ACHIEVE THE CORE

Extension Activity:
Creating Problems to Meet the Focus, Coherence, and Rigor required by the Common Core State Standards for Mathematics.

SAMPLE

Domain <u>Number and Operations – Fractions</u> (equivalency)   Grade Band: <u>3-5</u>

Standard Code	Problem	Fluency, Conceptual Understanding, or Application
3.NF.3d Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or < and justify the conclusion, e.g. By using a visual fraction model.	1. Decide whether the following fraction comparison is true or false. Justify your answer by partitioning and shading the equal-sized rectangles. 2 / 6 **>** 4 / 6 _____	Conceptual Understanding

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	2. Compare the set of fractions below. Be sure to partition and shade the corresponding equal-sized rectangles. a. 3 / 4 ☐ 3 / 8 b. 1 / 2 ☐ 1 / 5 c. 5 / 6 ☐ 2 / 6 d. 2 / 3 ☐ 3 / 3	Conceptual Understanding
4.NF.2 Compare two fractions with different numerators and different denominators, e.g. By creating common denominators or numerators, or comparing to a benchmark fraction such as ½. Recognize that comparisons are valid only when two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or < and justify the conclusion, e.g. By using a visual fraction model.	1. Maggie and Shawn both had an 8 x 11 pan of brownies to share with their class. Shawn cut his pan of brownies into twelve equal pieces while Maggie cut her pan of brownies into 3 equal pieces. Shawn gave out 6/12 of his brownies and Maggie gave out 2/3 of her brownies. Shawn stated that he gave out more than Maggie. Is he correct? Use a picture to justify your comparison.	Application

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	2. Two fractions with different numerators and different denominators can be equal fractions. Using the fraction 1 / 4 prove this statement. Use the equal-sized rectangles below to show your answer.	Conceptual Understanding
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.)	1. John and Michelle wanted to make a cherry cola solution. John had one 12 oz. can of cola and Michelle had one can 12 oz. of cherry juice. If John put 2 / 5 of his cola into an empty can and Michelle added 1 / 2 of her cherry juice to the same can, what fraction of the empty can is now filled with the cherry cola solution? Hint: you must first find a common denominator to add the fractions.	Application
	2. Select all of the addition and subtraction sentences that can be answered with the fraction 8 / 12. a. 1 2/6 - 2 / 3 = b. 2 / 3 + 1 / 2 = c. 4 2/4 - 3 1/3 = d. 2 / 6 + 1 / 3 =	Procedural Skill and Fluency