Grade 5 – Standard Review

NATIONAL TRAINING NETWORK

2014-2015

Name	Apply and extend previous understandings of multiplication and divide fractions.

5.NF.B.5a
Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.

Question 1:

Ramona read $\frac{7}{8}$ of the first $\frac{1}{2}$ of her book for her book club. Has she read more or less than $\frac{1}{2}$ of the whole book? Explain your answer by comparing the product to the size of the factors.

Question 2:

A recipe calls for $\frac{3}{4}$ cup of sugar. Flora has $\frac{1}{2}$ of that amount. She is going to ask her neighbor if she can borrow $\frac{1}{2}$ cup of sugar. Will that be enough sugar for the recipe, or will Flora need to borrow more? Explain your answer by comparing the product to the size of the factors.

Name	Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

5.NF.B.5b
Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $a/b = (n \times a)/(n \times b)$ to the effect of multiplying a/b by 1.

Question 1:

Without multiplying, which of the following has the greatest product?

a. $\frac{3}{10} \times 20$ b. $\frac{13}{10} \times 20$ c. $\frac{10}{10} \times 20$

Justify your answer.

Question 2:

If you multiply 2×6, will the product be greater or less than 6? _____

If you multiply $\frac{2}{3} \times 6$, will the product be greater or less than 6? _____

Explain your thinking and justify your answer.

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5.NF.B. 6
Solve real world problems involving multiplication of fractions and mixed numbers, e.g. by using visual fraction models or equations to represent the problem.

Question 1:

Luke has a board measuring $8\frac{1}{2}$ feet long. He needs $\frac{2}{3}$ of that for a project he is working on for school. How much of the board does he need? Create a model or write an equation to justify your answer.

Question 2:

To make a batch of fruit punch, Lauren needs $2\frac{1}{4}$ cups of grape juice. If she wants to make $\frac{1}{2}$ of a batch of punch, how many cups of grape juice will she need? Create a model or write an equation to justify your answer.

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5.NF.B.7a
Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. *For example, create a story context for (1/3) ÷ 4, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that (1/3) ÷ 4 = 1/12 because (1/12) × 4 = 1/3.*

Question 1:

Explain the meaning of the problem $\frac{9}{10} \div 3$ and determine the quotient. Use a fraction model to justify your answer.

Question 2:

Explain the meaning of the problem $\frac{1}{2} \div 4$ and determine the quotient. Write a real world problem that uses this division problem.