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	Topics A–D
Standards Addressed	

Understand place value.

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.

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.

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 each student is to achieve Step 4 mastery. These steps are meant to help teachers and students identify and celebrate what 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)
1(a) **5.NF.1** **5.NF.2**	The work shows little evidence of conceptual or procedural strength.	The student obtains the incorrect answer and has trouble manipulating the units or setting up the problem.	The 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.	The answer is correct, and the 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.
1(b) **5.NF.1** **5.NF.2**	The student was unable to make sense of the problem in any intelligible way.	The student's solution is incorrect and, though showing signs of real thought, is not developed or does not connect to the story's situation.	The student has the correct answer to the first question, but fails to answer the second question. Or, the student has reasoned through the problem well, setting up the equation correctly but making a careless error.	The student correctly: ■ 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.
2(a) **5.NF.1** **5.NF.2**	The solution is incorrect and shows little evidence of understanding of the need for like units.	The student shows evidence of beginning to understand addition fractions with unlike denominators, but cannot apply that knowledge to this part–whole comparison.	The student calculates correctly and sets up the part–whole situation correctly, but fails to write a complete statement. Or, the student fully answers the question but makes one small calculation error that is clearly careless, such as copying a number wrong.	The 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.

A Progression Toward Mastery				
2(b) **5.NF.1** **5.NF.2**	The solution is incorrect and shows no evidence of being able to work with decimal fractions and fifths simultaneously.	The student shows evidence of recognizing how to convert fractions to decimals or decimals to fractions, but fails to do so correctly.	The student calculates correctly, but may be less than perfectly clear in stating his or her solution. For example, "The answer is $3\frac{4}{5}$," is not a clearly stated solution.	The 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.
2(c) **5.NF.1** **5.NF.2**	The solution is incorrect and shows little evidence of understanding of fraction comparison.	The student may have compared correctly but calculated incorrectly and/or does not explain the meaning of his or her numerical solution in the context of the story.	The student may have compared correctly, but calculated incorrectly and/or does not explain the meaning of his or her numerical solution in the context of the story.	The student correctly: ▪ Responds that the garden produced more strawberries. ▪ Responds that there were $2\frac{1}{10}$ kg or 2.1 kg more strawberries. ▪ Gives equation such as $5\frac{9}{10} - 3\frac{8}{10} = 2\frac{9}{10} - \frac{8}{10} = 2\frac{1}{10}$.

COMMON CORE

Module 3:   Addition and Subtraction of Fractions
Date: 11/12/14

engage^{ny}

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   what he
has left   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 $\boxed{2\frac{1}{4}kg}$

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

?

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

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

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

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

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

$= 4\frac{5}{10} + 1\frac{4}{10}$

$= 5\frac{9}{10}$ kg

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

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

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