT FORM

Slope-Intercept Form Quiz

lindsayperro@gmail.com [Switch account](#)

* Required

Email *

Your email

Objectives: (1) Graph a linear equation in slope-intercept form (2) Graph and interpret equations in slope-intercept form that model real-life situations

Identify the slope and y-intercept for each graph show below

answer the questions.

Cost of a Rental Car

Miles	0	4	8	12	14
Cost (\$)	0	4.00	8.00	12.00	14.00



Unit 3

LINEAR & FUNCTIONAL RELATIONSHIPS

ASSESSMENT

Linear and Functional Relationships Assessment

lindsayperro@gmail.com [Switch account](#)

* Required

Email *

Your email

Identify each slope:

1) *

$y = \frac{3}{5}x - 6$

Your answer