Isabel Ramos

Pre-Algebra

Demographics: This learning progression is made to take place in a high school Algebra/Geometry classroom of 17 students. This class consists from freshman's and seniors. The desks in the classroom are arranged in groups of four. The lesson is based off a worksheet on percent's, decimals, fractions, and converting them back and forth. This is a Pre-Algebra worksheet that the students needed to revisit. The students have prior knowledge of areas and fractions and know what a percent is.

Addressed CCSS for Mathematics

CCSS.MATH.CONTENT.4.NF.C.5

Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100.2
Understand ratio concepts and use ratio reasoning to solve problems.

CCSS.MATH.CONTENT.6.RP.A.1

Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.

CCSS.MATH.CONTENT.7.RP.A.1

Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units.

Learning progression Overview:

I plan to have my students use their conceptual knowledge by having them show and understand how to convert percent's, fractions and decimals back and forth using, mathematical reasoning leading up to them having to justify the steps and explain them and why they used a certain

method to get the answer showing their procedural understanding. I will have my students review the meaning of percent and have them show me what they think a percent is and means. I will also have them review on conversions. This will lead them to figuring out how to convert percents decimals and fractions which will lead them to the second lesson on ratios and the interpretation of ratios then leading to the third lesson on computing unit rates using fractions.

Supports

Math is very stressful for many students especially my students. In my assessment, I plan have my worksheet be cut into 4 sections and not have so many problems to not overwhelm students. I will also allow the students to work with the people they are sitting in groups with and partner up the students who don't know math so well with students who excel at math so they could help another out. This will then allow for the students who are struggling with the material to get some help from their peers.

Learning progression:

I will start off my lesson with the hinge question: What is a percent? Then I will go off on what a percent means and what it means to take the percent of something. After this I will ask students if they know anything about percent's and converting them from percent to decimal or to fractions or vise versa. Before teaching I will review percent's and fractions CCSS.MATH.CONTENT.4.NF.C.5. Then I will show them how to see structure in fraction and in the conversions and the structure in ratios to help them with the conversions CCSS.MATH.CONTENT.6.RP.A.1. Then finally, I will go over some of the problems off the worksheet with them and make them understand ratios and fractions CCSS.MATH.CONTENT.7.RP.A.1. I will make sure to ask my students questions during my

lesson to get them involved and to make sure they are understanding what is being taught. I will show them the example of:

$How\ to\ convert\ 90\%\ to\ decimal?$

$$\frac{90}{100} = .90$$

After I am done introducing this first example I will ask students questions and make sure they are getting proper understanding. I will go over more examples and have students participate in the lesson by asking them what I should do next. I will then hand them the worksheet so they could take a look at the problems. I will go over a couple of problems on converting a fraction to decimal then to a percentage to make sure they are understanding what I am teaching. I will give the students an opportunity to show what they are learning by having them answer a question on the board about conversions.