

Chapter 17



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I am a current Chicago Public Schools teacher at Helen C. Peirce Elementary School. I have taught 6th grade mathematics for the past 3 years. Before I moved to 6th grade, I taught 8th grade math and science for 7 years. I was born to teach! I love my job. I can't imagine doing anything else in the world. I completed my undergraduate degree in Education at Loyola University. But, I did not plan on becoming a teacher. I actually didn't know what I wanted to do, until 2001. After the tragedy of 9/11, I knew I had to be a force for change. How do you get people to change? You teach! I completed a Masters in Leadership from Concordia University, and my Science and Mathematics endorsements from University of Chicago. I am forever a learner. If there ever comes a time when I think I know everything, I should probably retire.

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Grade Level: 6th

Content Area Topic: Math - Dividing and Multiplying Fractions

Content Area Standard(s): 6.NS

Learning Objective(s):

Mathematics: Students will demonstrate their thinking strategies on how to divide fractions while encompassing previous unit objectives.

Language: Students will discuss the unit project utilizing proper math terminology.

Suggested Time Allotment: 1-2 class sessions

Sequence in Learning:

- Discuss how students divide fractions (Using decimals or fractions).
- Students share how they have used division in class or in other classes.
- Pair students by their pre-assessed achievement levels and have them visit www.khanacademy.com on an Ipad or laptop. Students should have already logged on to create an account in previous class periods.
- Students should select 2-3 videos from www.khanacademy.com to review what has already been taught in previous classes.
- For additional review, have partners exchange math journals and practice example problems from previous lessons. Teacher has students keep a journal of daily math lessons as notes for review.
- Teacher will model two different ways to divide fractions. Include any tricks or tips that have been previously taught.
- Ready, Set, Reveal! Display project recipe directions on SMART Board. Remind students that the teacher will be circulating and observing communication and application. For differentiated instruction, have proficient readers in each group. Use the “jigsaw” model so that directions lead the students and teacher acts as facilitator.
- Allow students sufficient time to complete the mathematical steps and recipe.
- When students have finished, lead a whole class discussion on the “epic failures” (learning from mistakes), “Indiana Jones” (discoveries), and “questions” (the ‘what if’s’).
- The discussion and activity will inform the teacher’s next steps of instruction.

Materials & Resources Needed:

- Easy Dry Snack Mix Recipe (Chex Mixes are awesome!)
- Digital copies and paper copies of the recipe
- All materials for recipe (enough for groups of 2-3 students each)
- Powerpoint for lesson (Attached)
- Large poster paper
- Calculators
- Chromebooks, laptops, iPads (for khanacademy.com)
- Student journals
- Extra paper
- Pencils/Pens
- www.khanacademy.com

Lesson Activities & Sequence:

Following the attached power point

- **5 min.** Discuss how students use division and/or fractions (changing fractions into decimals is welcomed)
- **5 min.** Students share how they have used division in their everyday lives or in other classes.
- **3-5 min.** Pair students by their pre-assessed achievement levels and visit khanacademy.com on an Ipad or laptop. Students should have already logged on to create an account in previous class periods. (Groups should be no more than 2-3 students and leveled according to a pre-assessment related to fractions.)
- **10 min.** Students should watch 2-3 videos from khanacademy.com to review what has already been taught in previous classes. (At-risk students should be given specific videos to re-watch)
- **7-10 min.** Math partners should switch math journals and practice example problems from previous lessons.
- **7-10 min.** Teacher will review the two methods to divide fractions. Include any tricks or tips that have been previously taught.
- **1 min.** Reveal the directions for putting the snacks together. Remind students that the teacher will be circulating to observe communication and application. Remember diverse learners!
- **20-30 min.** Allow students time to complete the mathematical steps and recipe. The time may depend on the class.
- **2-5 min.** When students have completed the project, have a whole class discussion on the “epic failures” (learning from mistakes), “Indiana Jones” (discoveries), and “questions” (the ‘what if’s’).

Proficiency:

- Students will be able to divide fractions into reasonable measurements to complete the recipe.
- Students will be able to see mistakes and make corrections.
- Students will be able to discuss the above activity using proper

- math terminology and communicate their findings.
- A final paper/pencil assessment will be given at the end of the unit.

Review dividing fractions:

Directions:

1. Go to www.khanacademy.com on your chrome books with your fracti groups.
2. Log into one of your accounts
3. Search dividing fractions
4. Pick and watch 2 videos to review what we have learned
5. Switch math journals and review each others notes.
6. Complete your example problems for quick practice

**Review dividing fractions using KCF method (KCF = Keep the first fraction as is, Change the operation to multiplication, Flip the second fraction to its reciprocal, then multiply across). Review dividing fractions by turning them into decimals as well. Keep the review short and simple. If too many questions arise students are not ready for this activity.*

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Time to cook!

On the next slide you will find a recipe.

I WILL NOT BE HELPING YOU!

I WILL BE LISTENING AND TAKING NOTES ON QUESTIONS THAT ARISE!

Your fraction groups will follow the recipe and alter it mathematically so each member of your group gets exactly 2 cups to eat. Use the materials from the table (remember to share) and follow your altered recipe to create your snack.

REMEMBER SERVING SIZE!

This involves a lot of prior knowledge. Make sure to discuss every step and to check your notes from previous unit, especially the measuring unit.

- * Remind students that the teacher is the facilitator.

★★★★★

Ranch Party Mix: SHOW ALL WORK

Serves: 13 cups
min. Prep Time

INGREDIENTS

- ½ cup grated Parmesan cheese
- 1 packet (1 ounce) Hidden Valley® Original Ranch® Salad Dressing & Seasoning Mix
- 2 cups bite-size cheese crackers
- 2 cups small pretzel twists
- 3 tablespoons butter or margarine, melted
- 9 cups crisp corn or wheat cereal or a mixture of both

Feedback

Teachers as Learners:

Lens 1: Effect of Teachers and Students

The lesson was warm, inviting, exhilarating, and not intimidating. This approach is fraction friendly and takes the stigma off of math being boring. Food is a natural extension for fractions. This lesson had an appropriate mix of touch and tech. Videos and review efforts worked very well for all learners. Remind students of other elements such as measuring and scaling. Measuring and scaling units should be taught before this fraction specific standard.

Elements of Pretty Good Practice:

Lens 2: Articulating Best Practices

This lesson was hands on, kinesthetic learning. There were plenty of chances for activating prior knowledge, and using appropriate technology. Teacher used a lot of guiding questions. Students were sharing their notes. This lesson required students to calculate before using the materials. Used friendly knowledge (KCF = Keep first fraction, change division to multiplication, flip last fraction to its reciprocal) to explain the approach.

Modifications and Adaptations:

Lens 4: Extensions and Adaptations

For differentiated learners the teacher may use KFC instead of KCF. KCF would stand for keep, flip, and calculate. In certain schools this may be extended to a 2-day. Extend it to a cultural food fair/ International Day to invite families. Another extension is to make it for

100 people. Look into Common Threads to incorporate afterschool programs (Food and Science). At risk students should have a recipe that has only 3 steps, as well as a step by step poster.

Questions Arisen:

Lens 5: Questions

How do you assess the prior knowledge of fractions before starting this activity? *A pre-assessment is given before starting the unit.* How do you assess the outcome of the experiment for Indiana Jones vs. the Epic Failures? *The final unit assessment has questions incorporating the “epic failures” and “Indiana Jones”.* What are the safety procedures to protect kids with allergies? *A questionnaire is given out at the beginning of the school year that will inform the teacher on how to modify for such students.*

Peer Feedback:

Stay engaged. Don't assume students will remember, even after reviewing. Ask questions as they work. And remember to discuss in the end or have each group present out their end results.