




Empacts Project Equivalent Fractions

4th Grade Math Class
Shaw Elementary
Sydney O'Barr, Adriana Huezco, Katelyn Freitag
Teaching Mentor: Kerry Boles



Project Introduction

We are pre-service teachers at NWACC taking Survey of mathematical structures 2. We used the 4th grade Arkansas mathematics standards to teach a 4th grade class at Shaw Elementary. We met with the teacher to see what the class needed help with the most. We made activity sheets and exit tickets to help them review fractions.

Meet Our Team!



Adriana Huezco, Kerry Boles, Katelyn Freitag, Sydney O'Barr

Where We Taught

Willis D. Shaw
Elementary School
Springdale, AR



Mathematics Standards

Grade 4 – Arkansas Mathematics Standards

Number and Operations - Fractions	Extend understanding of fraction equivalence and ordering
AR.Math.Content.4.NF.A.1	<ul style="list-style-type: none">By using <i>visual fraction models</i>, explain why a <i>fraction</i> a/b is equivalent to a <i>fraction</i> $(n \times a)/(n \times b)$ with attention to how the number and size of the parts differ even though the two <i>fractions</i> themselves are the same sizeUse this principle to recognize and generate equivalent <i>fractions</i> <p>For example: $1/5$ is equivalent to $(2 \times 1) / (2 \times 5)$.</p>
AR.Math.Content.4.NF.A.2	<ul style="list-style-type: none">Compare two <i>fractions</i> with different <i>numerators</i> and different <i>denominators</i> (e.g., by creating common <i>denominators</i> or <i>numerators</i>, or by comparing to a benchmark <i>fraction</i> such as $1/2$)Recognize that comparisons are valid only when the two <i>fractions</i> refer to the same whole. Record the results of comparisons with symbols ($>$, $=$, $<$), and justify the conclusions (e.g., by using a <i>visual fraction model</i>)
Number and Operations - Fractions	Understand decimal notation for fractions, and compare decimal fractions
AR.Math.Content.4.NF.C.5	<p>Express a <i>fraction</i> with <i>denominator</i> 10 as an equivalent <i>fraction</i> with denominator 100, and use this technique to add two <i>fractions</i> with respective <i>denominators</i> 10 and 100</p> <p>For example: Express $3/10$ as $30/100$, and add $3/10 + 4/100 = 34/100$.</p> <p>Note: Students who can generate equivalent <i>fractions</i> can develop strategies for adding <i>fractions</i> with unlike <i>denominators</i> in general. However, addition and subtraction with unlike <i>denominators</i> in general is not a requirement at this grade.</p>

Lesson Plan

DAILY LESSON PLAN



Subject/course: Math

Lesson duration: Around 45 minutes

Topic: Equivalent Fractions Review

Date: April 18, 2024

Class objective(s): To be able to recognize equivalent fractions and explain the reasoning

MATH STANDARD

AR.Math.Content.4.NF.A.1, AR.Math.Content.4.NF.A.2, AR.Math.Content.4.NF.C.5

WARM-UP

We will go through the slideshow that has a few equivalent questions that we will work through with the students and have them demonstrate understanding.

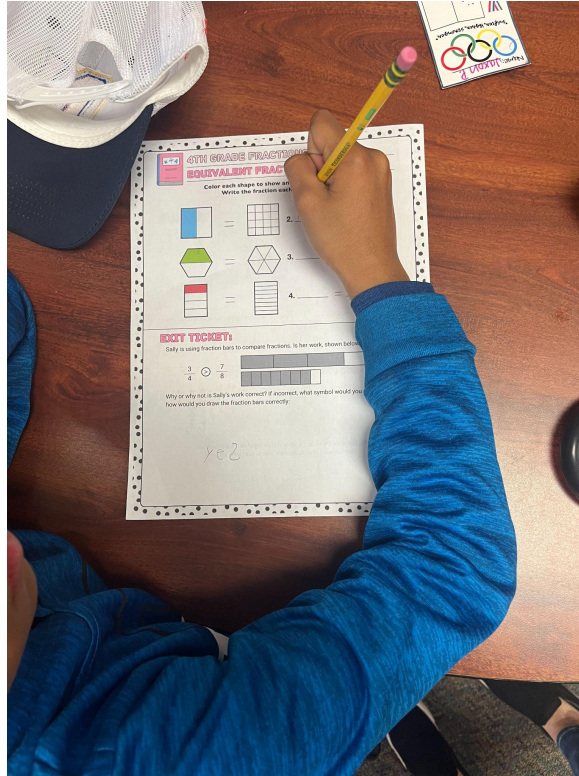
CLOSURE

Students will complete the exit sheet in a limited amount of time. If finished before the time runs out, students will challenge themselves with the questions on the back. Students have demonstrated their understanding of equivalent fractions.

ASSIGNMENT

A worksheet about equivalent fractions will be provided for students to work through. We will give them some independent time, and then work through the problems with them.



Instructional Images







Outcome

4TH GRADE FRACTIONS REVIEW
EQUIVALENT FRACTION PRACTICE


Color each shape to show an equivalent fraction.
 Write the fraction each shape shows.

1.  =  2. $\frac{1}{2} = \frac{8}{16}$

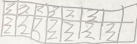

3.  =  3. $\frac{1}{2} = \frac{3}{6}$

4.  =  4. $\frac{1}{4} = \frac{2}{8}$

EXIT TICKET:
 Sally is using fraction bars to compare fractions. Is her work, shown below, correct?

$\frac{3}{4} > \frac{7}{8}$ 



Why or why not is Sally's work correct? If incorrect, what symbol would you use and how would you draw the fraction bars correctly.



 $\frac{3}{4} > \frac{7}{8}$ 



$\frac{3 \times 2}{4 \times 2} = \frac{6}{8}$ $\frac{6}{8} < \frac{7}{8}$

4TH GRADE FRACTIONS REVIEW
EQUIVALENT FRACTION PRACTICE


Color each shape to show an equivalent fraction.
 Write the fraction each shape shows.

1.  =  2. $\frac{8}{16} = \frac{1}{2}$

3.  =  3. $\frac{1}{2} = \frac{3}{6}$

4.  =  4. $\frac{2}{8} = \frac{1}{4}$

EXIT TICKET:
 Sally is using fraction bars to compare fractions. Is her work, shown below, correct?

$\frac{3}{4} > \frac{7}{8}$ 

Why or why not is Sally's work correct? If incorrect, what symbol would you use and how would you draw the fraction bars correctly.

She is incorrect because if you look at the graph, it literally shows that $\frac{7}{8}$ is greater than $\frac{3}{4}$.
 the graph is shown incorrectly

What We Learned

- Time management
- Patience
- A feel for future teaching
- Problem solving
- Teamwork
- Class management
- Using mathematical standards to create and develop a lesson plan
- How to access and teach a classroom
- Importance of classroom environment

College Curricular Goals

- Show and use understanding of mathematical standards
- Learn what is needed to create a successful lesson plan and use it in a classroom setting
- Understand the requirements for the course of study and EMPACTS program

Acknowledgments

- Kerry Boles - fourth grade teacher at Shaw Elementary
- Professor Phillips - EMPACTS project facilitator at NWACC
- Dr. Marjorie Whitmore - Mathematical Structures teacher

Citations

<https://www.canva.com/design/DAGA70dw6Zk/iJxEmlv7DEZPeFoL3bFig/edit>

https://dese.ade.arkansas.gov/Files/20201211113836_Arkansas_Mathematics_Standards_K_5.pdf

<https://slidesgo.com/theme/fraction-charts-infographics#search-fractions&position-10&results-26&rs=search>

<https://www.education.com/worksheet/article/finding-equivalent-fractions-using-multiplication-and-division/>

<https://docs.google.com/document/d/1Nu2MGtle2bPWaCldqeMnKdzlotksdoLAhXwk42V-9ww/edit>

<https://www.canva.com/design/DAGCoDBMAXQ/ornVu8CZwtvJTPmLbZuDlw/edit>

https://docs.google.com/presentation/d/1Enn2_SbCpT38zhrp-UCjin1cGKXJN0X_IBwrdm0eeGQ/edit#slide=id.g26fa95e34bb_0_0