

02_Solving Linear Equations and Inequalities

Content Area: **Math**
Course(s):
Time Period: **Full Year**
Length: **5 weeks (18-20 blocks)**
Status: **Published**

General Overview, Course Description or Course Philosophy

This unit will focus on strengthening the prerequisite skills and conceptual understanding needed to solve linear equations and inequalities. Lesson activities will reinforce new content and address common misconceptions and errors to support students' progress toward solving equations and inequalities.

OBJECTIVES, ESSENTIAL QUESTIONS, ENDURING UNDERSTANDINGS

Objectives/Enduring Understandings:

Students will understand that:

- expressions have an interpretable, purposeful structure
- solving equations and inequalities is a process of reasoning that has an explanation and solutions
- equations are created to describe numbers or relationships

Essential Questions:

- How can we identify and interpret parts of an expression?
- What general strategies can you use to solve simple equations?

CONTENT AREA STANDARDS

MA.K-12.2	Reason abstractly and quantitatively.
MA.K-12.3	Construct viable arguments and critique the reasoning of others.
MA.K-12.4	Model with mathematics.
MA.K-12.6	Attend to precision.
MA.K-12.7	Look for and make use of structure.
MA.A-REI.A.1	Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.
MA.A-SSE.A.1	Interpret expressions that represent a quantity in terms of its context.
MA.A-SSE.A.1b	Interpret complicated expressions by viewing one or more of their parts as a single entity.
MA.A-SSE.B.4	Derive and/or explain the formula for the sum of a finite geometric series (when the common ratio is not 1), and use the formula to solve problems.

RELATED STANDARDS (Technology, 21st Century Life & Careers, ELA Companion Standards are Required)

WRK.K-12.P.5	Utilize critical thinking to make sense of problems and persevere in solving them.
WRK.K-12.P.8	Use technology to enhance productivity increase collaboration and communicate effectively.
WRK.K-12.P.9	Work productively in teams while using cultural/global competence.

STUDENT LEARNING TARGETS

Declarative Knowledge

Students will understand that:

- different parts of an expression have identifiable names
- properties of equality of numbers will move from one step to the next in the solution process
- complex mathematical expressions can be translated with symbol notation into English and vice versa
- complex mathematical expressions can be identified by one or more of their parts as a single entity

Procedural Knowledge

Students will be able to:

- identify the different parts of an expression
- can explain the meaning of different parts of an expression using the context of the problem
- use appropriate simplification methods required to solve a simple equation (combine like terms, distributive property, etc.)
- use inverse operations to solve equations, literal equations, and inequalities
- explain each step of the solution process and how it derives from the previous step
- determine whether a simple equation has a solution
- use formulas to solve problems
- complete the steps of the mathematical modeling cycle

EVIDENCE OF LEARNING

Formative Assessments

- Student daily participation
- Student self-assessment
- Skills checklist
- Student-friendly proficiency scales
- Teacher feedback

Summative Assessments

- Assessment Reflection

RESOURCES (Instructional, Supplemental, Intervention Materials)

- Kuta Software
- Quizizz
- Desmos
- Delta Math
- Nearpod
- Khan Academy
- Assessment Reflection

INTERDISCIPLINARY CONNECTIONS

- Write equations and inequalities to represent real-world situations in a variety of contexts

ACCOMMODATIONS & MODIFICATIONS FOR SUBGROUPS

See link to Accommodations & Modifications document in course folder.