

Van Gorder Elementary
Room A-1

Stacy Drum
1:20-2:30PM

Standards: Apply and extend previous understandings of multiplication and division to divide fractions by fractions.

CCSS.Math.Content.6.NS.A.1 Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem.

Aspects of rigor: This lesson requires students to pursue *conceptual understanding* and *application*.

Lesson Topic: Students will read and solve multiplication and division fraction word problems, in small groups, using a variety of tools. They will assess each other's understanding of this topic in small groups.

Core Action Indicators: *Core Action 1* – Ensure the work of the lesson reflects the shifts required by the CCSS for mathematics. A. The lesson focuses on grade-level cluster, grade-level content standards or parts thereof; B. The lesson intentionally relates new concepts to students' prior skills and knowledge; C. The lesson intentionally targets the aspects of rigor called for by the standard being addressed; D. The lesson reflects the full intent of the grade-level cluster, grade-level content standard or parts thereof being addressed

Core Action 2 – Employ instructional practices that allow all students to master the content of the lesson. A. The teacher uses explanations, representations, and/or examples to make the mathematics of the lesson explicit; C. The teacher provides time for students to work with and practice grade-level problems and exercises; D. The teacher uses variation in students' solution methods to strengthen other students' understanding of the content; F. The teacher guides student thinking toward the focus of the lesson and summarizes the mathematics with references to student work and discussion

Core Action 3 – Provide all students with opportunities to exhibit mathematical practices in connection with the content of the lesson. A. The teacher uses strategies to keep all students persevering with challenging problems; B. The teacher establishes a classroom culture in which students explain their thinking; E. The teacher has established a classroom culture in which students choose and use appropriate tools when solving a problem; F. The teacher asks students to explain and justify work and provides feedback that helps students revise initial work.

Materials: graph paper, colored pencils, sticky notes, linker cubes, lined paper, pencils, word problems

Demographics: 27 students, 4% ELL, 7% Sp. Ed., 56% were in my class as 5th graders (moved up with class)


Lesson Description: This is a beginning lesson. Students were exposed to division of fractions (5.NF.7) last year. This is an extension of last year's lessons. I am mixing in some multiplication of fractions since I have seen students have a hard time differentiating between division and multiplication of fractions with story problems.

Lesson Outline: Before beginning the lesson, students are to look at the Math Practices. Teacher discusses that they need to really pay attention to them. This is a review. 1. Students will have all materials to solve word problems at their disposal. 2. Each group will receive a word problem that is either division (3) or multiplication (2). 3. Students will be expected to discuss and work together as a group to solve the problem, using any tools at their disposal. 4. Each group will have about 5 minutes to solve the problem, write it on their paper, then hand the solution to the teacher. 5. Questions will then be passed among the groups and groups will answer the next set. This continues until all groups have answered all of the questions. It is important that groups not see how the other groups have answered previous questions. 6. Groups will do a "gallery walk". The teacher puts all of the answers out by the questions. Students go from group to group, looking at solutions and writing questions and comments on sticky notes. 7. Class comes back together after all questions have been visited. Class discussion about the problems occurs at this point.

Other Information: This is a difficult lesson for most students. Though they have been exposed to these types of problems, it has been a while and making models is always a challenge. Students should be able to discuss in small groups and then whole class. They will be able to constructively critique the work of others.

1 Make sense of problems and persevere in solving them

- Understand the meaning of a problem and persevere in solving it.
- Plan a solution pathway.
- Monitor and adjust the solution pathway as needed.
- Review the solution pathway and make adjustments as needed.




2 Reason abstractly and quantitatively

- Apply mathematical concepts to solve problems.
- Represent problems using mathematical models.
- Use mathematical models to represent problems.
- Use mathematical models to solve problems.
- Use mathematical models to represent problems.




3 Construct viable arguments and critique the reasoning of others

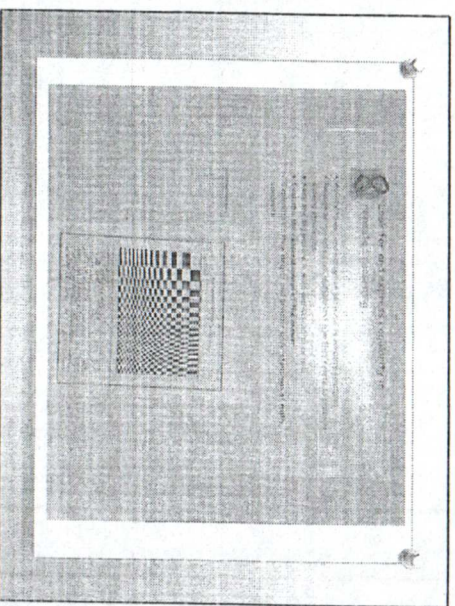
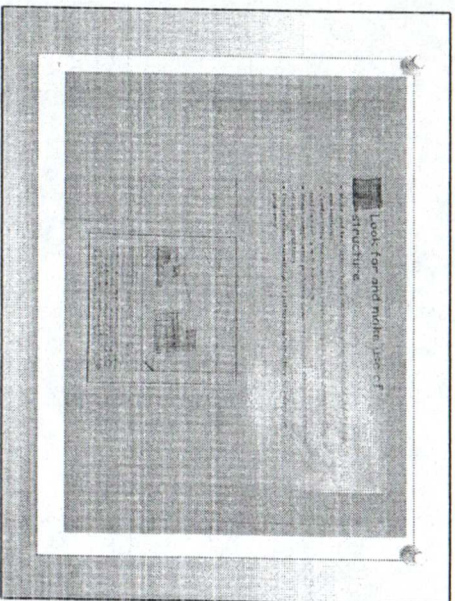
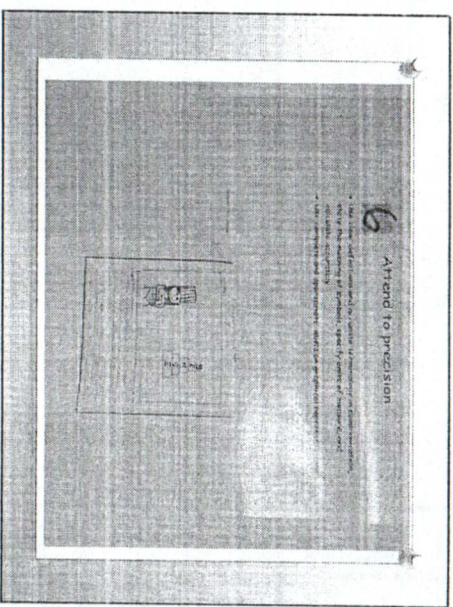
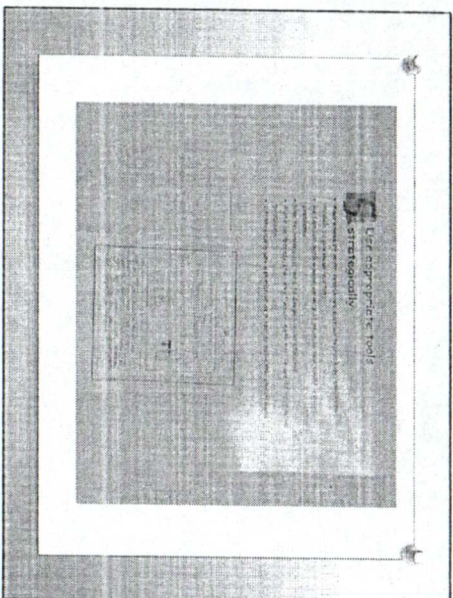
- Understand and use mathematical arguments.
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4 Model with mathematics

- Apply mathematical concepts to solve problems.
- Apply mathematical concepts to solve problems.
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- Apply mathematical concepts to solve problems.
- Apply mathematical concepts to solve problems.





1

Alex exercised for $\frac{3}{4}$ hour. He lifted weights for $\frac{1}{5}$ of that time. What fraction of an hour did he spend lifting weights?

2

A bat can eat half its weight in insects in one night. If a bat weighing $\frac{3}{4}$ lb. eats half its weight in insects, how much do the insects weigh?

3

The hiking trail is $4\frac{1}{2}$ miles long.

There are 3 markers evenly posted along the trail to direct hikers. How far apart are the markers placed?

4

You have $\frac{3}{4}$ cup of salsa for making burritos. Each burrito requires $\frac{1}{8}$ cup of salsa. How many burritos can you make?

5

A recipe for one loaf of bread requires $\frac{2}{3}$ cup of oil. You have 2 cups of oil. How many loaves of banana bread can you make?