Recycling Drive Report

Teacher Guide · Solutions · Rubric

Grade 2 · All levels

Overview

Students run a school recycling drive. They add and subtract three-digit numbers with base-ten models and written methods, compose and decompose tens and hundreds, and write a report of the results.

Time: 2 class periods · **Product:** Recycling Report
Standards: 2.NBT.B.7, 2.NBT.B.9
Prerequisite skills: Place value to 1,000 (Unit 3); Adding and subtracting within 100 (Unit 5)

Learning targets

- I can add three-digit numbers, making new tens and hundreds.
- I can subtract three-digit numbers, breaking apart tens and hundreds.
- I can explain my method with place value.

Timing and materials

- Day 1 (40 min): totals with blocks and written methods (Parts 1–2).
- Day 2 (40 min): differences and the report (Parts 3–4).

Materials: Base-ten blocks or paper cutouts; Collection data card (printable support page); Poster paper. No accounts, paid products or student personal information are needed.

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The three versions

- Remedial: hints for a first step, partly filled tables, sentence frames and fewer open choices; the same learning targets.
- Standard: the full task set at grade level; students choose their strategies and models.
- Advanced: open design constraints, missing information, error analysis and a written justification; no hints.

All versions use the same context and learning targets, so groups can share and compare work.

Implementation notes

- Model each trade with blocks before writing it.
- Check every subtraction by adding.
- Advanced students find which two classes together collected closest to a goal and justify it.
- Before Part 1, read the challenge aloud and ask students to restate the goal.
- Close with a gallery walk: each group explains one strategy.

Rubric

Learning target	4 Exceeds	3 Meets	2 Approaching	1 Beginning
I can add three-digit numbers, making new tens and hundreds.	Correct and complete; explains how	Mostly correct	Partly correct	Not yet
I can subtract three-digit numbers, breaking apart tens and hundreds.	Correct and complete; explains how	Mostly correct	Partly correct	Not yet
I can explain my method with place value.	Correct and complete; explains how	Mostly correct	Partly correct	Not yet
I can explain my thinking with pictures, numbers and words.	Clear for every part	Clear for most parts	Some explanation	Little explanation
My recycling report is complete and matches my math.	Complete, neat, accurate	Complete	Partly complete	Not complete

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Solutions · Remedial KEY

Part 1: Class Totals

Use the collection card.

Class	Cans
Room 1	234
Room 2	152
Room 3	315

1. How many cans did Room 1 and Room 2 collect together?
   386 cans
2. Did you need to make a new ten or hundred? Explain.
   No. No place had 10 or more.

Part 2: Comparing Classes

Find the differences.

3. How many more cans did Room 3 collect than Room 1?
   81 cans
4. How many more cans did Room 1 collect than Room 2?
   82 cans

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Part 3: The Goal

The school goal is 500 cans.

5. How many cans did all three rooms collect?

701 cans

6. Did they reach the goal? How many more or extra cans?

Yes, 201 extra cans

Part 4: Recycling Report

Make a report poster with the totals and one difference.

7. Show one sum and one difference with blocks or a written method.

Answers vary; work must match the data card.

Extension

Next week Room 2 collects 100 more cans than this week. How many is that?

252 cans

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Solutions · Standard KEY

Part 1: Class Totals

Use the collection card.

Class	Cans
Room 1	368
Room 2	247
Room 3	185

1. How many cans did Room 1 and Room 2 collect together?
   615 cans
2. Did you need to make a new ten or hundred? Explain.
   Yes: the ones made a new ten and the tens made a new hundred.

Part 2: Comparing Classes

Find the differences.

3. How many more cans did Room 1 collect than Room 3?
   183 cans
4. How many more cans did Room 1 collect than Room 2?
   121 cans

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Part 3: The Goal

The school goal is 800 cans.

5. How many cans did all three rooms collect?

800 cans

6. Did they reach the goal? How many more or extra cans?

Yes, 0 extra cans

Part 4: Recycling Report

Make a report poster with the totals and one difference.

7. Show one sum and one difference with blocks or a written method.

Answers vary; work must match the data card.

Extension

Next week Room 2 collects 100 more cans than this week. How many is that?

347 cans

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Grade 2 · All levels

Solutions · Advanced KEY

Part 1: Class Totals

Use the collection card.

Class	Cans
Room 1	476
Room 2	358
Room 3	129

1. How many cans did Room 1 and Room 2 collect together?
   834 cans
2. Did you need to make a new ten or hundred? Explain.
   Yes: the ones made a new ten and the tens made a new hundred.

Part 2: Comparing Classes

Find the differences.

3. How many more cans did Room 1 collect than Room 3?
   347 cans
4. How many more cans did Room 1 collect than Room 2?
   118 cans

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Part 3: The Goal

The school goal is 1000 cans.

5. How many cans did all three rooms collect?

963 cans

6. Did they reach the goal? How many more or extra cans?

No, 37 more cans needed

Part 4: Report Check

Check the report.

7. Leo wrote 476 − 358 = 122. Explain the mistake.

He subtracted the smaller digit from the larger digit in each place. 476 − 358 = 118.

8. Which two rooms together came closest to 600 cans? Show your work.

Room 1 and Room 3

Extension

Next week Room 2 collects 100 more cans than this week. How many is that?

458 cans