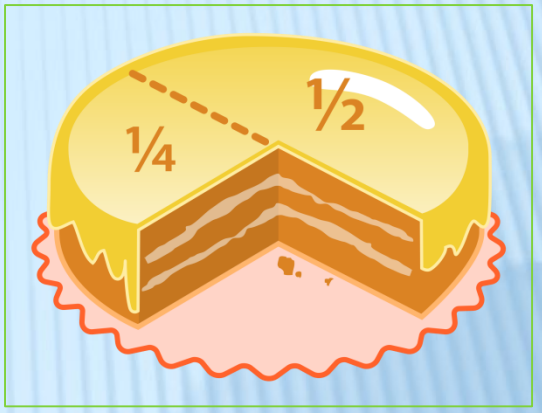

OPERATIONS WITH FRACTIONS

Matemáticas Almudena

www.matematicasalmudena.com

Almudena Casares Fernández

REDUCING FRACTIONS TO COMMON DENOMINATOR

$$\frac{2}{5} \text{ and } \frac{3}{4}$$

1st) Find the Lowest Common Multiple (L.C.M.) of their denominators.

LCM =20

2nd) This is the common denominator.

Common denominator =20

3rd) Find out their numerators using the property of equivalent fractions.

$$\frac{2}{5} = \frac{\square}{20}$$

$$\frac{3}{4} = \frac{\square}{20}$$

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ORDERING FRACTIONS

With same denominator

The largest fraction is the one which has the largest numerator.

$$\frac{2}{5} < \frac{3}{5}$$

With different denominators

Change them to equivalent fractions with the same denominator. Then, compare the numerators.

$$\left.\begin{array}{l} \frac{1}{3} = \frac{5}{15} \\ \frac{2}{5} = \frac{6}{15} \end{array}\right\} \Rightarrow \frac{1}{3} < \frac{2}{5}$$

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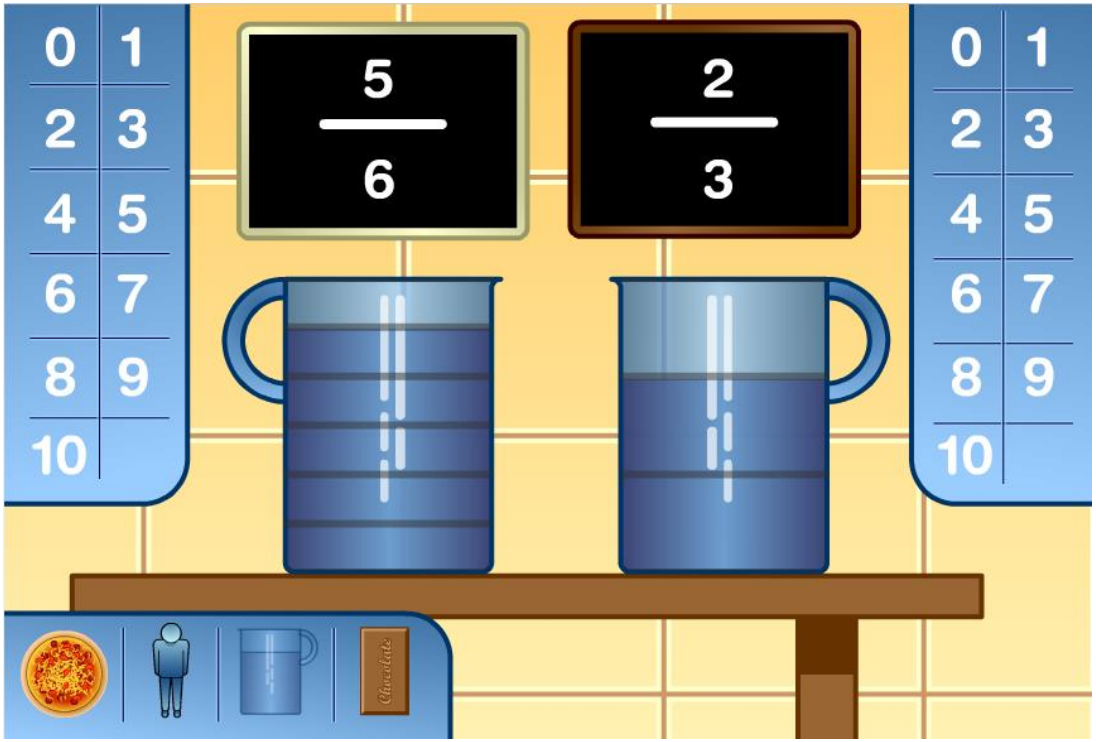
ORDERING FRACTIONS

- http://www.bbc.co.uk/skillswise/game/ma17frac-game-simplifying-fractions



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ORDERING FRACTIONS

⊙ PLAY AND LEARN

- http://www.bbc.co.uk/skillswise/game/ma17frac-game-dolphin-racing-fractions

OPERATIONS: ADDITION AND SUBTRACTION

With same denominator

If their denominators are the same, then add or subtract only the numerators and keep the denominator.

$$\frac{3}{4}+\frac{7}{4}=\frac{10}{4}$$

With different denominators

If their denominators are different, find equivalent fractions that have the same denominator.

$$\frac{3}{4}+\frac{7}{10}=\frac{15}{20}+\frac{14}{20}=\frac{29}{20}$$

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OPERATIONS: MULTIPLICATION

To multiply two fractions, multiply the numerators together and multiply the denominators.

$$\frac{a}{b}\cdot\frac{c}{d}=\frac{a\cdot c}{b\cdot d}$$

$$\frac{2}{5}\cdot\frac{3}{4}=\frac{2\cdot 3}{5\cdot 4}=\frac{6}{20}$$

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OPERATIONS: MULTIPLICATION

A **power** is the abbreviation for writing a multiplication with equal factors.

$$\left(\frac{a}{b}\right)^n = \frac{a}{b}\cdot\frac{a}{b}\overset{\text{(n times)}}{\cdots}\frac{a}{b} = \frac{a^n}{b^n}$$

$$\left(\frac{2}{5}\right)^3 = \frac{2}{5}\cdot\frac{2}{5}\cdot\frac{2}{5} = \frac{2^3}{5^3} = \frac{8}{125}$$

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OPERATIONS: DIVISION

- The inverse fraction of another is a fraction that when we multiply them, the result is the unit. When we invert a fraction, the number we obtain is called its reciprocal or inverse.

$$\text{The reciprocal of } \frac{4}{5} \text{ is } \frac{5}{4}$$

- To divide fractions, multiply the first fractions by the inverse of the second.

$$\frac{a}{b} : \frac{c}{d} = \frac{a}{b} \cdot \frac{d}{c} = \frac{a \cdot d}{b \cdot c}$$

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OPERATIONS

⊙ PLAY AND LEARN

- http://www.math-play.com/Fractions-Jeopardy/fractions-jeopardy.html