

Name _____

Date _____

1. On Sunday, Sheldon bought $4\frac{1}{2}$ kg of plant food. He used $1\frac{2}{3}$ kg on his strawberry plants and used $\frac{1}{4}$ kg for his tomato plants.
- a. How many kilograms of plant food did Sheldon have left? Write one or more equations to show how you reached your answer.
- b. Sheldon wants to feed his strawberry plants 2 more times and his tomato plants one more time. He will use the same amounts of plant food as before. How much plant food will he need? Does he have enough left to do so? Explain your answer using words, pictures, or numbers.

2. Sheldon harvests the strawberries and tomatoes in his garden.
- a. He picks $1\frac{2}{5}$ kg less strawberries in the morning than in the afternoon. If Sheldon picks $2\frac{1}{4}$ kg in the morning, how many kilograms of strawberries does he pick in the afternoon? Explain your answer using words, pictures, or equations.
- b. Sheldon also picks tomatoes from his garden. He picked $5\frac{3}{10}$ kg, but 1.5 kg were rotten and had to be thrown away. How many kilograms of tomatoes were not rotten? Write an equation that shows how you reached your answer.
- c. After throwing away the rotten tomatoes, did Sheldon get more kilograms of strawberries or tomatoes? How many more kilograms? Explain your answer using an equation.

End-of-Module Assessment Task
Standards Addressed

Topics A–D

Use equivalent fractions as a strategy to add and subtract fractions.

- 5.NF.1** Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. *For example, $2/3 + 5/4 = 8/12 + 15/12 = 23/12$. (In general, $a/b + c/d = (ad + bc)/bd$.)*
- 5.NF.2** Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. *For example, recognize an incorrect result $2/5 + 1/2 = 3/7$, by observing that $3/7 < 1/2$.*

Evaluating Student Learning Outcomes

A Progression Toward Mastery is provided to describe steps that illuminate the gradually increasing understandings that students develop on their way to proficiency. In this chart, this progress is presented from left (Step 1) to right (Step 4). The learning goal for students is to achieve Step 4 mastery. These steps are meant to help teachers and students identify and celebrate what the students CAN do now and what they need to work on next.

A Progression Toward Mastery				
Assessment Task Item and Standards Assessed	STEP 1 Little evidence of reasoning without a correct answer. (1 Point)	STEP 2 Evidence of some reasoning without a correct answer. (2 Points)	STEP 3 Evidence of some reasoning with a correct answer or evidence of solid reasoning with an incorrect answer. (3 Points)	STEP 4 Evidence of solid reasoning with a correct answer. (4 Points)
<p>1(a)</p> <p>5.NF.1 5.NF.2</p>	<p>The work shows little evidence of conceptual or procedural strength.</p>	<p>Student obtains an incorrect answer and has trouble manipulating the units or setting up the problem.</p>	<p>Student obtains the correct answer but does not show an equation or does not obtain the correct answer through a very small calculation error. The part-whole thinking is completely accurate.</p>	<p>Student displays complete confidence in applying part-whole thinking to a word problem with fractions, giving the correct answer of $2\frac{14}{24}$ kg or $2\frac{7}{12}$ kg.</p>
<p>1(b)</p> <p>5.NF.1 5.NF.2</p>	<p>Student was unable to make sense of the problem in any intelligible way.</p>	<p>Student’s solution is incorrect and, though showing signs of real thought, is not developed or does not connect to the story’s situation.</p>	<p>Student has the correct answer to the first question but fails to answer the second question. OR Student has reasoned through the problem well, setting up the equation correctly, but making a careless error.</p>	<p>Student correctly:</p> <ul style="list-style-type: none"> ▪ Calculates that Sheldon needs $3\frac{7}{12}$ kg of plant food. ▪ Notes that $3\frac{7}{12}$ kg is more than $2\frac{7}{12}$ kg, so Sheldon does not have enough plant food.
<p>2(a)</p> <p>5.NF.1 5.NF.2</p>	<p>The solution is incorrect and shows little evidence of understanding of the need for like units.</p>	<p>Student shows evidence of beginning to understand adding fractions with unlike denominators but cannot apply that knowledge to this part-whole comparison.</p>	<p>Student calculates correctly and sets up the part-whole situation correctly but fails to write a complete statement. OR Student fully answers the question but makes one small calculation error that is clearly careless, such as copying a number wrong.</p>	<p>Student is able to apply part-whole thinking to correctly answer $3\frac{13}{20}$ kg and explains the answer using words, pictures, or numbers.</p>



A Progression Toward Mastery

<p>2(b)</p> <p>5.NF.1</p> <p>5.NF.2</p>	<p>The solution is incorrect and shows no evidence of being able to work with decimals and fractions simultaneously.</p>	<p>Student shows evidence of recognizing how to convert fractions to decimals or decimals to fractions but fails to do so correctly.</p>	<p>Student calculates correctly but may be less than perfectly clear in stating his solution. For example, “The answer is $3\frac{4}{5}$,” is not a clearly stated solution.</p>	<p>Student gives a correct equation and correct answer of $3\frac{8}{10}$ kg or $3\frac{4}{5}$ kg and explains the answer using words, pictures, or numbers.</p>
<p>2(c)</p> <p>5.NF.1</p> <p>5.NF.2</p>	<p>The solution is incorrect and shows little evidence of understanding of fraction comparison.</p>	<p>Student may have compared correctly but calculated incorrectly and/or does not explain the meaning of her numerical solution in the context of the story.</p>	<p>Student may have compared correctly but calculated incorrectly and/or does not explain the meaning of her numerical solution in the context of the story.</p>	<p>Student correctly:</p> <ul style="list-style-type: none"> ▪ Responds that the garden produced more strawberries. ▪ Responds that there were $2\frac{1}{10}$ kg or 2.1 kg more strawberries. ▪ Gives an equation such as $5\frac{9}{10} - 3\frac{8}{10} = 2\frac{9}{10} - \frac{8}{10} = 2\frac{1}{10}$.

Name Jacqueline

Date _____

1) On Sunday, Sheldon bought $4\frac{1}{2}$ kg of plant food. He used $1\frac{2}{3}$ kg on his strawberry plants, and used $\frac{1}{4}$ kg for his tomato plants.

a) How many kilograms of plant food did Sheldon have left? Write one or more equations to show how you reached your answer.

$4\frac{1}{2}$ kg

$$4\frac{1}{4} - 1\frac{2}{3} = 3\frac{1}{4} - \frac{2}{3}$$

$$= 3\frac{3}{12} - \frac{8}{12}$$

$$= 2\frac{15}{12} - \frac{8}{12}$$

$$= 2\frac{7}{12}$$

Sheldon had $2\frac{7}{12}$ kg left.

b) Sheldon wants to feed his strawberry plants 2 more times, and his tomato plants one more time. He will use the same amounts of plant food as before. How much plant food will he need? Does he have enough left to do so? Explain your answer using words, pictures or numbers.

$$1\frac{2}{3} + 1\frac{2}{3} = 2\frac{2}{3} + \frac{2}{3}$$

$$= 3\frac{1}{3}$$

$$3\frac{1}{3} + \frac{1}{4} = 3\frac{4}{12} + \frac{3}{12}$$

$$= 3\frac{7}{12}$$

No, Sheldon does not have enough because.

$$2\frac{7}{12} < 3\frac{7}{12}$$

↓

what he has left

↓

what he needs.

2) Sheldon harvests the strawberries and tomatoes in his garden.

- a. He picks $1\frac{2}{5}$ kg less strawberries in the morning than in the afternoon. If Sheldon picks $2\frac{1}{4}$ kg in the morning, how many kilograms of strawberries does he pick in the afternoon? Explain your answer using words, pictures or equations.

M $2\frac{1}{4}$ kg

A $1\frac{2}{5}$

?

$$2\frac{1}{4} + 1\frac{2}{5} = 3\frac{1}{4} + \frac{2}{5}$$

$$= 3\frac{5}{20} + \frac{8}{20}$$

$$= 3\frac{13}{20}$$

Sheldon picked $3\frac{13}{20}$ kg strawberries in the afternoon.

- b) Sheldon also picks tomatoes from his garden. He picked $5\frac{3}{10}$ kg but 1.5 kg were rotten and had to be thrown away. How many kilograms of tomatoes were not rotten? Write an equation that shows how you reached your answer.

$$5\frac{3}{10} - 1\frac{5}{10} = 4\frac{3}{10} - \frac{5}{10}$$

$$= 3\frac{13}{10} - \frac{5}{10}$$

$$= 3\frac{8}{10}$$

$3\frac{8}{10}$ kg or $3\frac{4}{5}$ kg were not rotten.

- c) After throwing away the rotten tomatoes, did Sheldon get more kilograms of strawberries or tomatoes? How many more kilograms? Explain your answer using an equation.

Tomatoes: $3\frac{8}{10}$ kg

Strawberries: $2\frac{1}{4}$ kg + $2\frac{1}{4}$ kg + $1\frac{2}{5}$ kg

$$= 4\frac{1}{2}$$
 kg + $1\frac{2}{5}$ kg
$$= 4\frac{5}{10}$$
 kg + $1\frac{4}{10}$ kg
$$= 5\frac{9}{10}$$
 kg

$5\frac{9}{10}$ kg > $3\frac{8}{10}$ kg

Sheldon got more strawberries than tomatoes.

$$5\frac{9}{10} - 3\frac{8}{10} = 2\frac{1}{10}$$

He got $2\frac{1}{10}$ kg more strawberries.