

Grade 6 Rationalized Mathematics

Notes

Strand 1.0 Numbers

Sub-Strand 1.1 Whole Numbers

Place Value and Total Value

- **Place value** is the position of a digit in a number, which determines its value (units, tens, hundreds, thousands, etc.).
- **Total value** (also called face value $\times$ place value) is the actual value of the digit in that place.
- Example: In 5,482,931:
 - The digit 5 is in the millions place $\rightarrow$ Place value = 1,000,000 $\rightarrow$ Total value = $5 \times 1,000,000 = 5,000,000$
 - The digit 4 is in the hundred thousands place $\rightarrow$ Total value = 400,000
 - The digit 2 is in the thousands place $\rightarrow$ Total value = 2,000
- Kenyan example: The population of Nakuru is 570,235. The digit 7 has a place value of ten thousands $\rightarrow 7 \times 10,000 = 70,000$

Reading and Writing Numbers in Symbols and Words

- **Symbols** refer to the numeric representation (e.g., 47,829).
- **Words** refer to the verbal or written form (e.g., forty-seven thousand eight hundred twenty-nine).
- Numbers up to 100,000 should be familiar both in symbols and words.
- Examples:

- 25,406 → Twenty-five thousand four hundred six
- 100,000 → One hundred thousand
- 82,000 → Eighty-two thousand
- 6,319 → Six thousand three hundred nineteen
- Tip: Break numbers by commas to make reading easier. E.g., 98,234 → 98 (thousands), 234 (hundreds and below).

Ordering Numbers Up to 100,000

- To **order numbers**, compare digits from left to right (starting with the highest place value).
- Always align the digits properly if comparing more than two numbers.
- Example: Arrange in ascending order: 42,310; 39,025; 48,912
 - Ordered: 39,025; 42,310; 48,912
- **Descending order** is the opposite (from largest to smallest).

Rounding Off Numbers to the Nearest Thousand

- To round a number to the nearest 1,000:
 - Look at the **hundreds digit**:
 - If it's 0–499 → round **down**
 - If it's 500–999 → round **up**
- Examples:
 - 12,499 → 12,000
 - 12,500 → 13,000
 - 87,211 → 87,000
 - 87,711 → 88,000
- Kenyan context: If a school receives a donation of 49,870 books, it may report "about 50,000 books" for simplicity.

Squares of Whole Numbers Up to 100

- A **square** of a number is the result of multiplying the number by itself.
- Examples: