

Baking with Fractions

Facilitation by: Baylie Figueroa & Si Mon' Emmett

Description: 3rd grade students will take on the role of bakers at a new local bakery in Austin. They will help the owner of the store create a recipe for the world's best chocolate chip cookie using math tools such as fractions, while also using imagination and movement.

Subject Matter: Exploring the basics of fractions through group activities, process drama and movement.

Rationale: We are teaching this lesson to provide students with an applicable use of fractions for common practices such as cooking, while providing students with opportunities to take on a role and use movement as a form of expression.

Materials Needed: Baking ingredients made from construction paper, beads or other craft items (*to convey chocolate chips, flour, sugar, butter, eggs, etc*), scissors, bowls, apron for teacher in role

Objectives:

- Students will know basic elements of fractions: *equal pieces, whole pieces, half, quarter, etc.*
- Students will be able to identify fractions in more common, everyday-life situations such as baking
- Students will appreciate their own ability to apply math skills to imaginative play and vice versa

TEKS Addressed:

117.113.1.D *Reflect the environment, portray character, and demonstrate actions in classroom dramatizations.*

117.113.2.B *Participate in a variety of roles in real life or imaginative situations through narrative pantomime, dramatic play, or story dramatization.*

117.113.3.D *Cooperate and interact with others in dramatic play.*

117.113.5.B *Discuss and evaluate simple dramatic activities and performances.*

Lesson

Preset: The Preset is how Mr. Franco's room is set up currently

Activities and Timeframe:

Time for Desserts (5 min.)

Ms. Figueroa & Ms. Emmett welcome students into the class, asking them to sit at their tables previously assigned by Mr. Franco. They introduce themselves to the class and express how excited they are to be with them this morning. Ms. Emmett goes over some expectations briefly with the students, including raising your hand when you have a question and an attention getter (two clap hand raise). The following dialogue happens after students settle into their seats.

E: Have you all eaten lunch yet? *(if answer is no)* Well I know we're pretty close to lunch, so I bet you're excited to eat lunch today! *(if answer is yes)* Oh great then you won't be too hungry during our tasty lesson

F: *(as we stretch)* My favorite part of lunch is desert! Who else likes desert? *(kids answer)* Can someone raise their hand and tell me their favorite kind of desert? *(Ms. Figueroa calls on three-five students)* Great! Those all sound so delicious!

E: *That reminds me, Ms. Figueroa! Does anyone help their parents bake these things at home? What are some of the items/tools you use to bake?* *(Ms. Emmett calls on three-five students, kids answer "bowls" "spoons" etc.). Those are great I actually have some of those! And I have this friend whose Grandmother owns a bakery right here in Austin! But she doesn't have any of these supplies and she really needs our help with a big order she has for this evening. I was thinking we could go visit her, and maybe you all could assist me in carrying the baking supplies over?* *(hand out one bowl, spoon, and baggie inside an HEB bag. Ms. Emmett will assign one student from each table to be a bag carrier).* Is everyone ready? Great let's go!

To The Bakery We Go (5 Min.)

After students collect their supplies, Ms. Emmett asks them to follow her on a walk around Austin to the bakery. Students are asked to call out sights they might see or sounds they might hear as they walk through their city. As Ms. Emmett is taking the students on a walk, Ms. Figueroa is preparing to get in role as the bakery owner by putting on an apron. Ms. Emmett will tell the students that they have arrived at the bakery and to take a seat at their baking station with their supplies. (The baking station is the table they were previously assigned to.)

Ms. Emmett will then introduce Martha, the bakery owner. **(removal of bakery location and name)** Martha will establish her extreme need for the bakers in her store. She will explain that this is her Grandmother's bakery and her grandmother is sick today and has a big order of cookies that needs to be complete by tonight. She will tell them that she can't do it by herself because she burns everything she touches and can't even make cereal or toast. After the need is expressed, she will tell the students that they are going to help her make her grandmother's cookie recipe.

Transition: The Secret Recipe

Students will be given grandma's secret cookie recipe. The recipe is below:

Grandma's Secret Cookie Recipe

Mix the following ingredients in a bowl and then bake at a high heat.

- $\frac{1}{4}$ Stick of Butter
- $\frac{2}{3}$ Bag of Flour
- $\frac{3}{8}$ Bag of Sugar
- $\frac{1}{2}$ Bag of Chocolate Chip

Baking With Fractions (10 min.)

Students will be asked to cut their ingredients using scissors to follow the recipe. After they have cut the desired amount from the paper, they will be asked to put it in the bowl. Once all the bakers are almost done with their recipe, Martha will exclaim that she wrote down the recipe wrong and just realized that the correct amount of butter is $\frac{3}{4}$ of a stick. Students will then be asked if they can fix the recipe and will begin to add more butter to the bowl. They will be asked to make sure the ingredients are well mixed. Ms. Emmett and Ms. Figueroa, as Martha, will go around and ensure that the students have the correct amount of each ingredient in their bowls before moving on. They will also make sure that all the students are participating in cutting the right amount and mixing. **Martha will ask the the bakers to put their real baking items in the middle of the table, and ask them to to bring out an invisible bowl and spoon. They will be asked by Martha what it looks like when they are mixing things quickly, slowly, happily and sadly.**

Transition: Group observation

Martha will tell the bakers that the cookie dough smells like the most delicious thing she has ever smelled and tell them that she is amazed that they haven't burned anything yet. She will then ask the bakers if they are ready to bake their cookies.

Baking the Cookies (5 min.)

Ms. Emmett will tell the students that they are going to bake their cookies using an oven that they are going to build with their bodies. She will tell the students that they are each going to be one individual part of the oven. She will instruct them that each part of the oven must have a movement and a noise that can be repeated. **Ms. Emmett and Ms. Figueroa will demonstrate how the oven will look.** This noise and movement must help the cookie bake perfectly. Ms. Emmett will tell the students that their individual table group will be baking their cookie dough together. Ms. Emmett will **ask two specific machines to perform for the class.** Once the students create the machine, it will be revealed by Martha that the cookies have been baked. Martha will bring out cookie trays with "cookies" made from a brown pipe cleaner and a bead and ask all the students to take one and wear it as a bracelet. Martha will thank the bakers for their help. Ms. Emmett will then lead the students back to Kipp in another walk around the neighborhood while **Ms. Figueroa hands out the cookies bracelets.** Ms. Figueroa will then exit role and take off the apron.

Closing (5 min.):

Students will be asked to make a sitting circle on the rug on the floor of Mr. Franco's classroom. Ms. Emmett and Ms. Figueroa will take turns asking the following questions and facilitating dialogue about the activity.

- *Ms. Emmett: Today you were able to help Martha make some cookies. What were some brainstorming tools you used to decide the right amount of the ingredients? How did you fix the recipe when Martha gave you the wrong amount of the butter?*
- *Ms. Figueroa: You also had to work with your tablemates to help make the cookies. What are some different ways your group used teamwork to make sure the recipe was correct?*
- *Ms. Emmett: Can anyone think of any other situations in your everyday life where you might have to use fractions?*

Extension Activity/Homework (if any):

Not Applicable

Contingencies:

If there's extra time, students will bake under different circumstances. (In a hurry, Slowly, Sadly, Gladly, etc)

If there is not enough time, we will completely cut OR minimize the last Baking the Cookies activity so that only three volunteers come up and “build” the oven with their bodies and everyone else (on the count of 3-2-1) shouts out a collective “ding ding ding” then the cookie bracelets are brought out