

## Big Idea – Access Affects Outcomes

**Probability** helps us measure how likely something is to happen. In public health, it reveals that some communities face **greater risks of illness**—not because of individual choices or biology alone, but because of **unequal access** to care, nutritious food, safe housing, and clean environments. When we study these probabilities, we uncover patterns that point to **inequity in systems**, not in people. Math becomes a lens for truth—and a path to action—helping us advocate for communities where **everyone has the opportunity to live well**.

### Math + Equity Example

In a city of 1,000 residents:

Group	People with High Blood Pressure	Total Group	Probability
A	100	500	$100 \div 500 = 20\%$
B	200	500	$200 \div 500 = 40\%$

Group **B** faces **twice the probability** of high blood pressure compared to Group A.

This data reveals an **imbalance in health outcomes**—and signals the need for more clinics, community outreach, or prevention programs.

When math exposes these disparities, it gives leaders and students the power to **turn numbers into change**.

### Equity Connections

Health disparities don't appear by chance—they reflect broader systems:

- Limited access to healthcare or insurance
- Fewer grocery stores and safe spaces for activity
- Environmental pollution or underfunded infrastructure

By using **probability data** to ask questions like:

- Who receives regular medical care, and who doesn't?
- Which communities have local health resources nearby?
- What policies could help balance outcomes?

We turn mathematical inquiry into **social action**, using data as a roadmap for **equitable health and community well-being**.

**Data Reflection**

**Instructions:**

Circle or underline the word that stands out to you most:

**health | fairness | access | equity | care**

The word I picked is: \_\_\_\_\_

I picked this word because:

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**Reflection:**

**How does this word connect to what we are learning today?**

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**Student Equity Reflections**

- 1. What does this lesson show about how math can reveal inequities in health outcomes?

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- 2. Which group in the example faces a higher probability of illness, and by how much?

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- 3. What social or environmental factors might explain these differences?

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- 4. What actions could make health access more fair in your community?

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