

Vocabulary Review Sheet

Lesson – Perimeter and Walkability

How to Use

- Review each vocabulary word before your quiz.
- Read the **math**, **real-life**, and **fairness** examples to see how perimeter connects math to community planning.
- Keep this sheet in your *Equity in Numbers Student Journal* as a quick reference when discussing city design and accessibility.
- Remember: *Math helps us walk the talk of fairness.*

Perimeter

- **Definition:** The total distance around a shape or figure.
- **Math Examples:**
 - Rectangle $\rightarrow (P = 2(l + w))$
 - $(P = 2(400 + 600) = 2,000 \text{ ft})$
- **Real-Life Example:** Measuring the distance around a neighborhood block.
- **Fairness Example:** Neighborhoods with shorter perimeters are easier and safer to walk—showing how design choices affect equity.

Length (l) and Width (w)

- **Definition:** The measurements of a rectangle's sides used to find its perimeter.
- **Math Examples:**
 - $(l = 600 \text{ ft}, w = 400 \text{ ft}) \rightarrow (P = 2(600 + 400))$
- **Real-Life Example:** A block measuring 600 ft by 400 ft shows how much walking distance surrounds one city block.

- **Fairness Example:** Comparing side lengths between neighborhoods can reveal which areas have long stretches without crossings or sidewalks.

Scale

- **Definition:** The ratio between a map's measurements and the real-world distances they represent.
- **Math Examples:**
 - 1 inch = 200 ft → 2 in = 400 ft.
- **Real-Life Example:** Using a map scale to convert inches to feet when measuring block size.
- **Fairness Example:** Scaled maps help city planners see which communities have fewer nearby services or longer travel distances.

Measurement

- **Definition:** The process of finding size, length, or amount using standard units (like feet or meters).
- **Math Examples:**
 - Measuring each side: 300 ft + 400 ft + 300 ft + 400 ft = 1,400 ft.
- **Real-Life Example:** Calculating how far someone walks around the block for exercise.
- **Fairness Example:** Measuring helps communities advocate for more accessible sidewalks, crossings, and park space.

Rectangle

- **Definition:** A four-sided figure with opposite sides equal and all angles = 90°.
- **Math Examples:**
 - $(P = 2(l + w))$
 - Example → $(P = 2(300 + 400) = 1,400 \text{ ft.})$

- **Real-Life Example:** Many city blocks are rectangular in shape.
- **Fairness Example:** Simple geometry helps compare block sizes and evaluate if neighborhoods are equally designed for walkability.

Formula

- **Definition:** A mathematical rule written using symbols to solve a problem.
- **Math Examples:**
 - Perimeter Formula $\rightarrow (P = 2(l + w))$
- **Real-Life Example:** Students use formulas to calculate total walking distance around a block.
- **Fairness Example:** The same formula applied to different neighborhoods can highlight unequal access to safe walking routes.

Walkability

- **Definition:** How easy and safe it is to walk in a community.
- **Math Examples:**
 - Smaller perimeters $\rightarrow$ Higher walkability.
 - Larger perimeters $\rightarrow$ Lower walkability.
- **Real-Life Example:** Urban areas with 1,000–1,400 ft blocks are easier for walking than areas with 2,400 ft blocks.
- **Fairness Example:** Walkable neighborhoods promote health, safety, and equality in access to jobs, parks, and schools.

Neighborhood Design

- **Definition:** How streets, parks, and buildings are arranged within a community.
- **Math Examples:**
 - Comparing perimeters: 1,000 ft vs. 2,400 ft per block.

- **Real-Life Example:** City planners design grid layouts with smaller blocks for more pedestrian access.
- **Fairness Example:** Equitable design ensures every community—regardless of income or race—has safe, walkable streets.

Equity

- **Definition:** Fairness that ensures all communities have equal access to safe, healthy environments.
- **Math Examples:**
 - Analyzing perimeter data → Which areas need improvement?
- **Real-Life Example:** Investing in sidewalks, crosswalks, and short walking paths in under-served neighborhoods.
- **Fairness Example:** Math helps cities use data—not assumptions—to build fairness into every street and block.

Summary of Math + Fairness Connections

Concept	Math Focus	Fairness Connection
Perimeter	Measures total boundary	Shows walking distance and accessibility
Scale & Measurement	Converts map data	Translates geometry into real-world impact
Walkability	Depends on block size	Affects health and community access
Neighborhood Design	Compares perimeters	Reveals inequities in planning
Equity	Uses data to plan change	Promotes fair access for all residents