

# 8 Math Unit 04: Graphing & Writing Linear Equations

Content Area: **Mathematics**  
Course(s):  
Time Period: **Marking Period 2**  
Length: **18 days**  
Status: **Published**

## Unit Overview

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Throughout the chapter, students will apply their understanding of equality and solving equations in new ways.

## Standards

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MATH.8.EE.B.5	Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways.  For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.
MATH.8.EE.B.6	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; derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at $b$ .
MATH.8.F.B.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 from 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, and in terms of its graph or a table of values.

## Materials

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### Big Ideas Math

- 4.1 Graphing Linear Equations
- 4.2 Slope of a Line
- 4.3 Graphing Proportional Relationships
- 4.4 Graphing Linear Equations in Slope-Intercept Form
- 4.5 Graphing Linear Equations in Standard Form
- 4.6 Writing Equations in Slope-Intercept Form
- 4.7 Writing Equations in Point-Slope Form

### Desmos

Unit 3 - Proportional & Linear Relationships

- [ST Math](#)
- [Delta Math](#)
- [3 Act Lessons](#)

- [Brainingcamp Manipulatives](#)
- [Nearpod Lessons](#)
- [Brainpop Resources](#)
- [Online Resources](#)

## Technology

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CS.6-8.8.1.8.AP.6	Refine a solution that meets users' needs by incorporating feedback from team members and users.
CS.6-8.8.1.8.DA.1	Organize and transform data collected using computational tools to make it usable for a specific purpose.

## Assessment

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### Formative Assessment

- Teacher Observation
- Daily Quick Check
- Quizzes
- Exit Tickets

### Summative Assessment

- Topic Tests
- Benchmark Tests
- Alternative Assessments: Performance Tasks & Projects
- NWEA Grade 8 Math Assessment

## Accommodations & Modifications

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### Special Education

- Follow IEP Plan which may contain some of the following examples...
- In class/pull out support with special ed teacher
- Additional time during intervention time
- Preferred seating
- Questions read aloud
- Extended time for completing tasks

- Graphic organizers
- Vocabulary support
- Mnemonic devices
- Songs/videos to reinforce concepts
- Limit number of questions
- Scribe
- Manipulatives
- Calculators
- Reteach pages
- Leveled homework
- Lesson intervention activities
- Math Diagnosis & Intervention System
- Another look homework video
- Practice buddy

## **504**

- In class/pull out support with special ed teacher Additional time during intervention time
- Preferred seating
- Questions read aloud
- Extended time for completing tasks Graphic organizers
- Vocabulary support Mnemonic devices
- Songs/videos to reinforce concepts Limit number of questions
- Scribe Manipulatives Calculators Reteach pages Leveled homework
- Lesson intervention activities
- Math Diagnosis & Intervention System Another look homework video
- Practice buddy

## **ELL**

- Translation device/dictionary
- In class/pull out support with ESL teacher
- Preferred seating
- Questions read aloud
- Extended time for completing tasks
- Graphic organizers
- Vocabulary support
- Mnemonic devices
- Songs/videos to reinforce concepts
- Manipulatives
- Math Diagnosis & Intervention System

## **At-risk of Failure**

- Additional time during intervention time
- Questions read aloud
- Graphic organizers
- Vocabulary support
- Mnemonic devices
- Songs/videos to reinforce concepts
- Manipulatives
- Calculators

- Reteach pages
- Leveled homework
- Lesson intervention activities
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### Gifted & Talented

- Independent projects
- Enrichment pages
- Online games
- Leveled Homework
- Extension Activities
- Today's Challenge

## Interdisciplinary Connections

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Topic 4 STEM Project - How Many Fish?

In this project, students learn a sampling technique for estimating a population count when other more direct counting methods are not possible.

Science Connection -

Tag and Release studies are commonly used in ecology to estimate an animal population's size when monitoring wildlife. A portion of the population is captured, tagged, and released. Later, another portion is captured and the number of tagged individuals within the sample is counted. Tag and Release studies are common for fish and whales, but are also used for other organisms, including salamanders, snails, birds, and bees.

ELA: NJLSA.R1. Read closely to determine what the text says explicitly and to make logical inferences and relevant connections from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text. Science: MS-ETS1-1. Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.

Climate Change:

- **Climate Change:** Students may use the equation of a linear model to interpret the slope when comparing local and global precipitation rates for rainfall in different regions.

## Career Readiness, Life Literacies & Key Skills

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PFL.9.1.8.EG.1	Explain how taxes affect disposable income and the difference between net and gross income.
PFL.9.1.8.FI.4	Analyze the interest rates and fees associated with financial products.
PFL.9.1.8.FP.4	Analyze how familial and cultural values influence savings rates, spending, and other financial decisions.
WRK.9.2.8.CAP.2	Develop a plan that includes information about career areas of interest.
TECH.9.4.8.CI.2	Repurpose an existing resource in an innovative way (e.g., 8.2.8.NT.3).
TECH.9.4.8.CT.2	Develop multiple solutions to a problem and evaluate short- and long-term effects to determine the most plausible option (e.g., MS-ETS1-4, 6.1.8.CivicsDP.1).
TECH.9.4.8.TL.1	Construct a spreadsheet in order to analyze multiple data sets, identify relationships, and facilitate data-based decision-making.
TECH.9.4.8.TL.2	Gather data and digitally represent information to communicate a real-world problem (e.g., MS-ESS3-4, 6.1.8.EconET.1, 6.1.8.CivicsPR.4).
TECH.9.4.8.TL.3	Select appropriate tools to organize and present information digitally.
TECH.9.4.8.TL.4	Synthesize and publish information about a local or global issue or event (e.g., MSLS4-5, 6.1.8.CivicsPI.3).
TECH.9.4.8.IML.9	Distinguish between ethical and unethical uses of information and media (e.g., 1.5.8.CR3b, 8.2.8.EC.2).

## Career Ready Practices

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- CRP1. Act as a responsible and contributing citizen and employee.
- CRP2. Apply appropriate academic and technical skills.
- CRP4. Communicate clearly and effectively and with reason.
- CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
- CRP12. Work productively in teams while using cultural global competence.