LESSON MAKER PRO

Fraction Sense Check

Estimate with benchmarks and check your answers.

GRADE 4 · 4.NOS.E.12.b

4.NOS.E.12.b "Estimate sums and differences by reasoning about benchmark numbers and assess reasonableness of answers (e.g., 3/4 + 3/4 will be greater than 1 because both fractions are greater than 1/2)."

NAME _____ DATE _____

USE NEARBY NUMBERS

To estimate a sum or difference of fractions, replace each fraction with a nearby benchmark: 0, 1/2, or 1. Add or subtract the benchmarks, then check whether your estimate makes sense.

WORKED EXAMPLE

Estimate 1/9 + 9/11 using 0, 1/2, or 1.

1. 1/9 is near 0.
2. 9/11 is near 1.
3. Add the benchmarks: 0 + 1 = 1.

Answer: About 1

PRACTICE 6 problems

1 Use 0, 1/2, or 1 to estimate 3/5 + 4/5.

ANSWER _____

2 Use 0, 1/2, or 1 to estimate 7/8 - 2/5.

ANSWER _____

3 Use 0, 1/2, or 1 to estimate 1/7 + 4/9.

ANSWER _____

4 Use 0, 1/2, or 1 to estimate 11/12 - 1/10.

ANSWER _____

5 A student says 4/6 + 5/6 is less than 1. Is that reasonable? Explain using 1/2 as a benchmark.

ANSWER _____

6 A student estimates 8/9 - 2/7 as about 1. Is that reasonable? Use 0, 1/2, or 1 to make a better estimate.

ANSWER _____

APPLY IT Show your work

1 At a school game day, Maya uses 2/3 of a roll of tape for posters and 7/8 of another same-size roll for signs. Use 0, 1/2, or 1 to estimate how many rolls she uses in all. Is 1/2 roll a reasonable estimate? Explain.

WORK SPACE

ANSWER _____

2 Before clearing photos, 9/10 of a tablet's storage is full. After clearing photos, 3/7 is full. About what fraction of the tablet's storage was cleared? Use 0, 1/2, or 1 as benchmarks.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Use 0, 1/2, or 1 to estimate 1/12 + 6/7 - 3/5. A student says the result is greater than 1. Explain why that claim is not reasonable without finding the exact result.

WORK SPACE AND ANSWER

ANSWER KEY

Fraction Sense Check

GRADE 4 · 4.NOS.E.12.b

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Use 0, 1/2, or 1 to estimate 3/5 + 4/5.	**About 1 1/2**
2	Use 0, 1/2, or 1 to estimate 7/8 - 2/5.	**About 1/2**
3	Use 0, 1/2, or 1 to estimate 1/7 + 4/9.	**About 1/2**
4	Use 0, 1/2, or 1 to estimate 11/12 - 1/10.	**About 1**
5	A student says 4/6 + 5/6 is less than 1. Is that reasonable? Explain using 1/2 as a benchmark.	**No. Both fractions are greater than 1/2, so their sum is greater than 1.**
6	A student estimates 8/9 - 2/7 as about 1. Is that reasonable? Use 0, 1/2, or 1 to make a better estimate.	**No. 8/9 is near 1 and 2/7 is near 1/2, so the difference is about 1/2.**

PART 2 · APPLY IT

1. **About 1 1/2 rolls. No, 1/2 roll is not reasonable because the total is greater than 1 roll.** Estimate 2/3 as 1/2 and 7/8 as 1. Both fractions are greater than 1/2, so their sum is greater than 1.
2. **About 1/2 of the storage** Estimate 9/10 as 1 and 3/7 as 1/2. Subtract: 1 - 1/2 = 1/2.

CHALLENGE

The estimate is 0 + 1 - 1/2 = 1/2. The claim is not reasonable: 1/12 is less than 1/7, so 1/12 + 6/7 is less than 1. Subtracting 3/5 makes the result even smaller.

Accept benchmark-based explanations that show the same comparisons. Students do not need to calculate exact fraction sums or differences.