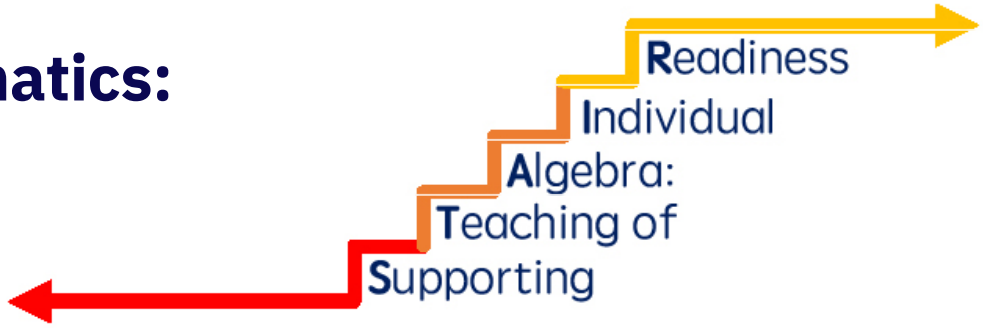
# Ideas in Mathematics:
Place Value




## Key Concepts

Place value is the system that gives each digit in a number a value based on its position. In our base-ten system, each place is ten times the value of the place to its right (ones, tens, hundreds, thousands, etc.).

## Why?

### Builds Number Sense

Understanding place value helps students make sense of numbers beyond memorization.
It supports flexible thinking about magnitude (e.g., knowing 300 is ten times larger than 30).

### Supports Computation

Addition, subtraction, multiplication, and division all rely on regrouping and understanding place value.
Example: When adding 356 + 478, students must recognize the value of each digit according to its place value.

### Connects to Real-World Math

Place value supports understanding of money, metric measurement, and large numbers.
Without it, students may struggle to read, write, and compare numbers in meaningful contexts.

### Prepares for Higher-Level Concepts

Decimals and fractions build off of place value knowledge.
Algebraic thinking and scientific notation also rely on the positional value of digits.

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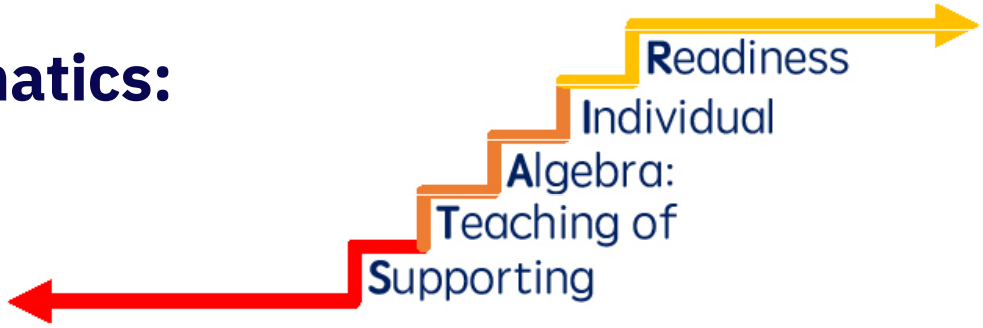


## Let's take a closer look!

# PLACE VALUE VOCABULARY

| | | |
|---|---|---|
| **DIGIT** | A symbol that represents a whole number. | **3** |
| **VALUE** | The amount each digit is worth. | **3000** |

| THOUSANDS | HUNDREDS | TENS | ONES |
|---|---|---|---|
| 3 , | 4 | 6 | 1 |

# PLACE VALUE TABLE

| THOUSANDS | HUNDREDS | TENS | ONES |
|---|---|---|---|
| 4 , | 5 | 6 | 7 |

Use the number in the top right corner to fill out the place value table and accurately represent numerical values.

| | |
|---|---|
| STANDARD FORM | WORD FORM |
| EXPANDED FORM | BASE TEN BLOCKS |

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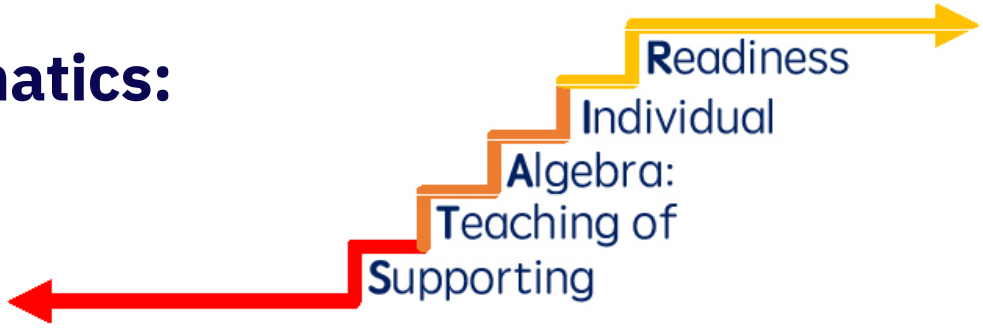


## Instructional Implications for Teachers

**Move from Concrete to Abstract:** Use manipulatives (base-ten blocks, place value charts) before transitioning to written notation and algorithms.

**Emphasize Mathematical Language:** Use terms like 3 tens rather than thirty to reinforce value over appearance.

**Encourage Flexibility:** Have students decompose numbers in multiple forms (e.g., 356 = 3 hundreds + 5 tens + 6 ones = 35 tens + 6 ones).

**Address Common Misconceptions:** Students may treat digits in isolation (seeing “42” as “4” and “2”)—explicitly connect digits to both their place and value.

**Place value is not just an early math topic—it is the backbone of our number system. Students who develop a deep conceptual understanding of place value are better equipped to perform operations, apply math in real-world settings, and transition successfully to higher-level mathematics.**