

Meaning of Fractions

A. Meaning of fractions

1. Part of a whole – illustrate with set pictures (see pictures in our textbook)
2. Number – position on number-line
3. Division – $\frac{3}{4}$ can mean 3 divided by 4

B. Equivalent fractions – there are many ways to express the same number

$$\frac{a}{b} \cdot \frac{n}{n} = \frac{a \cdot n}{b \cdot n}$$

C. Order of fractions

1. Illustrate on a number line or with fraction strips (see pictures in our textbook.) Also look at a "coolmath" website, for elementary and middle school students, that teaches how to compare the size of fractions:

<http://www.coolmath.com/fractions/fractions-08-which-fraction-is-greater-01.html>

2. Rewrite fractions with a common denominator and compare numerators
3. Cross multiply

$$\frac{a}{b} < \frac{c}{d} \text{ if and only if } a \cdot d < b \cdot c$$

4. Convert each fraction to a decimal and compare

D. Find a fraction between two other fractions

1. Rewrite with a large enough common denominator to find a fraction between the original two fractions

2. $\frac{a}{b} < \frac{a+c}{b+d} < \frac{c}{d}$

3. Convert each fraction to a decimal to find another between the original two fractions