LESSON MAKER PRO

# Does It Make Sense?

*Estimate, solve, and check each answer.*

**GRADES K-12 · MA.K12.MTR.6**

**MA.K12.MTR.6** "Assess the reasonableness of solutions."

NAME _____ DATE _____

## CHECK BEFORE YOU DECIDE

Before you trust an answer, make a quick estimate by rounding numbers to nearby easy numbers. Then solve or check the exact calculation. An answer is reasonable when it is close to the estimate and fits the situation.

## WORKED EXAMPLE

A science club orders 47 seed packets for $3 each. Is a total cost of $141 reasonable?

1. Round 47 to 50.
2. Estimate: 50 x 3 = 150.
3. Find the exact cost: 47 x 3 = 141.
4. 141 is close to 150, so the total is reasonable.

**Answer: Yes, $141 is reasonable.**

## PRACTICE 6 problems

**1** The library has 26 boxes with 8 bookmarks in each box. Theo says there are 208 bookmarks. Is Theo's answer reasonable? Use an estimate to decide.

**ANSWER** _____

**2** An art teacher buys 39 kits for $6 each. Priya says the cost is $234. Is Priya's answer reasonable? Use an estimate to decide.

**ANSWER** _____

**3** A camp divides 145 campers equally among 5 buses. Each bus has seats for 40 campers. Amir says each bus will carry 29 campers. Is his answer reasonable? Use an estimate and check the seating capacity.

**ANSWER** _____

**4** A bakery has 63 cupcakes and puts 9 cupcakes in each box. Rosa says the bakery needs 6 boxes. Is Rosa's answer reasonable? Check the situation.

**ANSWER** _____

**5** A music club buys 12 songbooks for $2.50 each. Eli says the cost is $30. Is Eli's answer reasonable? Use an estimate to decide.

**ANSWER** _____

**6** Nora reads 84 pages over 7 days. She says she reads 14 pages each day. Is Nora's answer reasonable? Check the calculation.

**ANSWER** _____

## APPLY IT Show your work

**1** The school garden club earns $18 each week for 7 weeks. A watering can costs $125. Kai says the club can buy the watering can and have $1 left. Is Kai's conclusion reasonable? Give an estimate and an exact answer.

WORK SPACE

**ANSWER** _____

**2** A gaming club has 96 prize tickets. A keychain costs 7 tickets. Nia says the club can get 14 keychains. Is Nia's answer reasonable? Explain with a check.

WORK SPACE

**ANSWER** _____

## CHALLENGE One step up

A class needs 168 snack bags for field day. Each box holds 12 snack bags and costs $5. Sam says the class needs 13 boxes and will spend $65. Is Sam's solution reasonable? Explain your reasoning.

WORK SPACE AND ANSWER

**ANSWER KEY**

# Does It Make Sense?

**GRADES K-12 · MA.K12.MTR.6**

## PART 1 · PRACTICE

| # | PROBLEM | ANSWER |
|---|---|---|
| 1 | The library has 26 boxes with 8 bookmarks in each box. Theo says there are 208 bookmarks. Is Theo's answer reasonable? Use an estimate to decide. | **Yes. 26 x 8 = 208, and 30 x 8 = 240, so 208 is reasonable.** |
| 2 | An art teacher buys 39 kits for $6 each. Priya says the cost is $234. Is Priya's answer reasonable? Use an estimate to decide. | **Yes. 39 x 6 = 234, and 40 x 6 = 240, so $234 is reasonable.** |
| 3 | A camp divides 145 campers equally among 5 buses. Each bus has seats for 40 campers. Amir says each bus will carry 29 campers. Is his answer reasonable? Use an estimate and check the seating capacity. | **Yes. 145 / 5 = 29 and 150 / 5 = 30, so 29 is close to the estimate. Each bus can seat 40 campers, and 29 is less than 40.** |
| 4 | A bakery has 63 cupcakes and puts 9 cupcakes in each box. Rosa says the bakery needs 6 boxes. Is Rosa's answer reasonable? Check the situation. | **No. 63 / 9 = 7. Six boxes hold only 54 cupcakes, so 7 boxes are needed.** |
| 5 | A music club buys 12 songbooks for $2.50 each. Eli says the cost is $30. Is Eli's answer reasonable? Use an estimate to decide. | **Yes. 12 x $2.50 = $30. An estimate of 12 x $3 = $36 shows that $30 is reasonable.** |
| 6 | Nora reads 84 pages over 7 days. She says she reads 14 pages each day. Is Nora's answer reasonable? Check the calculation. | **No. 84 / 7 = 12. Reading 14 pages each day would be 98 pages.** |

## PART 2 · APPLY IT

1. **Yes. The club earns $126, so it can buy the $125 watering can and have $1 left.** Estimate: $20 x 7 = $140, which is more than $125. Exact total: $18 x 7 = $126, and $126 - $125 = $1.
2. **No. The club can get 13 keychains and have 5 tickets left.** Check Nia's answer: 14 x 7 = 98, which is more than 96. Since 13 x 7 = 91, the club can get 13 keychains.

## CHALLENGE

**No. 168 / 12 = 14 boxes, and 14 x $5 = $70. Sam's 13 boxes would hold only 156 snack bags, so the class needs 14 boxes and must spend $70.**

Accept different sensible estimates when they support the same conclusion. For packaging problems, require students to check that the stated number of groups holds enough items.