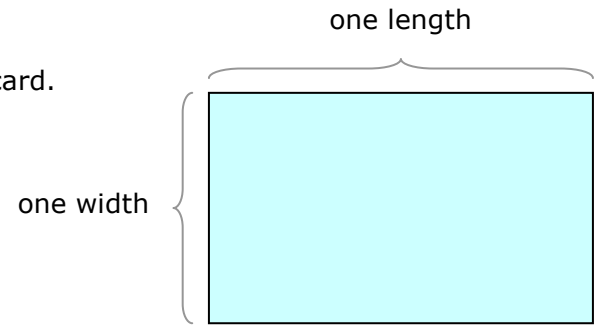
Index Card Fractions

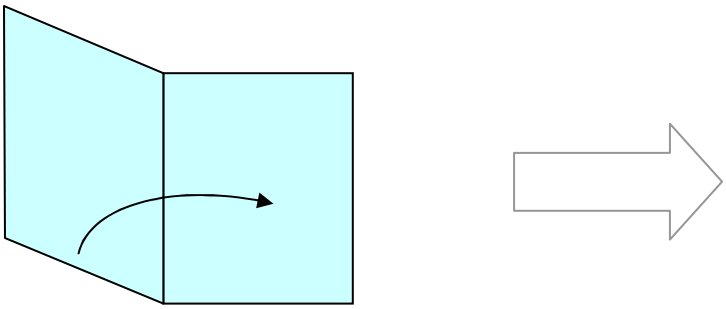
Think of the index card as one whole—one whole index card.

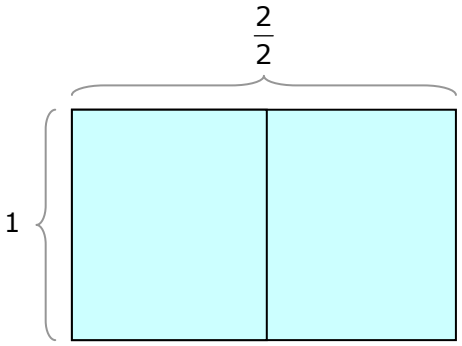
Think of its dimensions as
one whole length x one whole width

So you've got a *1 x 1* array

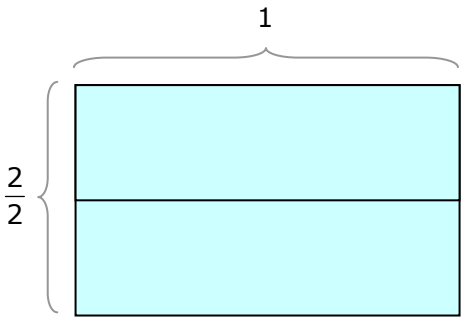


Halves
Fold one short edge over to the other short edge,

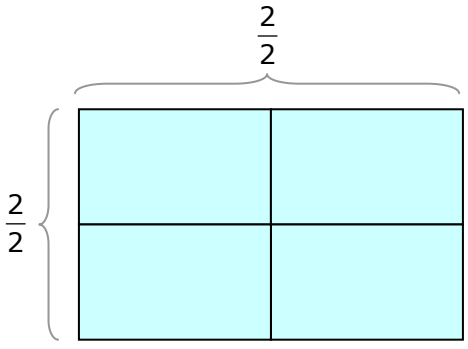


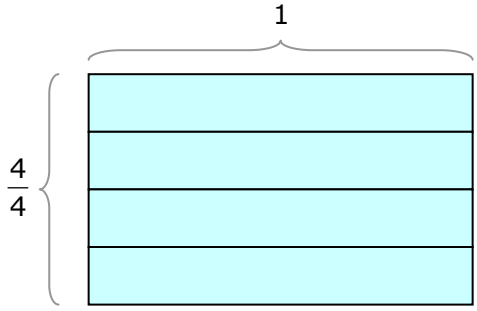


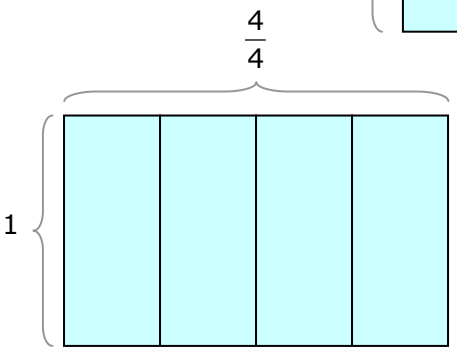
Or fold the long edge up onto the other long edge



Fourths
You can get fourths by folding in half and then folding in half again.
If you fold in opposite directions, you'll get something like the card to the right. If you fold in half twice the same way, you'll get something like these two, below:

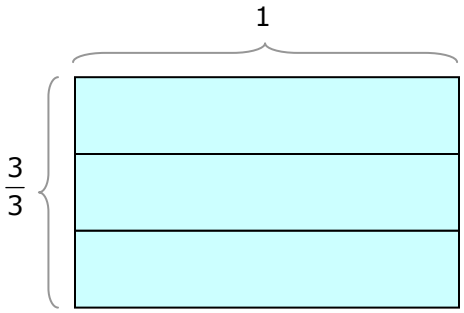






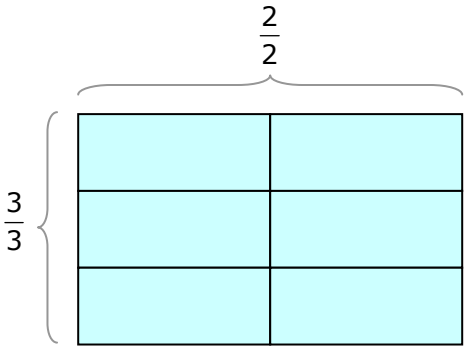
revised 4/17/2008

Thirds
Just mark off the inches on the 3” sides and connect them.

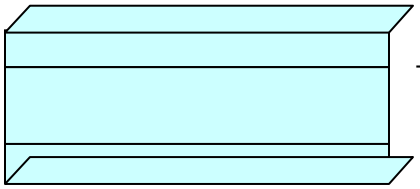


The 5” side won’t be easy to do
—unless you have a ruler with divisions in thirds.

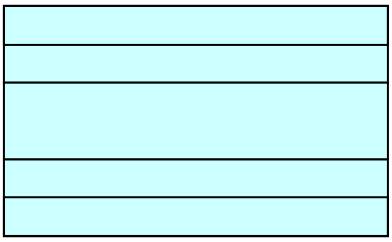
Sixths
You can fold the thirds card in half lengthwise.



Or you can fold each third in half—fold the bottom edge up to the mark above it and the top edge down to the mark below it, like this:

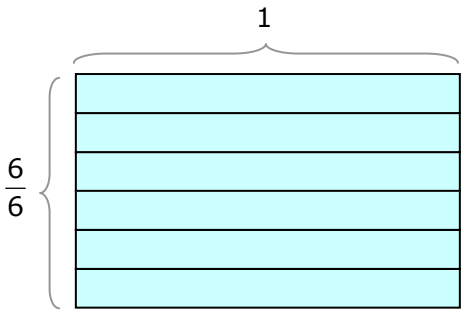


Then the crease marks will look like this:

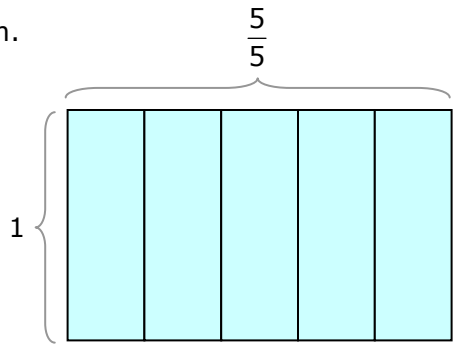


Fold the bottom edge up to the top edge
—or the top edge down to the bottom edge.

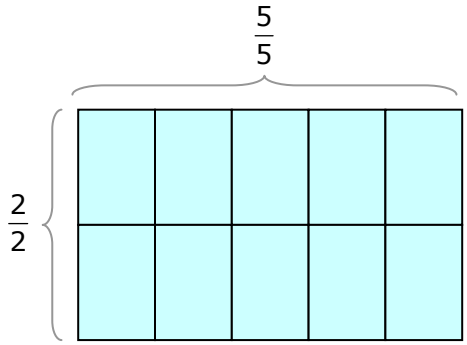
This will put a crease right in the middle:



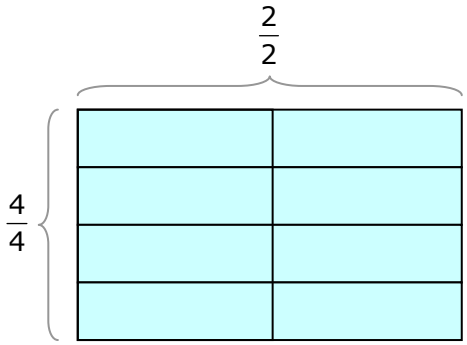
Fifths
Just mark off the inches on the 5” sides and connect them.

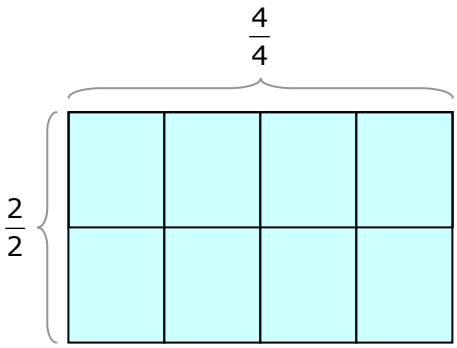


Tenths
Just divide the short side in half by folding up from the bottom.
Now you have a $\frac{5}{5}$ x $\frac{2}{2}$ array, which totals $\frac{10}{10}$

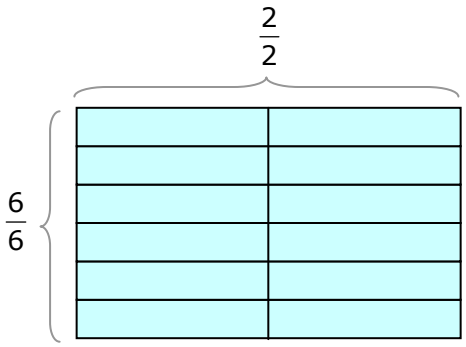


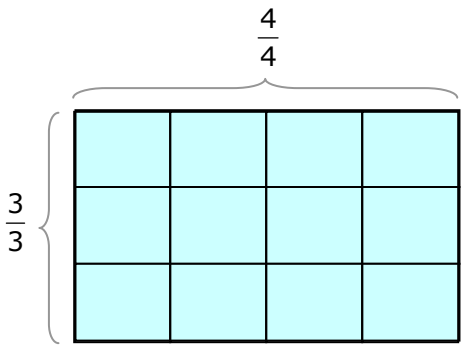
Eighths
Just fold a fourths card in half.





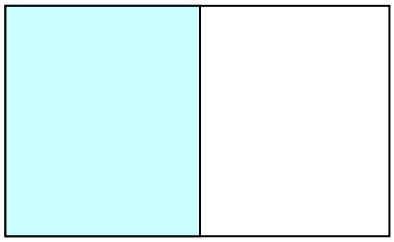
Twelfths
Fold a sixths card in half or fold a thirds card in fourths:

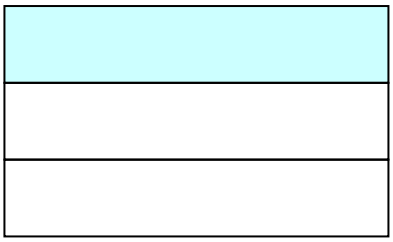




Let's use the index cards to demonstrate some calculations.

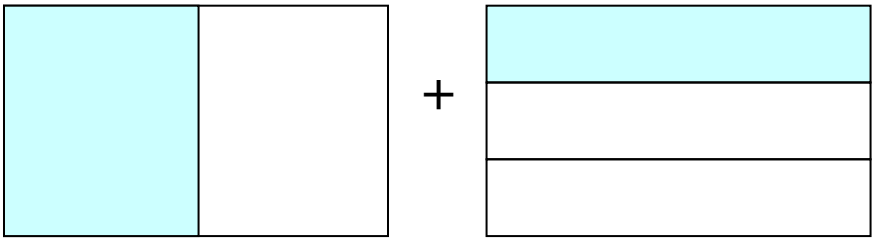
We could add $\frac{1}{2}$ and $\frac{1}{3}$

$\frac{1}{2}$ will look like  or 

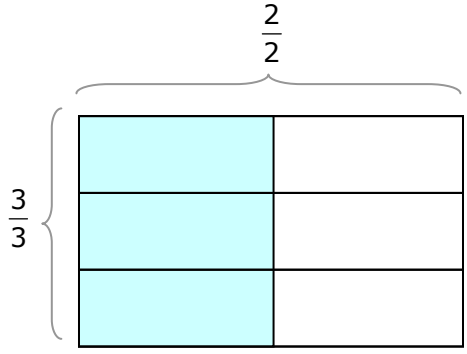
and $\frac{1}{3}$ will look like 

We don't have any good way of dividing the 5" length into thirds, so we won't include that option.

Let's take the first option first

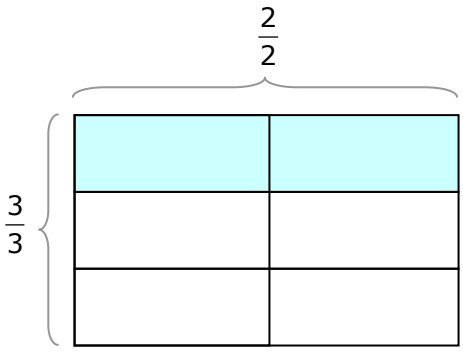


The way they are right now, they're just a collection of separate things: we can't really combine those into a single quantity UNLESS or UNTIL we can see them both as **multiples of the same unit (or denomination)**. We can do that:

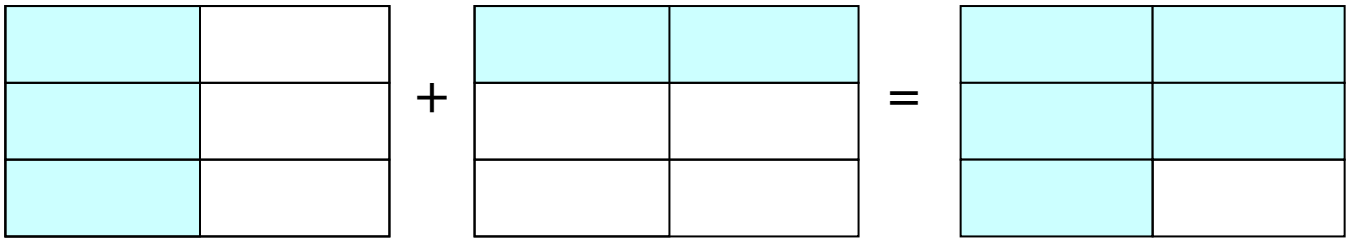


We can divide the short side of the halves card into thirds

and we can the long side of the thirds card into halves

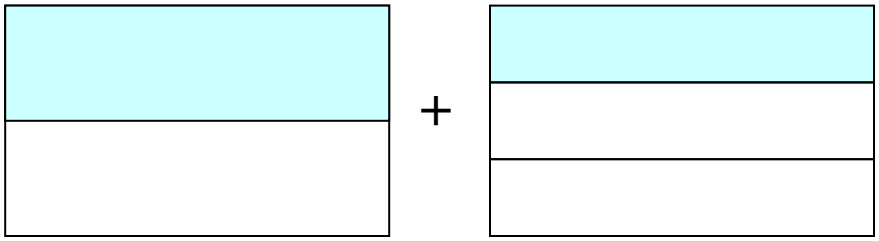


Now that we see the $\frac{1}{2}$ and the $\frac{1}{3}$ as multiples of the same thing $\left(\frac{1}{6}\right)$, we can do the addition and get $\frac{5}{6}$



$$\frac{1}{2} + \frac{1}{3} = \frac{3}{6} + \frac{2}{6} = \frac{5}{6}$$

Let's take a look at add $\frac{1}{2} + \frac{1}{3}$ pictured like this:



We have the same difficulty as before: the way the $\frac{1}{2}$ and the $\frac{1}{3}$ are right now,

when we put them together, all we have is a collection of separate things. We can't combine them into a single quantity UNLESS or UNTIL we see them both as **multiples of the same unit (or denomination).**

We can do that by dividing the short side of each card into sixths.
As soon as we do that, the answer is clear:

$$\frac{3}{6} + \frac{2}{6} = \frac{5}{6}$$

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