

Objective

By the end of this lesson, you will be able to understand how the domain of a linear function relates to its graph and the quantitative relationship it describes.

Materials and Prep

- Paper
- Pencil
- Ruler
- Calculator (optional)

No prior knowledge is required for this lesson.

Activities

- **Graphing Linear Functions:** Draw the graph of a simple linear function such as $y = 2x + 3$. Observe how changing the domain affects the graph.
- **Domain Exploration:** Choose different domains for the same linear function and observe how it impacts the graph. Discuss how the domain restricts the input values of the function.
- **Real-life Examples:** Create a scenario where a linear function represents a real-life situation. Discuss how the domain of the function relates to the context of the problem.

Talking Points

- **Understanding Domain:** "The domain of a function represents all possible input values for the function."
- **Graphical Representation:** "When we graph a linear function, the domain is represented on the x-axis, and the range is represented on the y-axis."
- **Quantitative Relationship:** "The domain of a linear function helps us understand the set of values for which the function is defined and meaningful."
- **Real-world Application:** "In real-life scenarios, the domain of a linear function can represent constraints or limitations based on the context of the problem."
- **Exploring Different Domains:** "By changing the domain of a linear function, we can see how the graph and the relationship it describes are affected."