

Grade 4 • Unit 4 • Assessment Guide

From Hundredths to Hundred-Thousands

For the Parent or Teacher — What to look for

Unit 4 extends place value DOWN to hundredths (decimals) and UP to hundred-thousands. The unifying idea: each place is 10 times the place to its right. Watch how students handle equivalent decimals ($0.4 = 0.40$), large-number reading, and rounding.

Problem 1 — Decimals ↔ fractions ↔ words

- Seven tenths: 0.7, $7/10$. Thirty-two hundredths: 0.32, $32/100$. One and five tenths: 1.5, $15/10$ (or $1\frac{5}{10}$). $0.08 =$ eight hundredths $= 8/100$.
- Strong: knows leading zero for decimals less than 1.
- Weak: writes 0.08 as 'eight tenths' (mixes up place); writes seven tenths as $7/100$.

Problem 2 — $0.4 = 0.40$?

- YES, equivalent. $0.4 = 4/10 = 40/100 = 0.40$.
- Strong: uses a 10×10 grid diagram OR explicit place-value reasoning.
- Weak: says 'no — they have different number of digits' (digit-count error).

Problem 3 — Place 0.3 and 0.65

- 0.3 is 3 tenths from 0; 0.65 is between 0.6 and 0.7, closer to 0.7.
- 0.65 is closer to 0.5 (distance 0.15 vs. 0.2 for 0.3 to 0.5).
- Strong: locates correctly and explains via distance.
- Weak: locates 0.65 past 0.7 or thinks of 0.65 as far smaller than 0.5.

Problem 4 — Order 0.5, 0.05, 0.55, 0.5, 0.50

- Order: $0.05 < 0.5 = 0.5 = 0.50 < 0.55$.
- ★ Diagnostic: do they recognize $0.5 = 0.50$ (listed twice)?
- Weak: orders by digit count, putting $0.5 < 0.05$ (more digits = bigger).
- Strong: notices equalities AND uses place value.

Problem 5 — Expanded form + words

- $47,396 = 40,000 + 7,000 + 300 + 90 + 6 =$ forty-seven thousand, three hundred ninety-six.
- $203,058 = 200,000 + 3,000 + 50 + 8 =$ two hundred three thousand, fifty-eight.
- ★ Does the student include or acknowledge the ZERO in 203,058 (no ten thousands)?
- Weak: writes 'two hundred AND three thousand' or invents a digit.

Problem 6 — Values in 472,196

- $4 \rightarrow 400,000$. $7 \rightarrow 70,000$. $2 \rightarrow 2,000$. $1 \rightarrow 100$.
- ★ Strong: writes complete values, not digits.
- Weak: writes '4' or 'hundred-thousands' instead of '400,000.' Reveals knowing place NAME but not VALUE.

Problem 7 — Two 3's in 3,300

- NO. The left 3 is worth 3,000; the middle 3 is worth 300. They differ by a factor of 10.

- ★ The fundamental place-value insight of Unit 4. Strong: 'The left 3 is 10 times bigger.'
- Weak: agrees with Sam — confuses 'same digit' with 'same value.'

Problem 8 — Compare

- $48,932 > 48,923$. $501,000 > 51,000$. $0.7 = 0.70$. $0.4 > 0.39$.
- ★ Diagnostic on 0.4 vs 0.39: weak students say $0.39 > 0.4$ because '39 > 4.'

Problem 9 — Round 47,851

- Nearest 10: 47,850. Nearest 100: 47,900. Nearest 1,000: 48,000. Nearest 10,000: 50,000.
- ★ Strong: applies the 'look at next place down' rule consistently.
- Weak: chains the rounding ($47,851 \rightarrow 47,850 \rightarrow 47,800$) instead of rounding the original.

Problem 10 — $23,456 + 78,549$ and $400,000 - 47,538$

- Sum: 102,005. Difference: 352,462.
- ★ The subtraction is the diagnostic — multiple zeros force regrouping across many places.
- Weak: 'subtract smaller from larger' digit-wise $\rightarrow$ wrong digits.

Problem 11 — Estimate $5,003 - 1,847 \approx 3,156$

- Estimate: $5,000 - 2,000 = 3,000$, or $5,000 - 1,800 = 3,200$. Diego's 3,156 fits both. Actual: 3,156.
- Strong: rounds both numbers, compares — recognizes 3,156 is within range.
- Weak: redoes the exact computation instead of estimating.

Problem 12 — Why each place is 10 times the next

- Strong: 'Because our number system uses base 10. Ten ones make a ten; ten tens make a hundred; and so on.'
- ★ Deepest test of the unit.
- Weak: 'because that's how it works' / 'because of zeros.'

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