HPISD Fifth Grade TAG Math

UNIT NAME	ESTIMATED DURATION	9 WEEKS				
UNIT 8: EQUATIONS AND INEQUALITIES	**20 DAYS**	1	2	3	**4**

Unit Overview

The student applies mathematical process standards to use multiple representations to describe algebraic relationships.
The student applies mathematical process standards to use equations and inequalities to represent situations and solve problems.

Enduring Understandings

The student will understand that:	• Tables and graphs have independent and dependent quantities that contain relationships, which can be expressed through multiple representations. • Equations and inequalities can represent constraints and conditions and correspond to real-world problems. • In algebraic expressions, equations, or inequalities, a variable is used to represent an unknown value. • Equations and inequalities have solutions that make the statement true. • Integers and coordinate pairs are the mathematical representation of real-world situations.

Concepts

Algebraic Expression	Expression that contains one or more variables and may also contain operation symbols, such as + or - .
Variable	Letter or symbol used to represent an unknown or unspecified number and value of a variable may change
Constant	Specific number whose value does not change
Equation	Mathematical statement that two expressions are equal
Solution	A value of the variable that makes the equation true
Inverse Operations	Operations that undo each other
Inequality	A mathematical sentence that shows the relationship between quantities that are not equal
Linear Relationship	As one quantity changes by a constant amount, the other quantity also changes by a constant amount

Guiding/Essential Questions

• How do you use inverse operations when solving equations or inequalities?
• How can you use linear relationships to solve real-world problems?
• How do you use tables and verbal descriptions to describe a linear relationship?
• How do you write and solve an equation or inequality?
• How can you use inequalities to represent real-world constraints or conditions?

- How do you locate and name point in the coordinate plane?
- How do you identify independent and dependent quantities from tables and graphs?
- How can you use an equation to show a relationship between two variables and represent algebraic relationships?

Learning Targets & Progressions

- **Students will understand the relationship between two variables and the distinction between independent and dependent variables.**
  - Distinguish between the x-axis and the y-axis
  - Be able to relate independent to the x-axis and dependent to the y-axis.
  - Determine in a real-world situation, the independent and dependent variable.
- **Students will evaluate and solve for solutions to equations and inequalities in mathematical and real-world situations.**
  - Understand a variable
  - Apply their knowledge of the order of operations
  - Solve using inverse operations
  - Distinguish the difference of rules between equations and inequalities
- **Students will write equations and inequalities corresponding to real-world problems.**
  - Determine in a real-world situation, the independent and dependent variable
  - Apply their knowledge of the order of operations
  - Recall vocabulary for the different number operations

Formative Assessments	Summative Assessments

TEKS: Readiness Standards	TEKS: Supporting Standards
6.10A model and solve one-variable, one-step equations and inequalities that represent problems including geometric concepts **6.11A** graph points in all four quadrants using ordered pairs of rational numbers	**6.6A** identify independent and dependent quantities from tables and graphs **6.6B** write an equation that represents the relationship between independent and dependent quantities from a table **6.9A** write one-variable, one-step equations and inequalities to represent constraints or conditions within problems **6.9B** represent solutions for one-variable, one-step equations and inequalities on number lines **6.9C** write corresponding real-world problems given one-variable, one-step equations or inequalities **6.10B** determine if the given values make one-variable, one-step equations or inequalities true

TEKS Process Standards

6.1A apply mathematics to problems arising in everyday life, society, and the workplace
6.1B use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution
6.1C select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems
6.1D communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate

6.1E create and use representations to organize, record and communicate mathematical ideas

6.1F analyze mathematical relationships to connect and communicate mathematical ideas

6.1G
 display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication

Processes and Skills: What students should be able to DO	Facts: What students should KNOW
• Determine if a given value is a solution for an equation or an inequality • Write and solve one-step inequalities • Create equations or inequalities that correspond to real-world problems • Graph ordered pairs of rational numbers in all four quadrants	• Distinction between independent and dependent variables • Distinction between expressions and equations

Topics

Algebraic Expressions Coordinate Grid Exponents Independent and Dependent Variables Linear Relationships	One-step Inequalities Solutions Variables

Language of Instruction

Coordinate Grid Dependent Equation Equivalent Expression Evaluating Exponents Expression Generate Expression Independent Inequality	Inverse Operation Linear Relationship Quantities Solution Variable x-axis y-axis

State Assessment Connections / National Assessment Connections

State Assessment Connections	National Assessment Connections

Resources

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