Vocabulary Review Sheet

Lesson – Patterns & Sequences in Generational Wealth Transfer

How to Use

- Review each term and example before your quiz.

- Read the **math**, **real-life**, and **fairness** examples to see how arithmetic patterns connect to wealth and opportunity.

- Keep this sheet in your *Equity in Numbers Student Journal* for use alongside your video and journal prompts.

- Remember: *Patterns tell stories — and math helps us understand who has access to opportunity and how fairness can grow.*

Pattern

- **Definition:** A repeated or predictable relationship between numbers or objects.

- **Math Examples:**

  - 2, 4, 6, 8, … (adds +2 each time)

  - 10,000 → 15,000 → 20,000 → 25,000 → …

- **Real-Life Example:** A family increases savings by $5,000 each generation.

- **Fairness Example:** Patterns reveal how wealth grows steadily for some families — and more slowly for others — showing where opportunity gaps begin.

Sequence

- **Definition:** A list of numbers arranged in a specific order that follows a pattern or rule.

- **Math Examples:**

  - 5, 10, 15, 20, …

  - 20,000 → 40,000 → 60,000 → 80,000 → …

- **Real-Life Example:** Generations in a family passing down wealth every 20 years.

- **Fairness Example:** Comparing two sequences helps us see which families' wealth increases faster — and how that affects fairness over time.

Arithmetic Sequence

- **Definition:** A sequence where the same number (the common difference) is added to each term to get the next.

- **Math Examples:**

    o $(a_1 = 10,000,\backslash d = 5,000) \rightarrow$ 10,000, 15,000, 20,000, 25,000

    o Formula: $(a_n = a_1 + (n - 1)d)$

- **Real-Life Example:** Each generation adds the same amount to their savings.

- **Fairness Example:** Arithmetic sequences model steady, predictable growth — but when different families start with different first terms, gaps widen over time.

Term (a_n)

- **Definition:** Each number in a sequence.

- **Math Examples:**

    o In 2, 4, 6, 8 $\rightarrow$ 6 is the 3rd term $((a_3 = 6))$.

    o In 10,000 $\rightarrow$ 15,000 $\rightarrow$ 20,000 $\rightarrow$ 25,000 $\rightarrow (a_4 = 25,000)$.

- **Real-Life Example:** Each term could represent a new generation's total wealth.

- **Fairness Example:** Comparing later terms shows how small starting differences create large wealth gaps over generations.

First Term (a_1)

- **Definition:** The first number in a sequence — the starting value.

- **Math Examples:**

    o $(a_1 = 5,000)$ in 5,000, 10,000, 15,000, ...

- **Real-Life Example:** The amount of wealth or property a family begins with.

- **Fairness Example:** A higher starting term gives some families a head start — showing how generational privilege can continue to grow.

Common Difference (d)

- **Definition:** The fixed amount added to each term in an arithmetic sequence.

- **Math Examples:**

    o For 10,000 → 15,000 → 20,000 → 25,000 → (d = 5,000).

    o Formula: ($a_n = a_1 + (n – 1)d$).

- **Real-Life Example:** Each generation adds $5,000 to family savings.

- **Fairness Example:** Families with larger common differences (more added each generation) gain wealth faster, widening the opportunity gap.

Formula for Arithmetic Sequence

- **Definition:** A rule that finds any term in a sequence using the first term and common difference.

- **Math Example:** ($a_n = a_1 + (n – 1)d$)

    o Example: ($a_4 = 10,000 + (4 – 1)(5,000) = 25,000$)

- **Real-Life Example:** Predicting how much wealth a family will have after four generations.

- **Fairness Example:** The formula shows how math can make invisible inequality measurable — turning stories of unfairness into numbers we can analyze.

Increase / Growth

- **Definition:** When a number or value rises by a set amount over time.

- **Math Examples:**

    o 2,000 → 4,000 → 6,000 → 8,000 → (+2,000 each time).

- **Real-Life Example:** A family's home value increases by $20,000 each generation.

- **Fairness Example:** Tracking growth helps communities see who's gaining wealth — and who needs fairer opportunities to build assets.

Generational Wealth

- **Definition:** Assets, money, or property passed from one generation to the next.

- **Math Examples:**

    o Family A's wealth pattern: 20,000, 40,000, 60,000, 80,000 → adds $20,000 each generation.

- **Real-Life Example:** Parents passing down homes, savings, or investments.

- **Fairness Example:** Families without assets can't create the same wealth pattern, showing how inequity can persist over time.

Equity

- **Definition:** Fairness that ensures everyone has the resources they need to succeed — not just equal amounts, but equal opportunity.

- **Math Examples:**

    o If one family's sequence starts lower, increasing its common difference (d) helps reach fairness over generations.

- **Real-Life Example:** Creating programs that help families build savings or buy homes.

- **Fairness Example:** Equity helps close the gap between different sequences of generational wealth.

Summary of Math + Fairness Connections

Concept	Math Focus	Fairness Connection
Pattern & Sequence	Predictable growth over time	Shows steady vs. unequal progress

Concept	Math Focus	Fairness Connection
Common Difference (d)	Constant rate of change	Measures opportunity growth
First Term (a_1)	Starting value	Reflects head start or lack of one
Generational Wealth	Wealth passed across terms	Explains long-term inequality
Equity	Adjusts growth rates	Promotes fairness over generations