6 Math Unit 06: Equations

Content Area: **Mathematics**
Course(s):
Time Period: **February**
Length: **14 days**
Status: **Published**

Unit Overview

The algebra strand continues in this course as students learn to write and solve equations in one variable with nonnegative rational-number solutions. Students will also analyze the quantitative relationship between independent and dependent variables. Solving equations is a process for deciding which values from a set of numbers make an equation true. Over time, the process will gradually increase in complexity. At this stage, students are working with single-step equations and can often solve the problems using mental math.

Standards

MATH.6.EE.B.5	Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.
MATH.6.EE.B.6	Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.
MATH.6.EE.B.7	Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p, q and x are all nonnegative rational numbers.
MATH.6.EE.C.9	Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation.

Materials

Core Materials

- Big Ideas Math
- 6.1 Writing Equations in One Variable
- 6.2 Solving Equations Using Addition or Subtraction
- 6.3 Solving Equations Using Multiplication or Division
- 6.4 Writing Equations in Two Variables

Supplementary Materials

- ST Math
- Delta Math

- 3 Act Lessons
- Brainingcamp Manipulatives
- Nearpod Lessons
- Brainpop Resources
- Online Resources

Technology

CS.6-8.8.1.8.AP.4	Decompose problems and sub-problems into parts to facilitate the design, implementation, and review of programs.
CS.6-8.8.1.8.DA.1	Organize and transform data collected using computational tools to make it usable for a specific purpose.
CS.6-8.8.1.8.DA.5	Test, analyze, and refine computational models.

Assessment

Formative Assessment

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

Summative Assessment

- Topic Tests
- Benchmark Tests

Alternative Assessment

- Performance Tasks & Projects

Accommodations & Modifications

Special Education

Differentiated Instruction
Accommodate Based on Students Individual Needs: Strategies

Time/General • Extra time for assigned tasks • Adjust length of assignment • Timeline with due dates for reports and projects • Communication system between home and school • Provide lecture notes/outline	**Processing** • Extra response time • Have students verbalize steps • Repeat, clarify, or reword directions • Mini-breaks between tasks • Provide a warning for transitions • Reading partners	**Comprehension** • Precise step-by-step directions • Short manageable tasks • Brief and concrete directions • Provide immediate feedback • Small group instruction • Emphasize multi-sensory learning	**Recall** • Teacher-made checklist • Use visual graphic organizers • Reference resources to promote independence • Visual and verbal reminders • Graphic organizers
Assistive Technology • Computer/whiteboard • Tape recorder • Spell-checker • Audio-taped books	**Tests/Quizzes/Grading** • Extended time • Study guides • Focused/chunked tests • Read directions aloud	**Behavior/Attention** • Consistent daily structured routine • Simple and clear classroom rules • Frequent feedback	**Organization** • Individual daily planner • Display a written agenda • Note-taking assistance • Color code materials

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
- Math Diagnosis & Intervention System
- Another look homework video
- Practice buddy

Gifted & Talented

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

Interdisciplinary Connections

Topic 6 STEM Project - Engineering to Prevent Extinction: In this project, students explore the impact humans have on the environment as they research and identify ways in which engineers can help prevent the extinction of animal species.

Science Connection - Students engage in the first steps of the engineering design process by defining a problem and conducting research. They recognize the importance of maintaining animal habitats and evaluate plans to help attain

that goal.

Climate Change Connection: Students may solve real-world problems by writing and solving one-variable equations related to deforestation and/or increasing livestock farming as contributors to climate change.

ELA.RI.CT.6.8	Compare and contrast informational texts in different forms, by different authors, or from different genres (e.g., a memoir written by and a biography on the same person, historical novels and primary source documents, infographics and scientific journals) in terms of their approaches to similar themes and topics.
SCI.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.

Career Readiness, Life Literacies & Key Skills

PFL.9.1.8.EG.1	Explain how taxes affect disposable income and the difference between net and gross income.
PFL.9.1.8.PB.2	Explain how different circumstances can affect one's personal budget.
WRK.9.2.8.CAP.3	Explain how career choices, educational choices, skills, economic conditions, and personal behavior affect income.
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.3	Select appropriate tools to organize and present information digitally.
TECH.9.4.8.GCA.2	Demonstrate openness to diverse ideas and perspectives through active discussions to achieve a group goal.
TECH.9.4.8.IML.3	Create a digital visualization that effectively communicates a data set using formatting techniques such as form, position, size, color, movement, and spatial grouping (e.g., 6.SP.B.4, 7.SP.B.8b).
TECH.9.4.8.IML.4	Ask insightful questions to organize different types of data and create meaningful visualizations.

Career Ready Practices

- 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.