

School Garden Plan

Teacher Guide & Answer Keys

Grade 5 · All levels

Overview

Students design a school garden. They split a garden into fractional sections with unlike denominators, check that the sections make one whole, add and subtract mixed numbers for fence and path lengths, and use benchmark fractions to check that answers are reasonable.

Time: 2 class periods · **Product:** Garden Design Map · **Standards:** 5.NF.A.1, 5.NF.A.2

Suggested pacing

- Day 1: Introduce the challenge, read the scenario together, and work Parts 1–2 in pairs.
- Day 2: Finish the remaining parts and create the final product.
- Wrap-up: Share products and reflect on strategies.

Levels

- **Remedial:** smaller numbers, fewer steps, more structure.
- **Standard:** grade-level numbers and the full set of tasks.
- **Advanced:** harder numbers, extra reasoning and multi-step questions.

All three levels practice the same learning goals, so the class can share and compare work.

Rubric

Category	4 Excellent	3 Good	2 Developing	1 Beginning
Math accuracy	All answers correct	Most answers correct	Some answers correct	Few answers correct
Shows work	Clear work for every step	Work for most steps	Some work shown	Little work shown
Explains thinking	Clear, complete explanations	Mostly clear explanations	Some explanation	Little explanation
Final product	Complete, neat and creative	Complete and neat	Partly complete	Not complete

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Answer key · Remedial KEY

Part 1: Garden Sections

1. What fraction of the garden is planted?

$\frac{7}{8}$

2. What fraction is left for a bench area?

$\frac{1}{8}$

3. Use a benchmark to check: is the planted part more or less than $\frac{1}{2}$?

more

Part 2: Fence Lengths

4. How many yards of fence in all?

$7\frac{3}{4}$ **yards**

5. How much longer is the first piece?

$1\frac{1}{4}$ **yards**

Part 3: Stepping-Stone Path

6. How many feet are left?

$3\frac{3}{4}$ **feet**

Part 4: Garden Map

7. Do all your sections add to 1 whole?

Answers vary; sections must add to 1.

Extension

Answers vary; the three sections must add to $\frac{5}{6}$.

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Answer key · Standard KEY

Part 1: Garden Sections

1. What fraction of the garden is planted?

$\frac{3}{4}$

2. What fraction is left for a bench area?

$\frac{1}{4}$

3. Use a benchmark to check: is the planted part more or less than $\frac{1}{2}$?

more

Part 2: Fence Lengths

4. How many yards of fence in all?

$10\frac{5}{12}$ yards

5. How much longer is the first piece?

$\frac{11}{12}$ yards

Part 3: Stepping-Stone Path

6. How many feet are left?

$8\frac{2}{3}$ feet

Part 4: Garden Map

7. Do all your sections add to 1 whole?

Answers vary; sections must add to 1.

Extension

Answers vary; the three sections must add to $\frac{5}{6}$.

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Answer key · Advanced KEY

Part 1: Garden Sections

1. What fraction of the garden is planted?

$\frac{49}{60}$

2. What fraction is left for a bench area?

$\frac{11}{60}$

3. Use a benchmark to check: is the planted part more or less than $\frac{1}{2}$?

more

Part 2: Fence Lengths

4. How many yards of fence in all?

$13\frac{23}{30}$ **yards**

5. How much longer is the first piece?

$1\frac{13}{30}$ **yards**

Part 3: Stepping-Stone Path

6. How many feet are left?

$7\frac{1}{6}$ **feet**

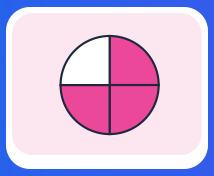
Part 4: Garden Map

7. Do all your sections add to 1 whole?

Answers vary; sections must add to 1.

Extension

Answers vary; the three sections must add to $\frac{5}{6}$.



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Worked teacher example (Standard, Part 1)

What fraction of the garden is planted?

$\frac{3}{4}$

What fraction is left for a bench area?

$\frac{1}{4}$

Use a benchmark to check: is the planted part more or less than $\frac{1}{2}$?

more

Model the first part aloud: read the situation, name the operation, estimate, solve, and check. Then let partners try Part 2.

Look for

- Students use correct notation and units in every answer.
- Students explain why an answer is reasonable (estimates, benchmarks, pictures).
- Final products show the math clearly, not just the answers.