

# Equivalent fractions with unlike denominators

[Science](#), [Mathematics](#)



In elementary math there are several concepts about fractions. One concept students in fourth grade will need to master is learning how to tell if fractions are equivalent with unlike denominators. There are a few prerequisite skills that are necessary in order for the students to understand this concept. The first thing students need to know is what fractions are. Fractions are a way of counting parts of a whole. Secondly, the students need to know how to identify parts of a fraction.

The top number in a fraction is the numerator. The numerator is the number of parts in a whole (Eather). The bottom number in a fraction is the denominator. The denominator is the number of parts the whole is divided into (Eather). Lastly, the student will need to have a basic knowledge of their multiplication and division facts. This will help the students in deciding whether or not the fraction is indeed equivalent or not.

The first step in teaching students about equivalent fractions is to have a whole class conversation using manipulatives or visual aides. I would start the lesson with an overhead projection or use of a mimeo board in order to show the students what equivalent fractions look like. I would start with two circles on the board, one divided into two pieces and one divided into four. You can show the students by coloring in one of the two pieces and two of the four pieces they are equivalent. Then write  $\frac{1}{2}$  and  $\frac{2}{4}$  side by side, in order to make  $\frac{2}{4}$  look like  $\frac{1}{2}$  you have to divide both sides by the same number. Both the numerator and the denominator in  $\frac{2}{4}$  are divisible by 2.

Divide both the top and the bottom by 2 and then  $\frac{2}{4}$  becomes  $\frac{1}{2}$ . Show the students again with a square. One divided into 4 sections and the other divided into 8 sections. The square with four sections color in one of the

<https://assignbuster.com/equivalent-fractions-with-unlike-denominators/>

blocks to represent 1 of the 4 or  $\frac{1}{4}$  of the square is shaded. Have the students then figure out how many sections of the 8 need to be shaded to mirror or be equivalent to  $\frac{1}{4}$ . The students should say 2. It would also be good to show the students a couple sets of fractions that aren't equivalent in order for them to understand what a non equivalent fraction looks like. This will help the students in future math problems by understanding what an equivalent and nonequivalent fraction looks like.

An activity to help students figure out if fractions are equivalent or not is to have the teacher give the student a page of fraction circles. The teacher will have the first circle filled in with one part shaded and three parts unshaded. The other circles can be divided into 8, 16, etc.. as long as they are different parts of a whole. The students need to figure out how many pieces it takes to make an equivalent fraction. Once they have shaded in the appropriate parts of a whole, they should have it checked by the teacher.

Once it has been checked by the teacher the students need to write out the fractions with the appropriate numbers in the appropriate places in order to see what the fraction looks like. The students should be able to figure out what the fraction needs to be divided by in order to get the original fraction of  $\frac{1}{4}$ . Students should start to see a pattern on how to come up with the equivalent fractions.

Once students have mastered finding an equivalent fractions by using manipulative or visual aids first, the the student needs to learn how to just do the pencil and paper figures. Equivalent fractions have a pattern based on the counting of multiples.  $\frac{1}{4}$ ,  $\frac{2}{8}$ ,  $\frac{3}{12}$ ,  $\frac{4}{16}$  are all equivalent fractions because you are multiplying the numerator and the denominator of  $\frac{1}{4}$  by 2, <https://assignbuster.com/equivalent-fractions-with-unlike-denominators/>

3, 4. So in order to find an equivalent fraction you need to multiply the numerator and denominator by the same number besides 0 or 1.

Show the students a couple examples, if i have  $\frac{3}{10}$  an equivalent fraction is  $\frac{6}{20}$ .. If we multiplied 3 by (what) to get 6, which is 2. We need to also multiply 10 by 2 to get 20. You can double check yourself by dividing  $\frac{6}{20}$  by two to get  $\frac{3}{10}$ . Another way to double check your work is by cross multiplying. If we multiply the numerator of the first problem (3) by the denominator of the second problem (20) and the denominator of the first problem (10) by the numerator of the second problem (6), they should equal the same. 3 times 20 is 60 and 10 times 6 is 60, so we have found equivalent fractions. You could also show the students a way of proving that two fractions aren't equivalent. If you were to take  $\frac{3}{4}$  and  $\frac{2}{12}$ .. are these equivalent fractions? If we cross multiply 3 times 12 and 4 times 2, do we get the same answer? 3 times 12 is 36 and four times two is 8, these fractions are not equivalent.