

## CORE Assessment Module Module Overview

<b>Content Area</b>	Mathematics
<b>Title</b>	Soccer Snacks
<b>Grade Level</b>	Grade 5
<b>Problem Type</b>	Performance Task
<b>Standards for Mathematical Practice</b>	<p><b>Mathematical Practice 2 (MP2):</b> Reason abstractly and quantitatively.</p> <p>Mathematically proficient students:</p> <ul style="list-style-type: none"> <li>• Make sense of quantities and their relationships in problem situations.</li> <li>• Bring two complementary abilities to bear on problems involving quantitative relationships: <ul style="list-style-type: none"> <li>○ Decontextualize—to abstract a given situation and represent it symbolically; and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents) and</li> <li>○ Contextualize—to pause as needed during the manipulation process in order to probe into the referents for the symbols involved).</li> </ul> </li> </ul> <p>Use quantitative reasoning that entails creating a coherent representation of the problem at hand, considering the units involved, attending to the meaning of quantities (not just how to compute them) and knowing and flexibly using different properties of operations and objects.</p>
<b>Common Core State Standards</b>	<p><b>5.NF.7</b> Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions</p> <p><b>5.NF.7a</b> Interpret division of a unit fractions by a non zero whole number and compute such quotients.</p> <p><b>5.NF.7b</b> Interpret division of a whole number by a unit fractions and compute such quotients,.</p> <p><b>5.NF.7c</b> Solve real world problems involving division of unit fractions by non zero whole numbers and division of whole numbers by unit fractions, e.g. by using visual fraction models and equations to represent the problem.</p>
<b>SBAC Assessment Claims</b>	<b>Claim 2: Problem Solving</b> —Students can solve a range of complex well-posed problems in pure and applied mathematics, making productive use of knowledge and problem solving strategies.
<b>Task Overview</b>	Students will be asked to solve some constructed response questions involving division of unit fractions and whole numbers. Students will also write a letter that explains mathematically why one sugar substitute is more economical than the other
<b>Module Components</b>	1) Scoring Guide 2) Task

## Soccer Snacks Scoring Guide

Description	Points	Total Points
Credit for specific aspects of performance should be given as follows:		
1. Student gives correct answer: 15 batches	1	1
2. Student gives correct answer: 27 batches	1	1
3. Student gives correct answer: 1/6 of a shift Student draws a correct visual model, which could include: <ul style="list-style-type: none"> <li>• A number line</li> <li>• A model where half the region is divided into three equal parts</li> </ul>	1 2	3
4. Student writes a correct mathematical computation: 1 bottle of agave syrup will yield 32 batches of cookies and 1 bag of artificial sugar will yield 18 batches of cookie (one point for each answer) Student correctly explains that agave is the better deal using a reasonable argument, which should include a cost justification and could include a reference to the cookies being healthier. (1 point for each part)	2  3	5
<b>TOTAL POINTS:</b> (possible points = 10 points)		

## Soccer Snacks

### Baking Cookies: Division of Fractions

Fred and his family are in charge of bringing the snacks to the next soccer game, so he decides to bake cookies.

It takes  $\frac{1}{3}$  of a cup of sugar to make one batch of oatmeal cookies.

1. When Fred looked in his kitchen cabinet he saw he had 5 cups of sugar. How many whole batches of oatmeal cookies can he make with 5 cups of sugar? Show your work.
  
  
  
  
  
  
  
  
  
  
2. After he baked his first batches, he needed more sugar. When Fred went to the grocery store, he saw that sugar was sold in 6-cup bags or 9-cup bags. How many whole batches of oatmeal cookies could be made with a 9-cup bag? Show your work.

Fred is working the concession stand at one of the games.

3. He signed up to work  $\frac{1}{2}$  a shift. He realized later that this was too long and two of his friends volunteered to help him out. The three friends split the  $\frac{1}{2}$  shift equally. What fraction of the whole shift is each friend working? Use a visual model to explain your answer.

Unfortunately, the parents at the school are complaining that the cookies have too much sugar in them.

- Fred wants to make the cookies healthier and there are two options. Each option costs more than regular sugar because sugar substitutes are more expensive. Below are the two options.

Sugar Substitute	Sugar Equivalency	Amount Available for Sale in Stores	Cost
Agave syrup	1/3 cup sugar = 1/4 cup agave syrup	8-cup bottles	\$9
Artificial sugar	1/3 cup sugar = 1/3 cup artificial sugar	6-cup bags	\$9

Fred's mom is unsure about spending more money. Help Fred explain to his mom why he should change the recipes to use a sugar substitute and be sure to explain which one is the better deal. Use words, diagrams, or numbers to explain your answer.