

Community Garden Festival

Teacher Guide · Solutions · Rubric

Grade 3 · All levels

Overview

A cumulative project for Units 6–11. Students design a community garden: beds split into fractions, equivalent and compared plantings, a watering schedule with liters and elapsed time, a harvest graph and line plot, and bed areas and fence perimeters.

Time: 3 class periods · **Product:** Garden Festival Plan
Standards: 3.NF.A.1, 3.NF.A.3.b, 3.NF.A.3.d, 3.MD.A.1, 3.MD.A.2, 3.MD.B.3, 3.MD.B.4, 3.MD.C.7.b, 3.MD.C.7.d, 3.MD.D.8, 3.G.A.2
Prerequisite skills: Units 6–11 of 3rd Grade Math

Learning targets

- I can name, compare and find equivalent fractions of a garden bed.
- I can solve time, liquid volume and mass problems.
- I can graph data and find area and perimeter of garden plots.

Timing and materials

- Day 1 (45 min): beds and fractions (Parts 1–2).
- Day 2 (45 min): watering schedule and harvest graph (Parts 3–4).
- Day 3 (45 min): area and fences (Part 5) and the festival plan.

Materials: Grid paper; Rulers marked in quarter inches; Colored pencils; Harvest data card and bed templates (printable support page). 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.

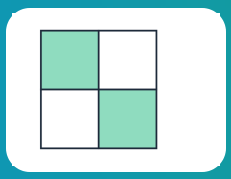
All versions use the same context and learning targets, so groups can share and compare work.

Implementation notes

- Use this after Unit 11 as a review; each part names the unit it reviews.
- Groups of 3–4; each student is responsible for one part of the final plan.
- Advanced students design the bed layout under area and perimeter limits 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 name, compare and find equivalent fractions of a garden bed.	Correct and complete; explains how	Mostly correct	Partly correct	Not yet
I can solve time, liquid volume and mass problems.	Correct and complete; explains how	Mostly correct	Partly correct	Not yet
I can graph data and find area and perimeter of garden plots.	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 garden festival plan is complete and matches my math.	Complete, neat, accurate	Complete	Partly complete	Not complete



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Solutions · Remedial KEY

Part 1: Fraction Beds (Unit 6)

Bed A is split into 8 equal parts.

1. Tomatoes fill 1 parts. What fraction is tomatoes?

$\frac{1}{8}$

2. Where is $\frac{3}{8}$ on a number line from 0 to 1 marked in eighths?

3 jumps of $\frac{1}{8}$ from 0

Part 2: Equal and Compare (Unit 7)

Bed B is split into 4 equal parts. Bed C is the same size as Bed A.

3. Herbs fill $\frac{2}{4}$ of Bed B. How many eighths of Bed A is the same amount?

$\frac{4}{8}$

4. Compare $\frac{3}{8}$ and $\frac{3}{4}$ of the same size bed. Which is more?

$\frac{3}{4} > \frac{3}{8}$

Part 3: Watering Day (Unit 8)

Watering starts at 8:15 and takes 30 minutes. The garden uses 3 cans of 4 liters.

5. What time does watering end?

8:45

6. How many liters of water are used?

12 liters

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Part 4: Harvest Graph (Unit 9)

The harvest (in pounds) is shown in the table. Make a bar graph with a scale of 5.

Crop	Pounds
Beans	30
Carrots	45
Squash	20
Peppers	35

7. How many more pounds of carrots than squash?

25 pounds

8. How many fewer pounds of beans than carrots and squash together?

35 pounds

Part 5: Plots and Fences (Units 10–11)

Each bed is a rectangle 4 feet by 2 feet.

9. What is the area of one bed?

8 square feet

10. How many feet of fence go around one bed?

12 feet

11. Two beds are placed side by side along their long sides to make one big rectangle. What is its area?

16 square feet

Extension

A 1-yard ribbon is cut into fourths for prize ribbons. How many prize ribbons from 3 yards?

12 prize ribbons

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Solutions · Standard KEY

Part 1: Fraction Beds (Unit 6)

Bed A is split into 8 equal parts.

1. Tomatoes fill 3 parts. What fraction is tomatoes?

$\frac{3}{8}$

2. Where is $\frac{3}{8}$ on a number line from 0 to 1 marked in eighths?

3 jumps of $\frac{1}{8}$ from 0

Part 2: Equal and Compare (Unit 7)

Bed B is split into 4 equal parts. Bed C is the same size as Bed A.

3. Herbs fill $\frac{2}{4}$ of Bed B. How many eighths of Bed A is the same amount?

$\frac{4}{8}$

4. Compare $\frac{3}{8}$ and $\frac{3}{4}$ of the same size bed. Which is more?

$\frac{3}{4} > \frac{3}{8}$

Part 3: Watering Day (Unit 8)

Watering starts at 8:40 and takes 35 minutes. The garden uses 6 cans of 5 liters.

5. What time does watering end?

9:15

6. How many liters of water are used?

30 liters

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Part 4: Harvest Graph (Unit 9)

The harvest (in pounds) is shown in the table. Make a bar graph with a scale of 5.

Crop	Pounds
Beans	30
Carrots	45
Squash	20
Peppers	35

7. How many more pounds of carrots than squash?

25 pounds

8. How many fewer pounds of beans than carrots and squash together?

35 pounds

Part 5: Plots and Fences (Units 10–11)

Each bed is a rectangle 6 feet by 4 feet.

9. What is the area of one bed?

24 square feet

10. How many feet of fence go around one bed?

20 feet

11. Two beds are placed side by side along their long sides to make one big rectangle. What is its area?

48 square feet

Extension

A 1-yard ribbon is cut into fourths for prize ribbons. How many prize ribbons from 3 yards?

12 prize ribbons

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Solutions · Advanced KEY

Part 1: Fraction Beds (Unit 6)

Bed A is split into 8 equal parts.

1. Tomatoes fill 3 parts. What fraction is tomatoes?

$\frac{3}{8}$

2. Where is $\frac{3}{8}$ on a number line from 0 to 1 marked in eighths?

3 jumps of $\frac{1}{8}$ from 0

Part 2: Equal and Compare (Unit 7)

Bed B is split into 4 equal parts. Bed C is the same size as Bed A.

3. Herbs fill $\frac{2}{4}$ of Bed B. How many eighths of Bed A is the same amount?

$\frac{4}{8}$

4. Compare $\frac{3}{8}$ and $\frac{3}{4}$ of the same size bed. Which is more?

$\frac{3}{4} > \frac{3}{8}$

Part 3: Watering Day (Unit 8)

Watering starts at 8:45 and takes 50 minutes. The garden uses 8 cans of 7 liters.

5. What time does watering end?

9:35

6. How many liters of water are used?

56 liters

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Part 4: Harvest Graph (Unit 9)

The harvest (in pounds) is shown in the table. Make a bar graph with a scale of 5.

Crop	Pounds
Beans	30
Carrots	45
Squash	20
Peppers	35

7. How many more pounds of carrots than squash?

25 pounds

8. How many fewer pounds of beans than carrots and squash together?

35 pounds

Part 5: Plots and Fences (Units 10–11)

Each bed is a rectangle 8 feet by 6 feet.

9. What is the area of one bed?

48 square feet

10. How many feet of fence go around one bed?

28 feet

11. Two beds are placed side by side along their long sides to make one big rectangle. What is its area?

96 square feet

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Part 6: Design Challenge

Design an L-shaped herb garden with area 30 square feet using two rectangles.

12. Give side lengths for both rectangles and show the total area.

Answers vary; e.g. 5 × 4 + 2 × 5 = 30.

13. Find the perimeter of your L shape.

Answers vary; must add every outside side.

Extension

A 1-yard ribbon is cut into fourths for prize ribbons. How many prize ribbons from 3 yards?

12 prize ribbons