Avon Public Schools
Math Assessment
Grade 4 Unit 5 Review KEY

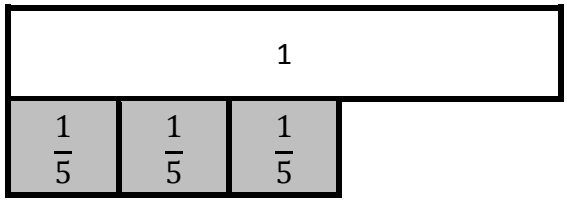
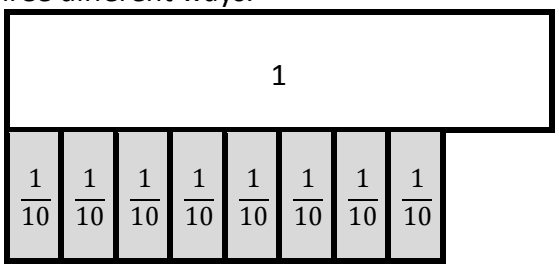
Common Core State Standards taught and assessed in Unit 5.

Student Score: _____ / 61 points

4.NF.3	CCSS.Math.Content.4.NF.B.3 Understand a fraction *a*/*b* with *a* > 1 as a sum of fractions 1/*b*. CCSS.Math.Content.4.NF.B.3a Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. CCSS.Math.Content.4.NF.B.3b Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. *Examples: 3/8 = 1/8 + 1/8 + 1/8 ; 3/8 = 1/8 + 2/8 ; 2 1/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8*. CCSS.Math.Content.4.NF.B.3c Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction. CCSS.Math.Content.4.NF.B.3d Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.
4.NF.4	CCSS.Math.Content.4.NF.B.4 Apply and extend previous understandings of multiplication to multiply a fraction by a whole number. CCSS.Math.Content.4.NF.B.4a Understand a fraction *a*/*b* as a multiple of 1/*b*. *For example, use a visual fraction model to represent 5/4 as the product 5 × (1/4), recording the conclusion by the equation 5/4 = 5 × (1/4)*. CCSS.Math.Content.4.NF.B.4b Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number. *For example, use a visual fraction model to express 3 × (2/5) as 6 × (1/5), recognizing this product as 6/5. (In general, n × (a/b) = (n × a)/b.)* CCSS.Math.Content.4.NF.B.4c Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem.*For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?*

Avon Public Schools
Math Assessment
Grade 4 Unit 5 Review KEY

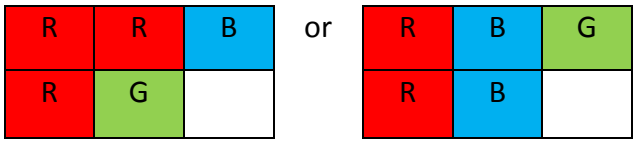
Name _____ Date _____

4.NF.3a 4.NF.3b	1. Jordan ate $\frac{3}{8}$ of a pizza. Ashley ate $\frac{2}{8}$ of the same pizza. How much of the pizza was eaten by Jordan and Ashley? Please show your work. $\frac{3}{8} + \frac{2}{8} = \frac{5}{8}$ Answer: $\frac{5}{8}$ of the pizza (3 points: work, answer, and label)	2. Write the fraction as the sum of the unit fractions.  $\frac{3}{5} = \frac{1}{5} + \frac{1}{5} + \frac{1}{5}$ (1 point)
4.NF.3b	3. Write the fraction as a sum of fractions three different ways.  Answers will vary: $\frac{a}{10} + \frac{b}{10} + \frac{c}{10}, where\ a + b + c = 8$ $\frac{8}{10}$ = _____ + _____ + _____ $\frac{8}{10}$ = _____ + _____ + _____ $\frac{8}{10}$ = _____ + _____ + _____ (3 points, 1 per correct equation)	4. Write the **mixed number** as a **fraction**. $1\frac{2}{5} = \frac{7}{5}$ $1\frac{7}{10} = \frac{17}{10}$ $4\frac{2}{8} = \frac{34}{8}$ (3 points)
4.NF.3b	5. Write the fraction as a **whole number** or a **mixed number**. (3 points) $\frac{30}{10} = 3$	$\frac{17}{8} = 2\frac{1}{8}$	$\frac{13}{3} = 4\frac{1}{3}$

Avon Public Schools
Math Assessment
Grade 4 Unit 5 Review KEY

4.NF.3b

6. Matt's teacher asks him to color $\frac{5}{6}$ of his grid. He must use three colors: green, red, and blue. There must be more red sections than green sections. How can Matt color the section of his grid to follow all of the rules?



(1 point)

7. Find the sum or difference.

$$7\frac{2}{3} - 3\frac{1}{3} = 4\frac{1}{3}$$

$$2\frac{3}{8} + 8\frac{2}{8} = 10\frac{5}{8}$$

(2 points)

4.NF.3c

8. Find the sum. Write the sum as a mixed number so the fractional part is less than one.

$$6\frac{4}{5} + 3\frac{3}{5} = 9\frac{7}{5} = \frac{52}{5} = 10\frac{2}{5}$$

$$4\frac{3}{8} + 1\frac{5}{8} = 5\frac{8}{8} = 6$$

(2 points)

4.NF.3c

9. Terry bought $4\frac{5}{8}$ yards of red ribbon and $2\frac{3}{8}$ yards of blue ribbon. How much more red ribbon than blue ribbon did Terry buy? Please show your work.

$$4\frac{5}{8} - 2\frac{3}{8} = 2\frac{2}{8}$$

Answer: $2\frac{2}{8}$ yards

(3 points: work, answer, and label)

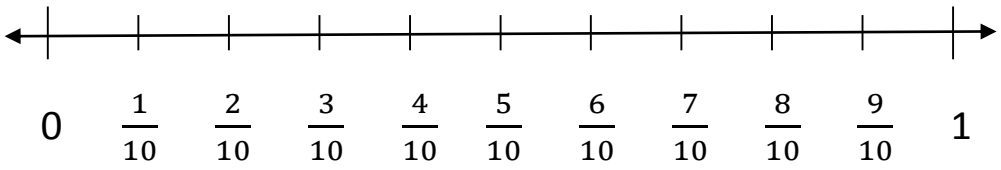
10. Use the properties of addition and mental math to find the sum.

$9\frac{1}{8} + \left(2\frac{5}{8} + 3\frac{7}{8}\right) = 15\frac{5}{8}$

$8\frac{3}{4} + \left(4\frac{3}{4} + 5\frac{2}{4}\right) = 19$

(2 points)

Avon Public Schools
Math Assessment
Grade 4 Unit 5 Review KEY

4.NF.3c	11. Nick's bedroom has three bookcases of different lengths. One has a length of $2\frac{1}{4}$ feet. Another has a length of $4\frac{1}{4}$ feet, and a third has a length of $2\frac{3}{4}$ feet. What is the length of all three bookcases when they are pushed end to end? $2\frac{1}{4} + 4\frac{1}{4} + 2\frac{3}{4} = 8\frac{5}{4} = 9\frac{1}{4}$ Answer: $9\frac{1}{4}$ feet (3 points, 1 pt work, 1 pt answer, 1 pt label)
4.NF.3d	12. Use this model to help you find the sum and difference.  0 $\frac{1}{10}$ $\frac{2}{10}$ $\frac{3}{10}$ $\frac{4}{10}$ $\frac{5}{10}$ $\frac{6}{10}$ $\frac{7}{10}$ $\frac{8}{10}$ $\frac{9}{10}$ 1 $\frac{3}{10} + \frac{5}{10} = \frac{8}{10}$ $\frac{9}{10} - \frac{4}{10} = \frac{5}{10}$ (2 points)
4.NF.3d	13. Find the sum or difference. Write the answer as a mixed number so the fractional part is less than one. $\frac{2}{12} + \frac{5}{12} = \frac{7}{12}$ $\frac{2}{6} + \frac{3}{6} = \frac{5}{6}$ $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$ $\frac{9}{6} - \frac{4}{6} = \frac{5}{6}$ $\frac{7}{8} - \frac{3}{8} = \frac{4}{8}$ (5 points)
4.NF.3d	14. Laurie walks $\frac{4}{10}$ mile to Luke's Donuts. Then she walks $\frac{3}{10}$ mile to the library. How far does she walk in all? Show your work. $\frac{4}{10} + \frac{3}{10} = \frac{7}{10}$ Answer: $\frac{7}{10}$ of a mile in all (3 points, 1 pt work, 1 pt answer, 1 pt label)

Avon Public Schools
Math Assessment
Grade 4 Unit 5 Review KEY

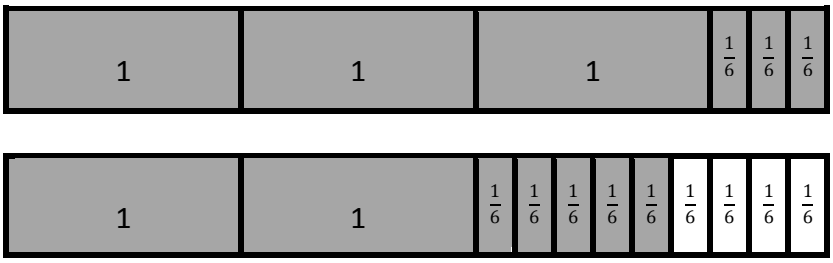
4.NF.3c

15. Use the model to help you find the difference. Answer with a **fraction** or a **mixed number** so the fractional part is less than one**.**

$3\frac{3}{6}$

$-\ 2\ \frac{5}{6}$

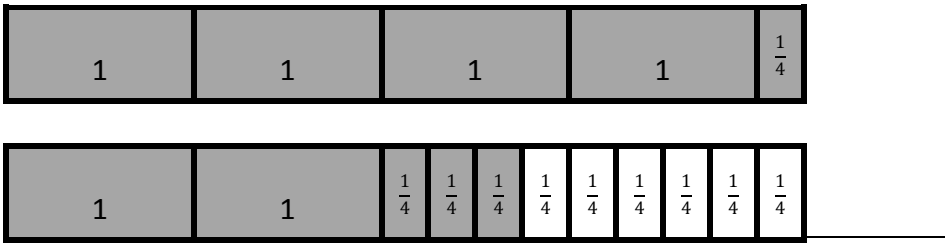
$\frac{4}{6}$



$4\frac{1}{4}$

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

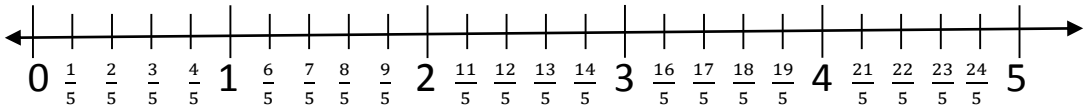
$1\frac{2}{4}$ *or* $1\frac{1}{2}$



(2 points)

4.NF.3d

16. Peter runs $\frac{4}{5}$ mile each day. He wants to know how many days he needs to run before he has run a **whole number** of miles. Show your work. *Reminder: The numbers on the number line represent the number of miles ran*.



Answer: 5 days

(3 points, 1 point for showing work, 1 point for answer, 1 point label)

4.NF.4a

17. Write the fraction as the product of a **whole number** and a **unit fraction**.

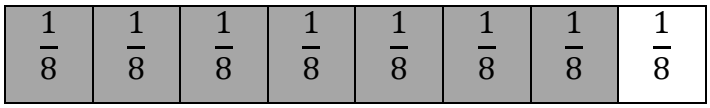
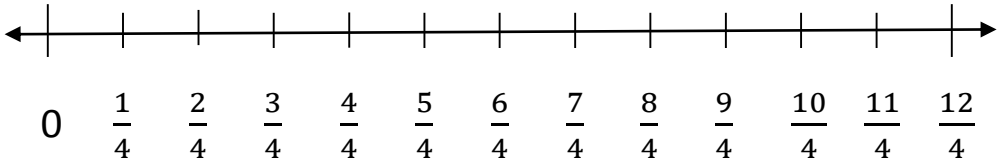
Example: $\frac{2}{5} = 2 \times \frac{1}{5}$

$\frac{8}{12} = 8 \times \frac{1}{12}$

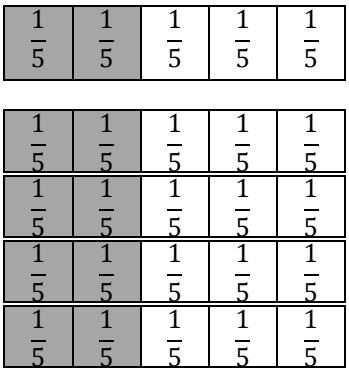
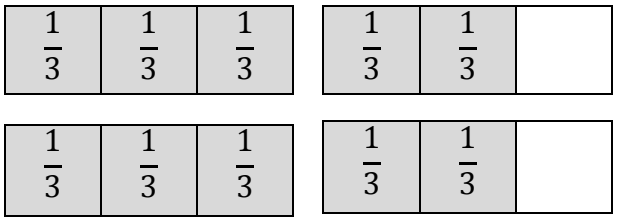
$\frac{9}{11} = 9 \times \frac{1}{11}$

(2 points)

Avon Public Schools
Math Assessment
Grade 4 Unit 5 Review KEY

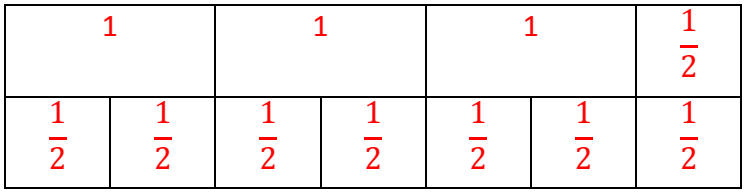
4.NF.4a	18. List the next four **multiples** of the **unit fraction**. $\frac{1}{5} = \frac{2}{5}, \frac{3}{5}, \frac{4}{5}, \frac{5}{5}$ (1 point)
4.NF.4a	19. Anne has read $\frac{7}{8}$ of her book. She has read the same number of pages each day for seven days. What fraction of the book does Anne read of her book each day?  Answer: $\frac{1}{8}$ of her book (2 points: answer, label)
4.NF.4b	20. List the next four **multiples** of the fraction. $\frac{3}{5} = \frac{6}{5}, \frac{9}{5}, \frac{12}{5}, \frac{15}{5}$ $\frac{5}{8} = \frac{10}{8}, \frac{15}{8}, \frac{20}{8}, \frac{25}{8}$ (mixed number can be accepted) (2 points)
4.NF.4b	21. Write the product as a mixed number.  0 $\frac{1}{4}$ $\frac{2}{4}$ $\frac{3}{4}$ $\frac{4}{4}$ $\frac{5}{4}$ $\frac{6}{4}$ $\frac{7}{4}$ $\frac{8}{4}$ $\frac{9}{4}$ $\frac{10}{4}$ $\frac{11}{4}$ $\frac{12}{4}$ $3 \times \frac{3}{4} = \frac{9}{4} = 2\frac{1}{4}$ (1 point)
4.NF.4b	22. Emily walks $\frac{4}{5}$ mile to school each day. How many miles will she walk in four days? Show your work, and write the product as a **mixed number**. $\frac{4}{5} \times 4 = \frac{16}{5} = 3\frac{1}{5}$ Answer: $3\frac{1}{5}$ miles (3 points, 1 pt work, 1 pt answer, 1 pt label)

Avon Public Schools
Math Assessment
Grade 4 Unit 5 Review KEY

4.NF.4b	23. Use the fraction strips to find the product.  $5 \times \frac{2}{5} = \frac{10}{5}$ or 2 (1 point)
4.NF.4c	24. Write the product as a **whole number** or **mixed number**. $4 \times \frac{2}{5} =$ _____ $\frac{2}{5} \times 4 = \frac{8}{5} = 1\frac{3}{5}$ $7 \times 1\frac{1}{4} =$ _____ $7 \times 1\frac{1}{4} = 7 \times \frac{5}{4} = \frac{35}{4} = 8\frac{3}{4}$ (2 points)
4.NF.4c	25. At the grocery store, Kerry bought $1\frac{2}{3}$ pounds of apples. Tammy bought twice as many pounds of apples as Kerry. How many pounds of apples did Tammy buy? **Draw a model to solve the problem.**  Model Drawing Needed Answer: $3\frac{1}{3}$ pounds of apples (3 points, 1 point model, 1 point for answer, 1 point for label)

Avon Public Schools
Math Assessment
Grade 4 Unit 5 Review KEY

4.NF.3b	26. A recipe calls for $3\frac{1}{2}$ cups of nuts. John only has a $\frac{1}{2}$ cup measuring scoop. How many scoops does John need to measure out $3\frac{1}{2}$ cups of nuts? Show your work and explain your answer.



John will need 7 scoops of nuts to equal 3 ½ cups because….

(3 points: work, label and explanation)