Unit 9 Chapter 09 Algebra: Patterns /Graphing

Content Area: **Mathematics**
Course(s): **Math 5**
Time Period: **May**
Length: **MP - 4**
Status: **Published**

Unit Summary

In this unit, students will continue to make and use line plots, including those with fractional measurements. Students will learn how to identify and plot points on a coordinate grid. They will also learn how to read and write ordered pairs of numbers. Students will learn to use line graphs to display and analyze real-world data. Finally, they learn to identify relationships between number patterns and solve problems involving patterns.

Standards

MA.5.OA.B.3	Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane.
MA.5.MD.B.2	Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots.
MA.5.G.A	Graph points on the coordinate plane to solve real-world and mathematical problems.
MA.5.G.A.1	Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).
MA.5.G.A.2	Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.
TECH.8.1.5.A.1	Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.
TECH.8.1.5.A.CS1	Understand and use technology systems
TECH.8.1.5.A.CS2	Select and use applications effectively and productively.

Student Learning Objectives

Students will be able to:

- make and use line plots with fractions to solve problems.
- graph and name points on a coordinate grid using ordered pairs.
- collect and graph data on a coordinate grid.
- analyze and display data on a line graph.
- use two rules to generate a numerical pattern and identify the relationship between the corresponding terms in the patterns.
- solve problems using the strategy solve a simpler problem.
- graph the relationship between two numerical patterns on a coordinate grid.

Essential Questions

How can you use line plots, coordinate grids, and patterns to help you graph and interpret data?

Enduring Understandings

Students will understand that:

- a line plot can help represent data with measurements in fractions of a unit and can help solve problems.
- a coordinate plane can be used to graph and name ordered pairs.
- in an ordered pair, the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis.
- there can be a relationship between two numerical patterns.
- the strategy *solve a simpler problem* often involves finding a pattern and using it to solve a problem. *Solve a simpler problem* can also be used with numerical rules and tables.
- a graph can be created based on coordinate pair and is a visual model of the numerical relationship.

Application

Students will be able to independently use their learning to:

- make and use line plots with fractions to solve problems.
- graph and name points on a coordinate grid using ordered pairs.
- collect and graph data on a coordinate grid.
- analyze and display data on a line graph.
- use two rules to generate a numerical pattern and identify the relationship between the corresponding terms in the patterns.
- solve problems using the strategy *solve a simpler problem*.
- graph the relationship between two numerical patterns on a coordinate grid.

Skills

Students will be skilled at:

- generating numerical pattern.
- determining a rule and extending the pattern.
- making a function table to compare two patterns.
- determining a rule for a pattern and extending it.
- graphing the relationship between two patterns.