






Technology-Connected Lesson Plan

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| Title: | Equivalent Fractions |
| Grade Levels: | 3 rd - 6 th |
| Curriculum Areas: | Math |
| Measurable Objectives: | <ul style="list-style-type: none"> ☞ TLW describe the importance of fractions in everyday life by identifying equivalent fractions by manipulating pizza pieces to show other examples of an equivalent fraction. ☞ TLW will apply their prior knowledge of how a whole can be divided into equal-sized pieces and named the fractional part of that whole to discover other equivalent fractions for commonly used fractions. |
| LA Content Standards: | <ul style="list-style-type: none"> ☞ M-5-E - demonstrating the connection of measurement to the other strands and to real-life situations. ☞ Students recognized, represented and modeled real numbers, and operations verbally, physically, and symbolically by recognizing and identifying equivalent fractions of commonly used fractions ($\frac{1}{4}$, $\frac{1}{2}$, $\frac{2}{3}$, $\frac{2}{6}$, and $\frac{1}{12}$). |
| Grade Level Expectations (GLE) | ☞ Recognize, explain, and compute equivalent fractions for common fractions (N-1-M) (N-3-M) |
| K12 Educational Technology Standards: | <ul style="list-style-type: none"> ☞ Students use appropriate technology resources for solving problems and making informed decisions. ☞ Students use technology tools to enhance learning, increase productivity, and promote creativity. |
| Technology Connection: | Fraction Frenzy http://www.learningplanet.com/sam/ff/index.asp Fraction Game Tool http://illuminations.nctm.org/tools/fraction/fraction.asp Fresh Baked Fractions http://www.funbrain.com/fract/index.html Soccer Shootout http://www.funbrain.com/fract/index.html |

Procedures:

- ☞ Use an orange to review parts of a whole. As you make each cut, discuss how many equal parts of the orange (I used the following cuts 2 equal parts, 4 equal parts, and 8 equal parts). I had different students come to the board and complete the following equations:
1 whole orange = ___ halves $1 = \frac{1}{2} + \frac{1}{2}$
1 whole orange = ___ fourths $1 = \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$
1 whole orange = ___ eighths $1 = \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$
- ☞ Review definitions of numerator and denominator. By using different examples of the cut up orange, students should be able to identify and write the appropriate fractions. Ex. What fraction of the orange would I eat if I ate 2 of the 8 equal pieces? Have students identify the denominator as 8 because there were 8 equal pieces and 2 as the numerator because I was going to eat 2 of those 8 pieces ($\frac{2}{8}$ of the orange). Complete other similar examples together.
- ☞ Next, discuss the words, "equivalent fractions". Have students use the word "equal" to give examples.
- ☞ Display three of the large pizzas (4th, 8th, 12th) on the board. Have three students come to the board and stand in front of each pizza. Ask the student with 4 slices to take $\frac{1}{4}$ of the pizza, the student with 8 slices ask to take $\frac{2}{8}$ of the pizza, and the student with 12 slices ask to take $\frac{3}{12}$ of the pizza. Have each student write the fraction of the pizza that they "took" on the board. Ask the students to make an observation of what was taken from each pizza. Discuss how they each took the same (or equal) amount from each pizza. Write on the board $\frac{1}{4}$ is "equivalent" to $\frac{2}{8}$ and $\frac{3}{12}$.
- ☞ Continue to talk about what they observed. Ask how "grouping" could tell that fractions are equivalent. Point out that it doesn't matter how many slices the pizza was cut into, when the pieces taken from each pizza was compared, they were equal. Identify "grouping" as a good strategy for finding equivalent fractions.
- ☞ Next, Replace the pizzas with 4 and 8 with the pizzas with 3 and 6 slices. Have three different students go to the board and take $\frac{1}{3}$ of their pizza. Follow the same procedure as above.
- ☞ The next activity, students will need to be divided into groups. Demonstrate the activity before giving each group

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| | <p>their materials. Use the large pizza cut into 12 slices. Use fraction cards ($\frac{1}{4}$, $\frac{1}{3}$, $\frac{2}{3}$, $\frac{2}{6}$, $\frac{1}{12}$) placed inside of a small pizza box. Pull a card ($\frac{2}{3}$) from the box and have a student come to the board and take that fraction from the pizza. We replaced the slices and did a few more examples together.</p> <ul style="list-style-type: none"> 🖥️ Give the groups' materials (each student should get a bag of pizza pieces (12 slices) and each group should get a small pizza box that has their fraction cards inside). Explain that the object of the activity is to "eat" all of the pizza quicker than your partners. After each student decides how much of their pizza to eat, they must write down the equivalent fractions for each turn. Remind the students that they must keep drawing at the end of the activity until they find a fraction that is equivalent, or a fraction that is smaller. <p style="margin-left: 40px;">Ex. If they have $\frac{1}{12}$ of their pizza left, they must keep drawing until they select a $\frac{1}{12}$ piece, or a fraction that is smaller. Once a group member "eat" all of their pizza, they started the activity over.</p> 🖥️ After all groups are finished discuss what they have learned about "equivalent fractions." Encourage the students to look at their piece of paper that they wrote their equivalent fractions on. Allow some students to take turns writing some of their equivalent fractions on the board. <p style="margin-left: 40px;">$\frac{1}{3}=\frac{4}{12}$, $\frac{1}{4}=\frac{3}{12}$, $\frac{2}{3}=\frac{8}{12}$, $\frac{2}{6}=\frac{4}{12}$, and $\frac{1}{12}=\frac{1}{12}$</p> |
| <p>Materials:</p> | <ul style="list-style-type: none"> 🖥️ Orange (cut into 8 equal slices) 🖥️ 5 large poster board pizzas (one cut into 3rds, 4ths, 6ths, 8ths, and 12ths) 🖥️ Individual paper pizzas (sliced into 12ths) for each student 🖥️ Fraction Cards ($\frac{1}{4}$, $\frac{1}{3}$, $\frac{2}{3}$, $\frac{2}{6}$, $\frac{1}{12}$) for each group 🖥️ Pizza boxes for storing group's materials (Pizza Hut gave me 5 small pizza boxes) 🖥️ Finally, use the following Internet sites to reinforce this lesson on equivalent fractions. <p style="margin-left: 20px;">Fraction Frenzy http://www.learningplanet.com/sam/ff/index.asp Fraction Game Tool http://illuminations.nctm.org/tools/fraction/fraction.asp Fresh Baked Fractions http://www.funbrain.com/fract/index.html</p> |

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| | Soccer Shootout http://www.funbrain.com/fract/index.html |
| Assessment: |  I had the students draw a pictorial representation of each pair of equivalent fractions from the activity. |
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