Part A: Example Task Research

Name: Andrea Smith

Grade: 5	Task Title: Banana Pudding Source: https://www.illustrativemathematics.org/illustrations/1196	
Domain & Cluster	**Content Standard(s)**	**Mathematical Practice(s)**
NF: Number and Operations---Fractions Cluster: Apply and extend previous understandings of multiplication and division to multiply and divide fractions.	5.NF.B.7.B Interpret division of a whole number by a unit fraction, and compute such quotients. *For example, create a story context for 4 ÷ (1/5), and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that 4 ÷ (1/5) = 20 because 20 × (1/5) = 4.*	1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning.

Shifts of the Common Core State Standards		
Focus Find your grade here.	**Coherence** Wiring Document Learning Trajectories http://www.corestandards.org/	**Rigor** Select all that apply
Major Supporting Additional	Builds from: 3.OA.2, 4.NF.4 Connects to: 5.NF.4, 5.NF.6 Builds up to: 6.NS.1	**Conceptual Understanding** Procedural Fluency **Application**

Part B: Example Task Analysis

The purpose of the Task Analysis tool is to support teachers in selecting worthwhile tasks. While a task may not meet every Criteria of a Worthwhile Task, teachers should use their judgment to determine if the task meets enough of the criteria to an acceptable level in its current form to be a useful instructional task, or should be improved to better meet specific criteria.

Part B

Task Analysis					
Criteria of Worthwhile Task	**Rating**				**Notes on how to enhance or improve the task**
1. Is grade-level appropriate *Does the task align to the grade-level standard?*	1	2	3	**4**	
2. Makes connections between concept and procedures *What conceptual understandings are embedded in this task that students should takeaway as a result of doing this task?* *Does the task support students in understanding the concept(s) upon which a procedure is based?* *What misunderstandings or roadblocks may be surfaced by the task?*	1	2	3	**4**	Students may not make the connection that finding the number of quarter cups needed requires fraction division. This debrief will explain this connection explicitly.
3. Makes connections between different mathematical topics *What other cluster(s) or standard(s) does the task directly connect or potentially connect to?*	1	**2**	3	4	Students may approach the task pictorially or use fraction sense instead of connecting the task to fraction division. Explore adding a component to develop the relationship between fraction multiplication and division or develop debrief questions to support making this connection.
4. Requires reasoning (nonalgorithmic thinking) *Does the task require students to do more than just reproduce a procedure?* *What misunderstandings or roadblocks may be surfaced by the task?*	1	2	3	**4**	Because students may not connect the task with division (or any mathematical operation), keep the equation component to support making a mathematical connection.
5. Connects to real situations that are familiar and relevant to students *Does the task connect mathematical concepts and procedures to their real world applications?* *What contextual features of the task must the students understand in order to successfully engage in the task?*	1	2	**3**	4	Select a recipe students may want to make or be familiar with and add a component that requires students to reason about how using different measuring cup sizes would affect the number of cups needed for each ingredient. Possibly use quarters and halves to develop patterns between halves and fourths.
6. Is appropriately challenging and accessible (engages students' interests and intellect) *What modifications or accommodations may need to be in place to support learning by all students (e.g., ELLs, students w/ IEPs or 504s as well as students whose understanding is beyond the task)?*	1	2	**3**	4	Extend the task by adding a part that requires students to consider how changing the cup size (divisor) would change the solution or how doubling the recipe would change the solution.
7. Provides multiple ways to demonstrate understanding of the mathematical concepts and procedures *How might students solve the problem? What prior knowledge might they apply to the task?* *Is there more than one approach students could take to solve the task? Is there more than one solution to the task?*	1	2	**3**	4	Specify that students can use words, pictures, models, and/or numbers to represent their solutions. In the task debrief, be sure to select multiple representations including pictures, number lines, and equations to illustrate the number of cups

					needed for each ingredient.
8. Requires students to illustrate or explain mathematical ideas *What representations could be used to model the mathematical concepts and procedures embedded in this task?* *How will students explain or justify their thinking?*	1	2	3	**4**	Possibly add a component that requires students to explain why their solutions are reasonable.

Part C: Example Task Rewrite

Created by:	Andrea Smith
Task Title	Oreo Dirt Pudding Task
Grade:	5
Standard:	5.NF.B.7b
Original Task:	https://www.illustrativemathematics.org/illustrations/1196

Rewritten or revised task

Oreo Dirt Pudding Recipe

3 cups Oreo cookies (crushed)
2 cups of milk
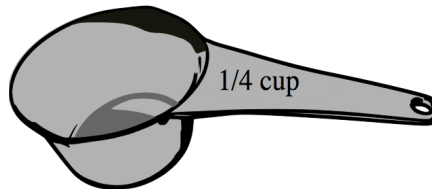1 cup chocolate pudding mix
1 ½ cups Cool Whip

Optional: Gummy Worms

Yields 8 cups

http://www.ohnuts.com/blog/dirt-pudding-cups-with-gummy-worms-recipe/

You are making the Oreo Dirt Pudding recipe. You decide to double the recipe so you will have more pudding to share.

You realize you only have a quarter cup in your kitchen to use.

1/4 cup

a.) For each ingredient, find how many quarter cups you would need for the doubled recipe. Draw a picture or a model to prove your solutions.

b.) For each ingredient, write an equation to show how many quarter cups you would need for the doubled recipe. Explain why your solution for each equation is reasonable.

c.) Now, you have a half cup instead of a quarter cup. Your friend claims you will need half as many cups for each ingredient. Is your friend's claim true? Explain why or why not using numbers, words, or pictures.

d.) You scoop out a half cup of Oreo Dirt Pudding to taste test. If you share it equally with a friend, how much pudding will each of you get? Write an equation that represents this situation.

Task extensions

e.) You have 12 cups of Oreo Dirt Pudding left. You decide to share the leftover pudding with your class. If you make $\frac{2}{3}$ cup servings of the pudding, will you have enough pudding left to share with 20 people? Use words, numbers, or pictures to prove your solution.

f.) Explain how the number of cups you would need for each ingredient would change if you used each of the measuring cups listed below to make the recipe.

$\frac{1}{3}$ cup $\frac{3}{4}$ cup