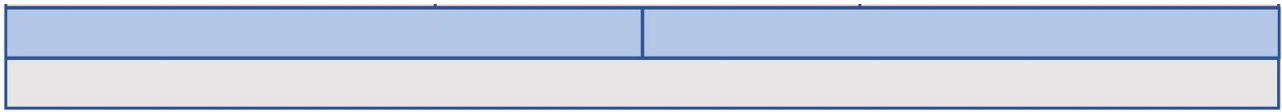


FRACTION WALL 30-MINUTE GLOBAL MATHS LESSON

Build a Fraction Wall



This wall is 1 unit wide. It shows one unit and two halves. Label the blocks 1 and $\frac{1}{2}$.

Cut out the strips from page 2.

Build a wall that has smaller and smaller blocks in each layer as it is built up.

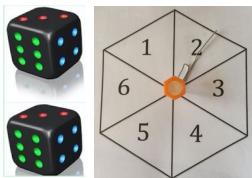
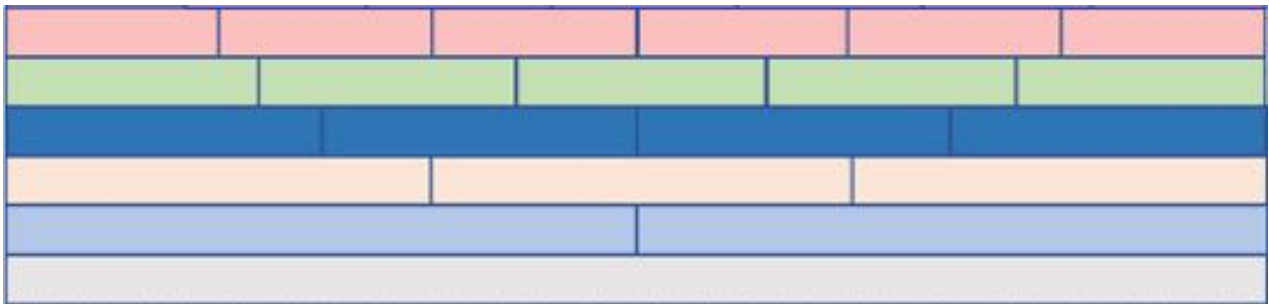
Label the blocks 1, $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{1}{6}$, $\frac{1}{7}$, $\frac{1}{8}$, $\frac{1}{9}$, $\frac{1}{10}$, $\frac{1}{11}$ and $\frac{1}{12}$.

Explain how the wall shows that one half, two quarters and three sixths are equivalent fractions

$$\frac{1}{2} = \frac{2}{4} = \frac{3}{6}$$

Explain how the wall shows that three quarters is greater than two thirds $\frac{3}{4} > \frac{2}{3}$.

Play the Fraction Wall Double Six Game



To play this starter game you need 2 dice, or a 1 – 6 spinner, and this fraction wall showing fractions 1, $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$ and $\frac{1}{6}$.

Play with 2 players or 2 teams. If you are a small group of 7 or fewer people, then everyone can play individually and, in turn, throw the dice for themselves. Players throw 2 dice or use a spinner, make a fraction with the numbers on the

dice putting the smaller number on top. For example, a 2 and a 3 make $\frac{2}{3}$.

Use the Fraction Wall to compare the fractions.

The largest fraction wins the round and scores a point. More than one player scores a point in the same round if they all get the largest fraction.

Variations of the Fraction Wall Game

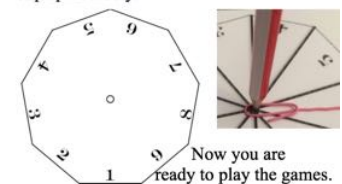
If time, play with walls of different heights that include smaller fractions. You will need to make spinners that show the digits needed for your game. The instructions show how to make your own spinner with digits 1 to 9 for the Fraction Wall Game on a wall built up to the layer of ninths on top.

MAKE YOUR SPINNER

You will need a paper clip opened out as shown. Cut out the spinner. Mark sectors.



Hold the paper clip down at the centre of the spinner using a pencil so that the paper clip spins freely.



Now you are ready to play the games.

For secondary school students

Write down all the fractions you that you see from the wall are

equivalent to (a) three quarters $\frac{3}{4}$ (b) five sixths $\frac{5}{6}$

(c) seven twelfths $\frac{7}{12}$ (d) six twenty-fourths $\frac{6}{24}$

Explain the rules for checking whether two fractions are equivalent.

The Algebraic Fraction Wall

Put $x = 1$. What do you notice? What values do the fractions take for other values of x ?

$\frac{2}{7x+5}$						LEVEL 6
$\frac{3}{8x+7}$						LEVEL 5
$\frac{2}{5x+3}$						LEVEL 4
$\frac{1}{x+2}$						LEVEL 3
$\frac{2}{3x+1}$						LEVEL 2
			$\frac{1}{x}$			LEVEL 1

The rules for the **Algebraic Fraction Wall Game** are similar. Each player throws 2 dice or spins a 1 to 6 spinner twice. The value of x is given by one die or the first spin. The level is given by the other die or the second spin. For example, if Player A throws a 5 followed by 2 ($x = 5$ and LEVEL 2) and Player B throws 4 followed by 5 ($x = 4$ and LEVEL 5) then Player A

has the larger fraction and wins that round because $\frac{2}{16} = \frac{1}{8} > \frac{3}{39} = \frac{1}{13}$.

HELP

You could print the strips, cut them out, build the wall and stick the strips onto a backing sheet, or into your notebook. Alternatively make your own wall on a larger scale from scrap cardboard or paper.

You could use a second set of separate strips so that you can match and compare the lengths of the parts of the strips (the fractions).



If you have cubes available (for example Multilink or Centicube) you can make your own fraction wall with the cubes or use Lego.

NEXT

How many red bits (twelfths) are equivalent to one blue bit (one half)?

How many red bits (twelfths) are equivalent to two cream bits (two thirds)?

Use the fraction wall to find how many units and twelfths give the answer to $\frac{1}{2} + \frac{2}{3} + \frac{5}{12}$

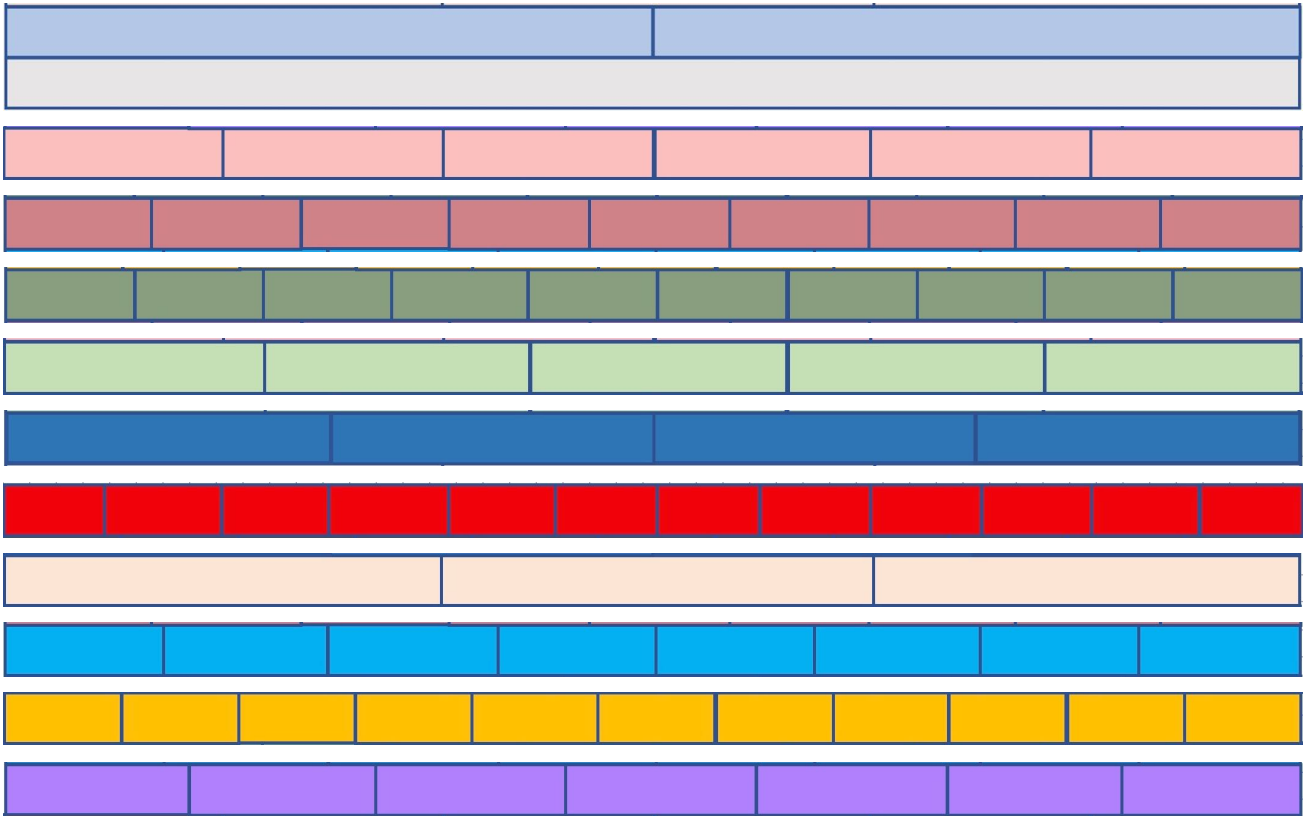
Make up some questions of your own using the fraction wall. Give answers to your questions.

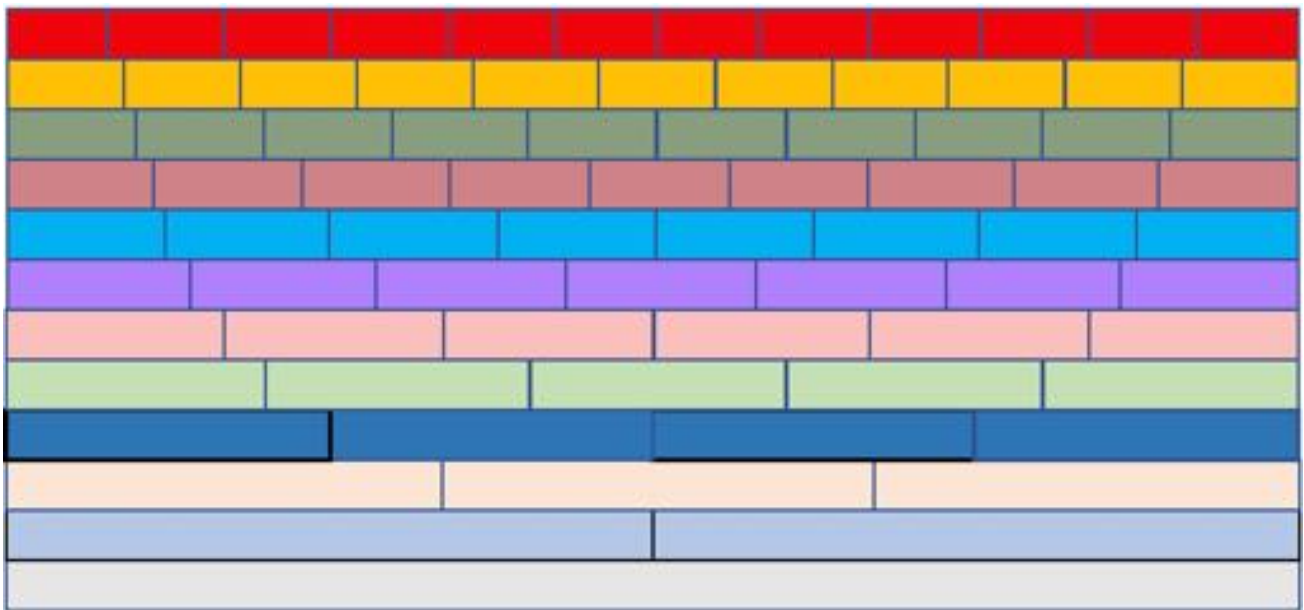
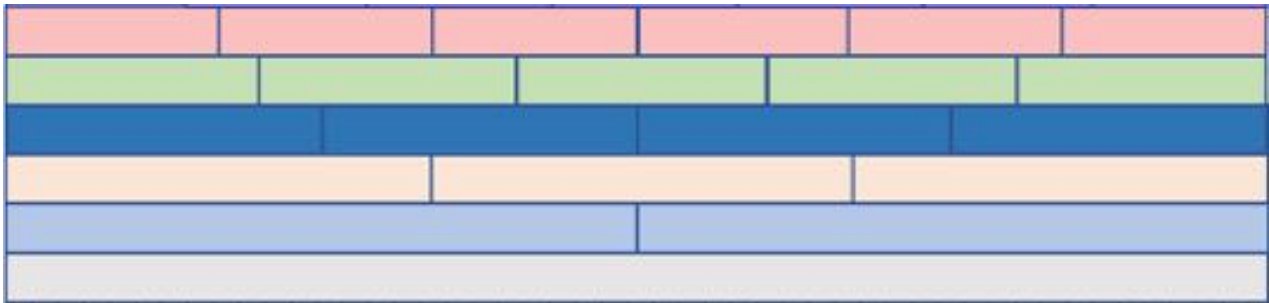
Compare fractions and say which is bigger and which is smaller.

Build a Fraction Wall

Cut out the strips. Rearrange the order of the strips to build a wall with smaller and smaller blocks in each layer as it is built up.

Label the blocks $1, \frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{1}{5}, \frac{1}{6}, \frac{1}{7}, \frac{1}{8}, \frac{1}{9}, \frac{1}{10}, \frac{1}{11}$ and $\frac{1}{12}$.





The Algebraic Fraction Wall

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$\frac{2}{7x+5}$						LEVEL 6
$\frac{3}{8x+7}$						LEVEL 5
$\frac{2}{5x+3}$						LEVEL 4
$\frac{1}{x+2}$						LEVEL 3
$\frac{2}{3x+1}$						LEVEL 2
			$\frac{1}{x}$			LEVEL 1