The Candy Company
Task #5

(This Task builds from Task 1, 2, 3, and 4)

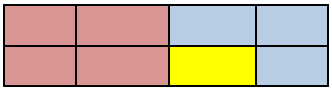
Adapted North Carolina Department of Public Instruction

Student Objectives: "I can decompose a whole unit into an addition equation where all the fractions have the same denominator, and the sum is one whole."

Standards to Measure	**Mathematical Practices**
4.NF.3 Understand a fraction a/b with a>1 as a sum of fractions 1/b. **a.** Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. **b.** 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.* **c.** 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.	4. Model with mathematics. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning.

Materials:
connecting cubes, math notebooks, markers/crayons

G **Engage Students with the Goal**	<u>State and Rate</u> Objective: "I can decompose a whole unit into an addition equation where all the fractions have the same denominator, and the sum is one whole." Students rate themselves to the goal (1, 2, 3, 4).	Setting Objectives and Providing Feedback
A **Access Prior Knowledge**	"If you could choose any flavors to make a special new kind of candy, what would you choose to include?" 	Nonlinguistic Representation Identifying Similarities and Differences

N **New Information**	In today's activity, students build "Special Bars" from different colored connecting cubes. Each color will represent a different flavor of candy. The bars come in different sizes depending on the number of candies the buyer wants. The teacher will need to make a bar using 8 total cubes prior to the beginning of class. *"Today we are going to pretend to visit a special candy store called Kendall's Candy Company. At the company they have a very unique candy bar called the Special Bar. This bar is special because the buyer of the bar is able to pick out all the flavors that will be in the bar. This way each bar is different and the buyer can get exactly what they want. As a treat, each person who visits the store receives a free 8 piece Love Bug Bar at the end of their visit."* *To personalize this task teachers may want to use their name, example: Mr. Smith, Smith Bar.* Students could even use their names when designing a bar of their own. *"Let's look at the Special Bar that I made on my visit."* Share with student a bar you created that has 8 pieces.  Take a moment to discuss the flavors that are possible. (see possible flavors) **Suggested Questions:** • Which flavor of candy do I have the most of? • Which flavor of candy do I have the least of? • How do you know which candy I have the most of? • How much of my bar is flavored blueberry? Cherry? Banana? Lime? etc. The answers of the students should be in fraction form. You are not asking how many pieces are certain flavors, but how much of the bar is that flavor. As students tell you the fraction for each flavor, record the fractions on the board. If I add up the all the fractions 3/8 + 4/8 + 1/8 I will get 8/8 which is the whole candy bar. Today you are going to build Special Bars of different sizes and record them in you math notebook. First, you will build a Special Bar of that has 8 pieces of candy. Then you will record the bar by drawing it in your notebook. After that you will write an equation to show the sizes of your Special Bar. You will repeat the process with Special Bars of different sizes. (2, 3, 4, 5, 6, 8, 10, or 12 pieces)	Similarities and Differences Nonlinguistic Representation Cues, Questions, and Advance Organizers

A **Application**	**Building and Recording Special Bars** Students work on building and recording different sized Special Bars. They first start with a bar that has 8 pieces of candy. As the students are building and recording the bars, the teacher should be questioning the students work. • How many (flavor) pieces do you have? • How many more pieces would you need to complete a bar? • Which do you have more of? Less of? Equal to? • What does your equation look like? • How are you getting the fractions for your equation? • How does your representation match your Love Bug Bar? Make sure the representations and equations that are being recorded are correct. Students re-build their favorite Special Bar from the day. Bring the Special Bar and the equations for the bar to a large group meeting. Students share their drawings and discuss the equation that goes along with it. Other students may want to try figuring out the equation before the presenting student shares it. Students write a story problem about their Special Bar. *Regan's Special Bar was 4/10 Cotton Candy, 5/10 Marshmallow, and 1/10 Orange. Her dog, Izzy ate all of the cotton candy pieces while she was at school. How much of her Love Bug Bar was remaining?* Students are given part of a bar, and need to complete the rest of the bar. *I have 7/12 of my bar complete with banana and chocolate. I don't want any more banana or chocolate, but I want two more flavors, what are some of my options?*	Cooperative Learning Providing Feedback Generating and Testing Hypotheses Practice and Homework
G **Revisit the Goal**	<u>State and Rate</u> Objective: "I can decompose a whole unit into an addition equation where all the fractions have the same denominator, and the sum is one whole." Students rate themselves to the goal (1, 2, 3, 4).	Setting Objectives and Providing Feedback

Evaluation of Students

Formative:
As you are working with the students are they able to describe each section of the bar in fraction from? Can they create equations that equal a whole?
Summative:
If I had a bar with 3 licorice, 3 cotton candy, 2 apple, and 4 orange pieces, could you draw what the bar looks like. Can you write an equation that represents my Love Bug Bar?

Plans for Individual Differences

Intervention:
Limit the number of types of candy per Special Bar. Start with only two colors, and then continue to add one at a time.
Extension:
Build the Mega Special Bar which is only sold for Valentine's Day. The Mega Special Bar has 100 pieces of candy, and can have up to 10 different types of candy.

Possible Flavors for the Colored Connecting Cubes

Red – Cherry
Blue – Blueberry
Light Green – Lime
White – Marshmallow
Brown – Chocolate
Black – Licorice
Yellow – Banana
Pink – Cotton Candy
Dark Green – Apple
Orange – Orange