

SELECTED
PREVIEW

A carefully selected look
inside the 28-page Grade 5
discovery unit.

Includes:

- Discovery activities
- Anchor charts
- Practice
- Quiz & assessment

Preview pages are intentionally
limited and lightly protected.



Place Value & Powers of 10 Discovery

The 10x and 1/10 Rule with Exponents • Grade 5

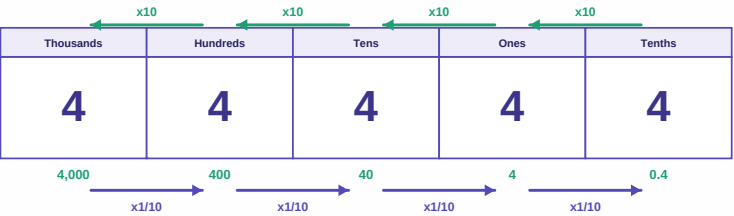
A Discovery-Based Mega Unit for CCSS 5.NBT.A.1 & 5.NBT.A.2

3 Discovery Activities	28 Practice Problems	4 Exit Tickets	12 Quiz Questions	2 Anchor Charts	6 Vocabulary Foldables
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Teacher Lesson Scripts • Printable Place-Value Chart & Digit Cards • Recording Sheets
Answer Keys with Worked Solutions • CCSS Alignment Chart • Vocabulary Foldable

Anchor Chart — The 10x Rule & the 1/10 Rule

Read the arrows: moving one place LEFT multiplies a digit's value by 10. Moving one place RIGHT multiplies it by 1/10.



- THE 10x RULE**

A digit in one place represents **10 times** as much as it represents in the place to its RIGHT. Example: 400 = 10 x 40.
- THE 1/10 RULE**

A digit in one place represents **1/10** of what it represents in the place to its LEFT. Example: 40 = 1/10 of 400.

Example proofs: 4,000 = 10 x 400 • 400 = 10 x 40 • 40 = 10 x 4 • 4 = 10 x 0.4 — and reading right-to-left, each value is 1/10 of its left neighbor.

Printable Place-Value Chart (Classroom Display)

Print large, laminate, and write digits with dry-erase markers — or place digit cards (p. 10) in the cells.

THOUSANDS PERIOD			ONES PERIOD				DECIMAL PERIOD		
Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths

Model filled in with 4,444.44:

THOUSANDS PERIOD			ONES PERIOD				DECIMAL PERIOD		
Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
		4	4	4	4		4	4	
4,000			400	40	4		0.4	0.04	

Talk move: "Every 4 is the same digit — only the PLACE, and therefore the VALUE, changes."

Discovery Activity 2 — Power of 10 Patterns

Part A (multiply). Use the chart to shift the digits of 4.5. Predict, then check.

Expression	Product	Decimal Point
4.5 x 10	_____	point moves ____ place(s) ____
4.5 x 100	_____	point moves ____ place(s) ____
4.5 x 1,000	_____	point moves ____ place(s) ____
4.5 x 10,000	_____	point moves ____ place(s) ____

Part B (divide). Start with 4,500.

Expression	Quotient	Decimal Point
4,500 / 10	_____	point moves ____ place(s) ____
4,500 / 100	_____	point moves ____ place(s) ____
4,500 / 1,000	_____	point moves ____ place(s) ____

DISCOVER Multiplying by 10, 100, 1,000... moves the decimal point to the _____ by _____ place(s) per zero. Dividing moves it to the _____. The number of zeros in the product matches the number of _____.

MATH TALK Why does "add a zero" break for 4.5 x 10? (4.50 = 4.5 — the digits must SHIFT: 4.5 x 10 = 45.)

Practice Set — Part 3: Exponent Notation (5.NBT.A.2)

20. Write 10 x 10 x 10 in exponent form.

Answer: _____

21. Write 10⁴ in standard form.

Answer: _____

22. Write 1,000 as a power of 10.

Answer: _____

23. Complete: 10² x 10 = 10____.

Answer: _____

24. Complete: 10⁵ = _____ (standard form).

Answer: _____

25. Write 4.5 x 10³ in standard form.

Answer: _____

26. Write 4,500 / 10² in standard form.

Answer: _____

27. How many zeros are in the standard form of 10⁶? Write the number, too.

Answer: _____

28. Challenge: 2.5 x 10⁴ = _____. Explain your thinking.

Answer: _____

PLACE VALUE & POWERS OF 10 DISCOVERY

GRADE 5 • 5.NBT.A.1 & 5.NBT.A.2

Quiz (Questions 7–12)

7. $0.6 \times 1,000 =$ _____ 8. $7,050 / 10 =$ _____

9. True or False: In 8,800, the 8 in the thousands place is 10 times the 8 in the hundreds place. _____

10. How many zeros are in the standard form of 10^5 ? _____

11. $2.4 \times 10^2 =$ _____

12. Use the 10x rule to explain why $45 \times 100 = 4,500$.

WHAT'S INSIDE

28-PAGE GRADE 5 MEGA UNIT

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Discovery Activities

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Practice Problems

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Exit Tickets

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Quiz Questions

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Anchor Charts

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Vocabulary Foldables

ALSO INCLUDED

- Teacher Lesson Scripts · Days 1-3
- Printable Place-Value Chart + Digit Cards
- Observation & Recording Sheets
- Worked Answer Keys
- CCSS Alignment + 3-Day Unit at a Glance
- Vocabulary Foldable

PREVIEW ONLY · UM-PRINTABLES

PREVIEW SHOWS SELECTED PAGES ONLY · FULL RESOURCE = 28 PAGES