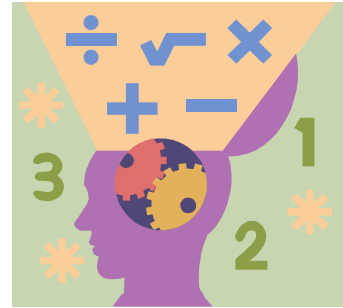


Algebra/Geometry Institute Summer 2010

Faculty Name: Elizabeth B. Fisher

School: Em Boyd Elementary

Grade Level: 4th grade



- 1 Teaching objective(s): (1) Model and identify equivalent fractions (Mathematics Framework , 1f)
(2) Model and perform the basic operations with fractions and integers (Math Institute Framework, 1e)

2 Instructional Activities

Introduction:

- Teacher will have students recall what a fraction is
- Teacher will tell students today they will learn how to model and find equivalent fractions (but say “find new names for fractions” instead of equivalent fractions).

Activity 1

- Teacher will distribute fraction circles to each student. On overhead, teacher will model 1 or 2 examples of how to “find a new name” for a fraction by placing a fraction piece on overhead and then placing the other fraction pieces on top that cover the same amount as the first fraction. (Examples: $1/3 = 2/6$; $1/5 = 2/10$)
- Students may work in pairs. As teacher gives different fractions, students will place the first fraction in front of them. Teacher will tell students to “**find a new name**” for the given fraction.
- As students cover given fractions with its equivalent, they will also have to record fractions on scratch paper (not assessment chart) and write the fractions as equalities. (Example: $1/2 = 2/4$)
- After several fractions are done, teacher and students will review answers to see if students have “different” new names for the same fraction. Different new names will be placed on the overhead.
- Teacher will ask students if they know the mathematical term for the fractions that they “renamed”. Teacher will tell students that they have learned how to model and find **equivalent** fractions. Have students

complete the sentence, Fractions that have different “names” but equal the same amount are called equivalent fractions!

Activity extension

- Teacher will choose a fraction and its “new name” ($\frac{1}{2}$ and $\frac{2}{4}$). Ask what happened to the first fraction to change it to the new name. Teacher will explain that to find a new name for a fraction, both parts of the fraction (numerator and denominator) have to be divided by or multiplied by the SAME number. Teacher will do another example, $\frac{3}{9}$ and $\frac{1}{3}$
- Students will use the fractions created from the original activity. They will tell what number they multiplied or divided by to get the new name for each fraction.

3 Materials and Resources

A. Materials

1. overhead projector
2. overhead fraction circles
3. fraction circles manipulatives for each student or pair of students
4. paper
5. pencil

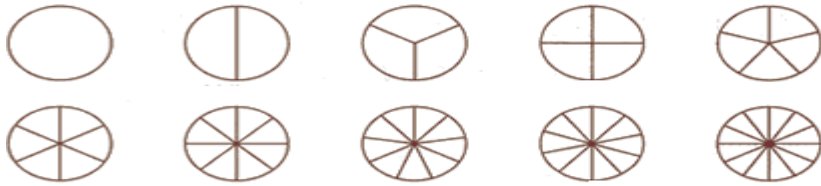
B. Resources

I have referenced no outside sources for this activity.

4 Assessment

For an alternative for paper and pencil, each student will be called to teacher’s area and model 3 equivalent fractions, record them on a teacher-made form (see below) for documentation.

fraction	equivalent (new name)	multiplied or divided?	by what number



fraction*	new names, equivalents (not all possible answers)
$\frac{1}{2}$	$\frac{2}{4}, \frac{3}{6}, \frac{4}{8}, \frac{5}{10}, \frac{6}{12}$
$\frac{1}{3}$	$\frac{2}{6}, \frac{3}{9}, \frac{4}{12}$
$\frac{1}{4}$	$\frac{2}{8}, \frac{3}{12}, \frac{4}{16}, \frac{5}{20}$
$\frac{1}{5}$	$\frac{2}{10}, \frac{3}{15}$
$\frac{1}{6}$	$\frac{2}{12},$
$\frac{2}{3}$	$\frac{4}{6},$
$\frac{6}{8}$	$\frac{3}{4}, \frac{12}{16}$

* remember that the students' fractions circles only go up to twelfths so students will not be able to model fractions with a larger denominator

