

WEEK ONE - Activity Three - Fraction Strips

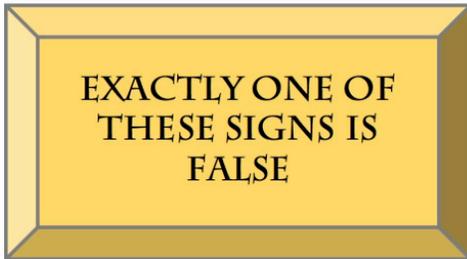
1. WARM UP

Put this puzzle up as students come in. Have them record their answers, and discuss.

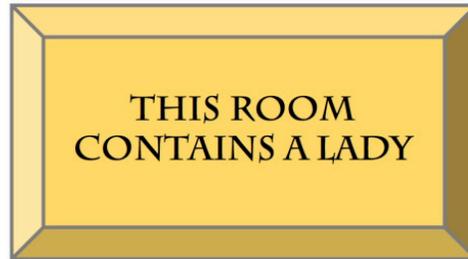
Rule: There is one lady and one tiger.
The signs can both be True, both False,
or one of each. Where is the lady?

Door One	Door Two
T	?
F	?

Sign on Door ONE



Sign on Door TWO



Solving it...

If the first sign is true, then sign 2 is false. (why?)

If the first sign is false, then they are both false. (why?)

Therefore, in both cases, sign 2 is false, so the lady is in Room 1.

2. FRACTION STRIP ACTIVITY

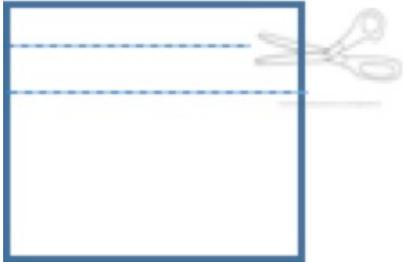
We start fractions early in the year in order to stretch this important unit out over three or four months. We will do other units during those months (patterns, order of operations, multiplication), and this VISUAL introduction to fractions will run "in the background". It will appear in warm ups, word problems and homework, while we cover those other units.

We keep the introduction to fractions as *visual* as possible during these months. This benefits students who struggle with the memorization of algorithms. These are students who can access mathematics perfectly well *if given time*, and if given a *visual approach*.

The visual approach to fractions even benefits those 'fast' students who would otherwise memorize the fraction algorithm quickly. They develop a more conceptual understanding of fractions that benefits them in word problems and later in algebra.

FOLDING FRACTION STRIPS

Using construction paper and a paper cutter (or scissors), cut strips of paper that are about 1" wide.



Cut about 12 for each student.

Pass out 12 per student.

Put the following instructions on the board:

Fold the following fraction strips:

$$\frac{1}{4}$$

$$\frac{3}{4}$$

$$\frac{1}{3}$$

$$\frac{2}{3}$$

$$\frac{1}{2}$$

$$\frac{1}{6}$$

$$\frac{5}{6}$$

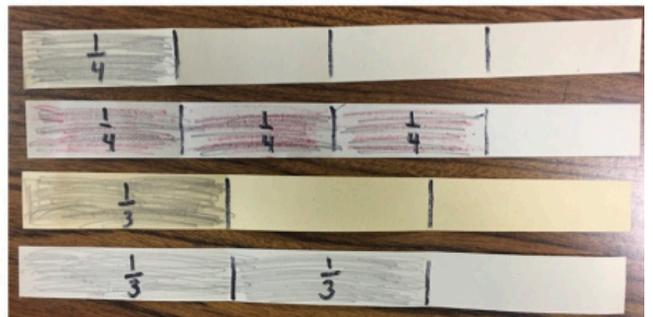
$$\frac{1}{12}$$

$$\frac{3}{12}$$

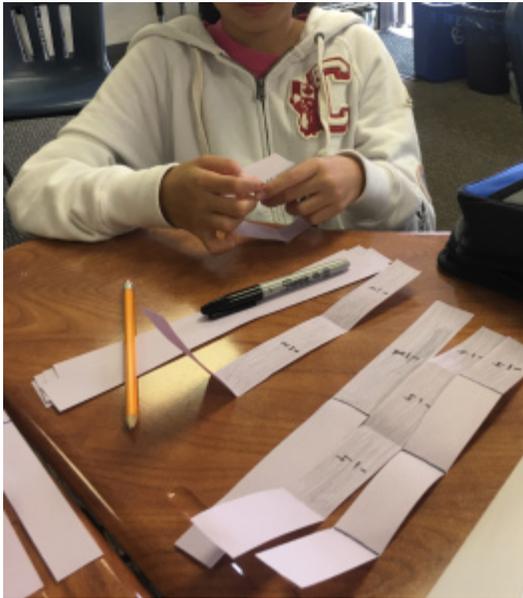
$$\frac{4}{12}$$

$$\frac{5}{12}$$

$$\frac{7}{12}$$



Here are photos of the work in progress. The THIRDS are especially hard to fold.



Listen to the students share insights. Circulate and ask for insights. "After you fold 3rds once, you can fold another one into 3rds, and then fold it in half to get 6ths."

Ask "I wonder how we'll get 12ths, then?...". Act thoughtful and then leave. Trust students to experiment and find out that 6ths folded in half will give them 12ths. Have some extra strips, though, just in case!

Have something for students to work on if they finish. The amount of time this activity takes varies *greatly*. Maybe some more Lady/Tiger puzzles? Or other puzzles you think they might like.

Students put their strips in an envelope with their name when done.