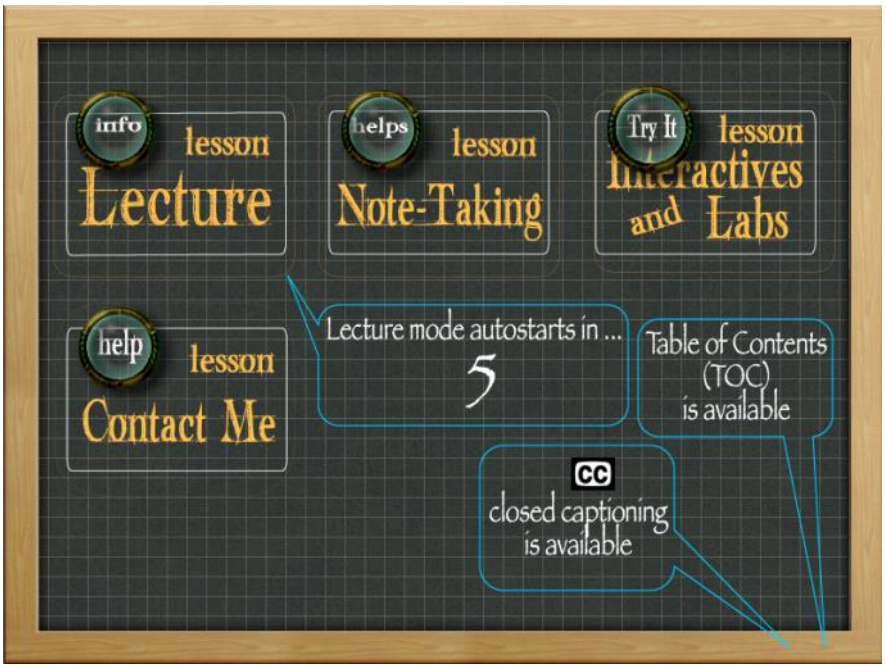
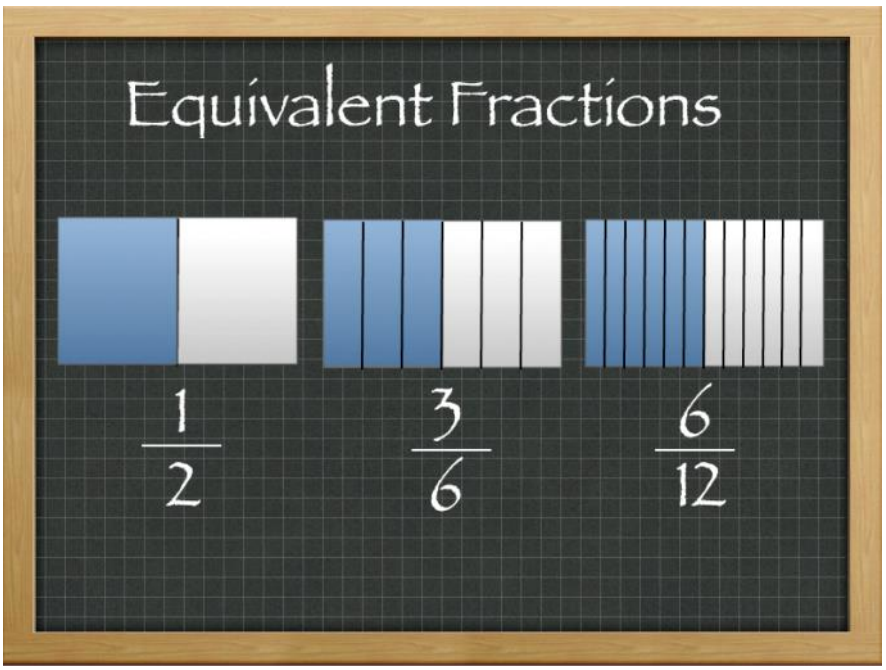
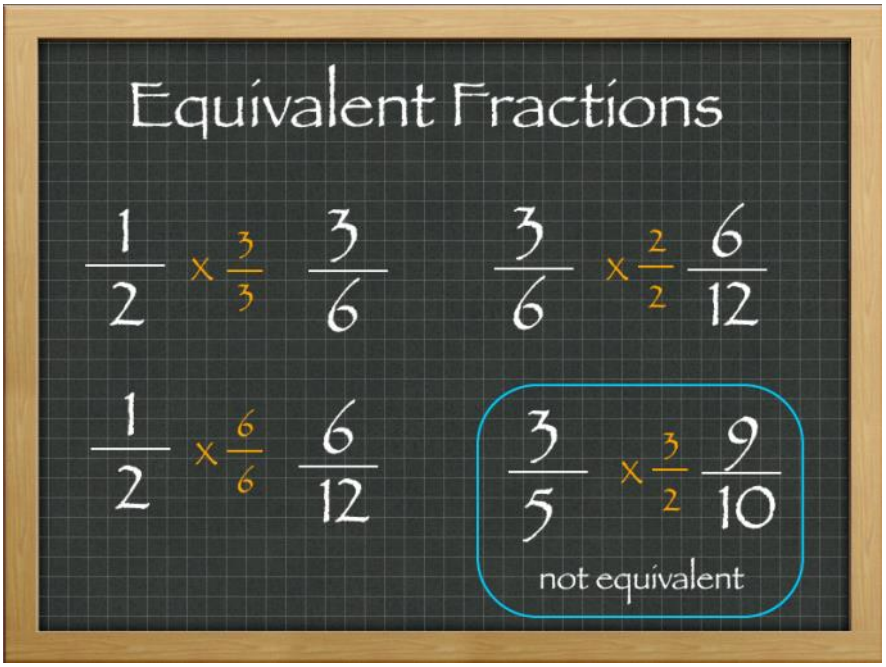
Equivalent Fractions

Thursday, March 01, 2012
8:59 AM

Slide	Notes
	
	Notice how the image of 1/2, 3/6, and 6/12 all have the same amount of the rectangle shaded. They are all equivalent to one another. The only difference is that the denominators and numerators are scaled up or down compared to each other.

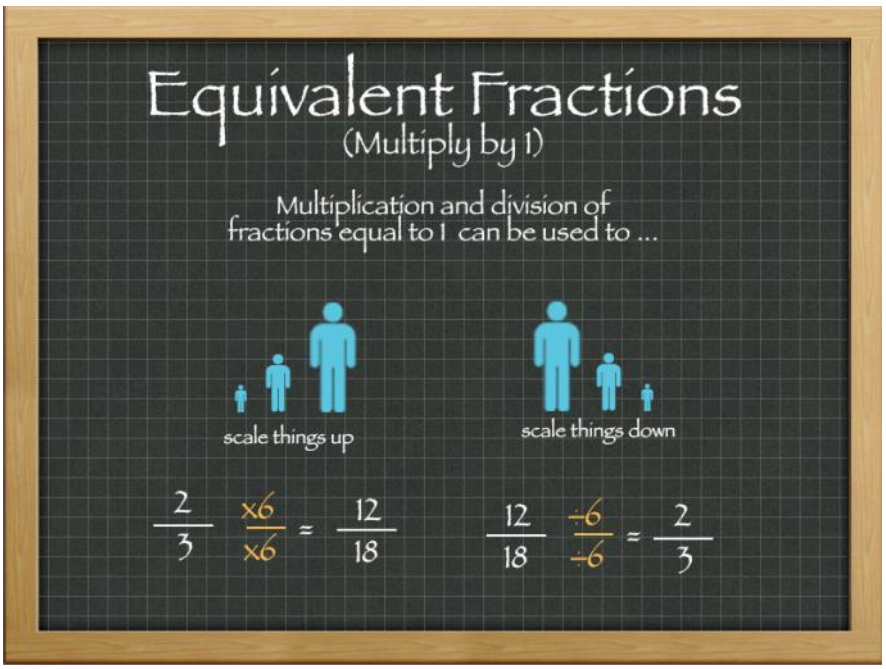


A great test to see if two fractions are equivalent to one another is to see is the same number is used to multiply to or divide from the numerator and denominator.

Here, you can see that we multiply the 1 by 3 and get the 3 and then we can also multiply the 2 times 3 and get 6. These two fractions are equivalent because they are multiplied by the same number.

Here is an example that is not a pair of equivalent fractions. The numerator needs to be multiplied by 3 to get the 9 while the denominator needs to be multiplied by a 2. The numbers that are being used to multiply are not the same. They are not equivalent.

When the same number is on the top as is on the bottom, it is equal to 1. To get an equivalent fraction you are scaling up or down by a fraction equivalent to 1.

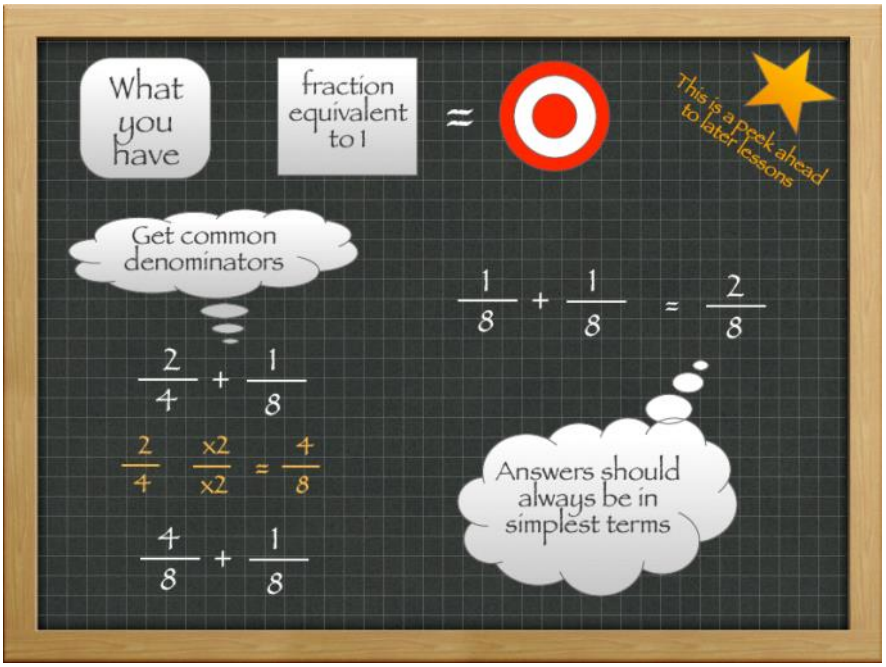


Equivalent fractions let us scale a fraction up or down.

When we scale up, we multiply.

When we scale down we divide.

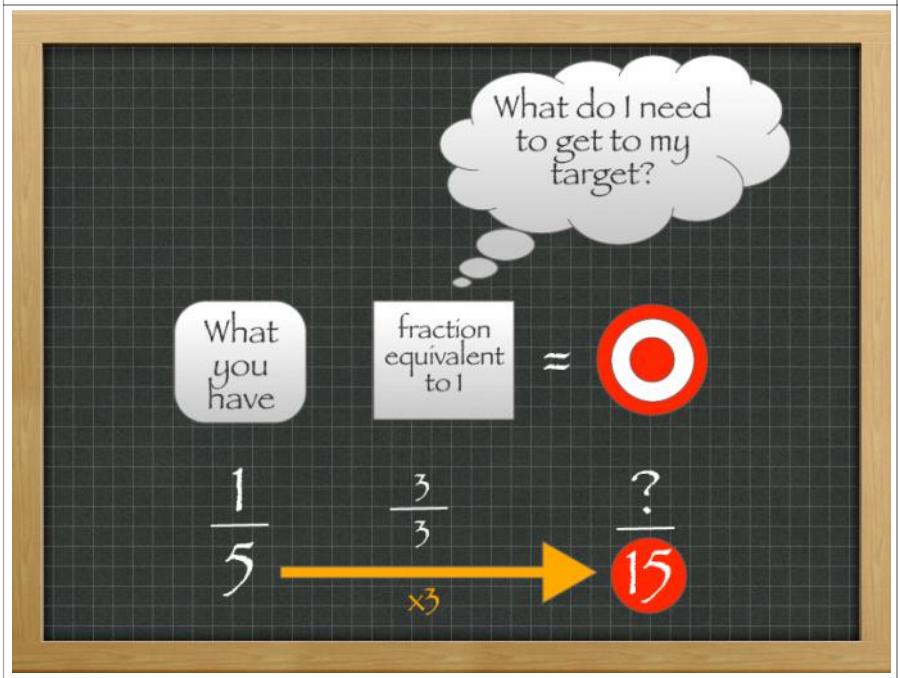
Why?



Here are some of the times you will find that you need to scale a fraction up or down.

When you add or subtract fractions you have to have the same denominator. If you can scale one or both so that the denominators can match, then you can complete the addition or subtraction.

Another use for scaling is that answers should always be in simplest form. The answer of 2/8 isn't in simplest form because 2 will go in to both the numerator and the denominator. I will need to divide by the largest number that will go in to both the numerator and the denominator to scale it down so that there isn't a number that goes in to both other than just a 1.



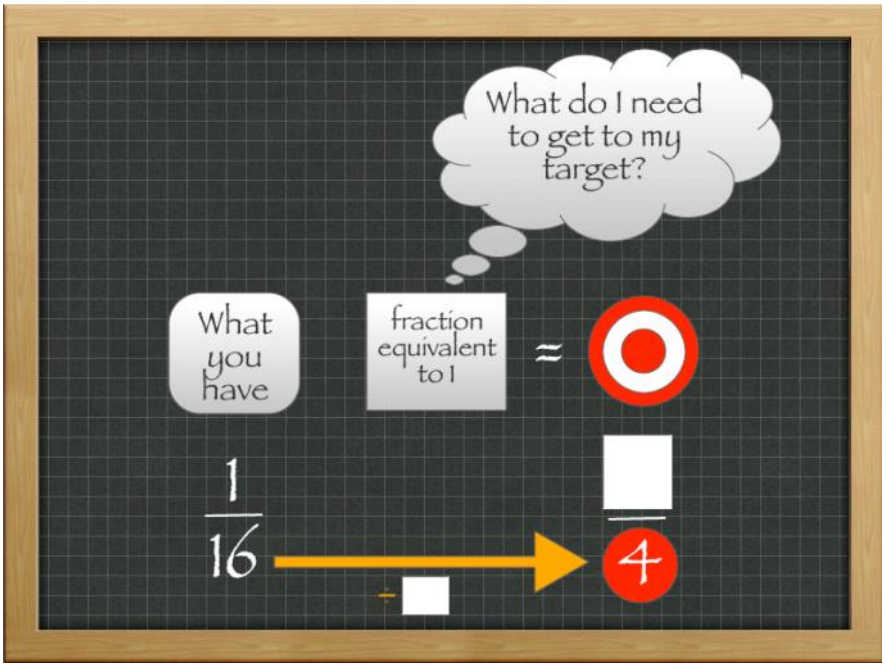
Example

I have 1/5. I need a fraction that has 15 in the denominator.

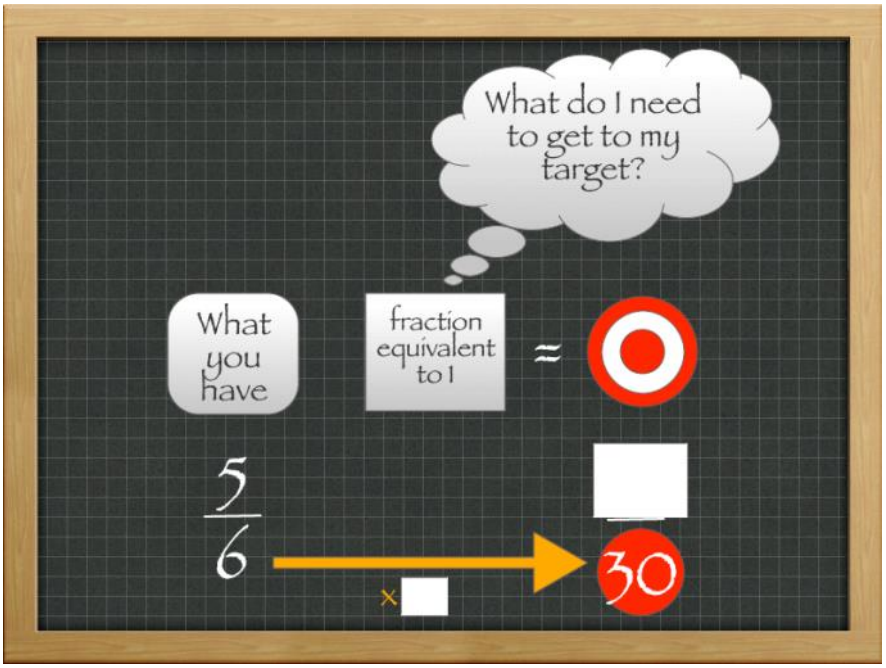
I compare the denominator that I have, 5, with what I need, 15, and I see I need to multiply by 3.

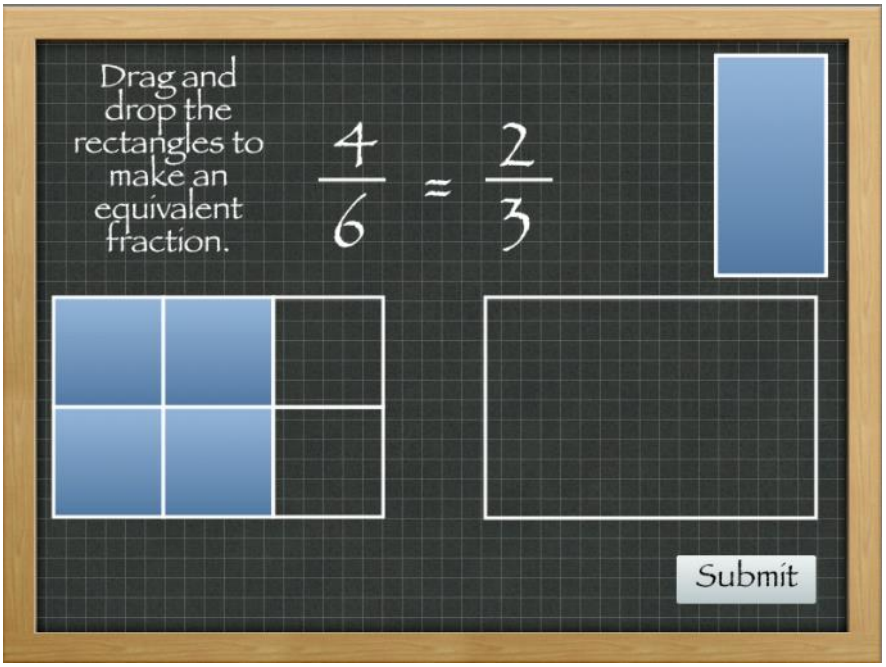
I will multiply the fraction by 3/3 to scale it up to 3/15.

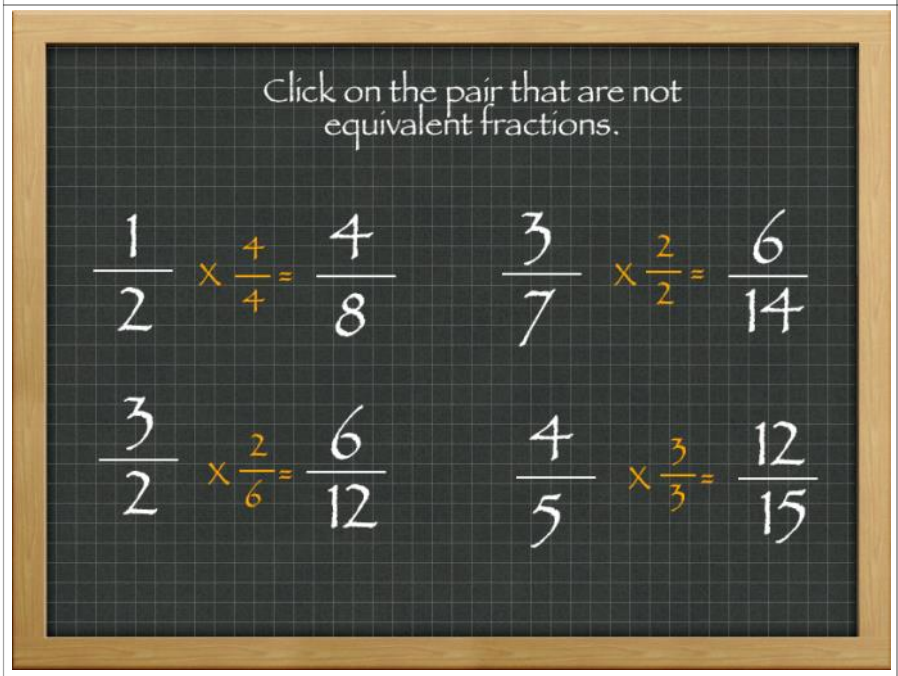
Try It


What do I need to get to my target?
What you have
fraction equivalent to 1
≈
1/16
÷
4

Try It


What do I need to get to my target?
What you have
fraction equivalent to 1
≈
5/6
×
30


Drag and drop the rectangles to make an equivalent fraction.
4/6 = 2/3
Submit


Click on the pair that are not equivalent fractions.
1/2 x 4/4 = 4/8
3/7 x 2/2 = 6/14
3/2 x 2/6 = 6/12
4/5 x 3/3 = 12/15

Congratulations!
You have completed this topic
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lesson
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