Unit 1 · Place Value and Number Sense Cheat Sheet

Unit 1 focus: place value patterns, powers of ten, and reading decimals

1 Big Idea

Each place is worth 10 times the place to its right. Moving left multiplies by 10; moving right divides by 10.

2 Important Vocabulary

place value	The value a digit has because of where it is in a number.	In 3.47, the 4 is worth 0.4
tenths	The first place to the right of the decimal point, worth $\frac{1}{10}$ of a whole.	0.6 = 6 tenths
hundredths	The second place to the right of the decimal point, worth $\frac{1}{100}$ of a whole.	0.08 = 8 hundredths
exponent	A small raised number that tells how many times to use the base as a factor.	$10^3 = 10 \times 10 \times 10$

3 How It Works

Multiply by a power of 10 by moving digits.

Example: 3.27×10^2
$10^2 = 100$: move each digit 2 places left
Result: 327

Answer: 327

4 Visual Model

tens	ones	tenths	hundredths	thousandths
4	5	2	0	6

45.206: the 2 is in the tenths place, so it is worth 0.2.

5 ★ Remember This · Watch Out!

★ Remember this

- $10^1 = 10$, $10^2 = 100$, $10^3 = 1{,}000$
- Read “and” for the decimal point: 5.04 is five and four hundredths.

⚠ Watch out!

- **0.4 vs 0.04:** 0.4 is 10 times as much as 0.04
- **“and” means the decimal point:** two and three tenths is 2.3, not 2,003

6 Try It!

1. Write $6 \times 10 + 4 \times 1 + 7 \times \frac{1}{100}$ in standard form.

   Answer: 64.07

2. $0.56 \times 1{,}000 = ?$

   Answer: 560

Answers are printed upside down. Turn the page to check!

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More practice: comparing, ordering and rounding decimals

1 Big Idea

Compare decimals place by place from the left. Round by looking at the digit to the right of the rounding place.

2 Important Vocabulary

round	Change a number to a nearby number that is easier to use.	3.86 rounds to 3.9
standard form	A number written with digits.	forty-one and six hundredths = 41.06
expanded form	A number written as the sum of the values of its digits.	4.36 = 4 + 0.3 + 0.06
word form	A number written in words.	2.7 = two and seven tenths

3 How It Works

Compare 2.48 and 2.5.

Example: Line up the decimal points.
Ones: 2 = 2
Tenths: 4 < 5
Answer: 2.48 < 2.5

4 Visual Model



3.47 is closer to 3.5 than to 3.4, so it rounds to 3.5.

5 ★ Remember This · Watch Out!

★ Remember this

- 5 or more: round up. Less than 5: keep the digit.
- Extra zeros at the end of a decimal do not change its value: 0.6 = 0.60.

⚠ Watch out!

- **More digits is not always bigger:** 0.9 > 0.125
- **Round, do not just chop:** 4.68 rounds to 4.7, not 4.6

6 Try It!

1. Order from least to greatest: 0.62, 0.6, 0.065
   Answer: 0.065, 0.6, 0.62
2. Round 7.349 to the nearest hundredth.
   Answer: 7.35

Answers are printed upside down. Turn the page to check!