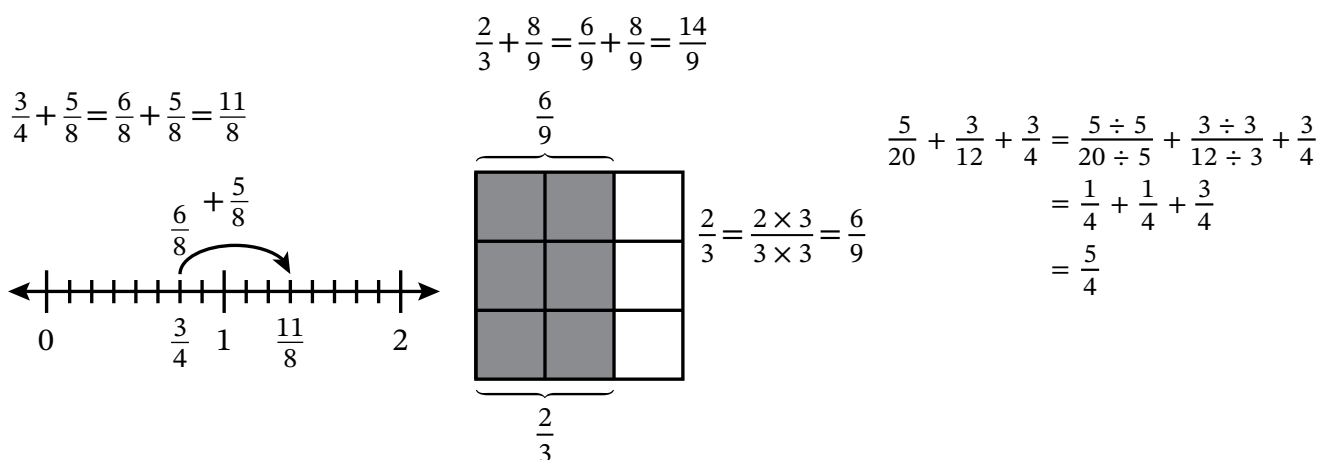# FAMILY MATH

Addition and Subtraction of Fractions by Making Like Units

Dear Family,

In grade 4, your student learned to add and subtract fractions with the same units, or same denominators. Now, they extend their understanding to add and subtract fractions with different units, or different denominators such as thirds and fourths. They use models and equations to find a common unit before adding or subtracting. Your student is encouraged to think about equivalent ways to show their answer, such as $\frac{9}{6}$ or $\frac{3}{2}$ or $1\frac{1}{2}$, but they are not expected to provide the answer in a specific way.

$$\frac{2}{3}+\frac{8}{9}=\frac{6}{9}+\frac{8}{9}=\frac{14}{9}$$

$$\frac{3}{4}+\frac{5}{8}=\frac{6}{8}+\frac{5}{8}=\frac{11}{8}$$

$$\frac{5}{20}+\frac{3}{12}+\frac{3}{4}=\frac{5\div5}{20\div5}+\frac{3\div3}{12\div3}+\frac{3}{4}$$
$$=\frac{1}{4}+\frac{1}{4}+\frac{3}{4}$$
$$=\frac{5}{4}$$

$$\frac{2}{3}=\frac{2\times3}{3\times3}=\frac{6}{9}$$

Number lines help students represent the sum or difference.

Area models help students find a common unit before adding or subtracting.

Using multiplication or division helps students to rename units before adding or subtracting.

At-Home Activities

Measuring Cup Fractions

Provide your student with a set of measuring cups. Ask questions to help them practice finding a common unit before adding and subtracting fractions. The measuring cups can be used for reference. Your student can also practice measuring with materials, such as flour, dry rice, sugar, or water.

- "How many cups of flour would we have in a bowl if we put in $\frac{1}{2}$ cup of flour and then put in $\frac{1}{3}$ cup of flour?" $\left(\frac{5}{6} \text{ cups of flour}\right)$

- "Suppose I put $\frac{3}{4}$ cups of water into a bowl and then realized that it is $\frac{1}{3}$ cup too much. How much would be left after I remove the $\frac{1}{3}$ cup of water?" $\left(\frac{5}{12} \text{ cups of water}\right)$

Fraction Time

Amounts of time can be expressed as fractions of an hour (10 minutes is $\frac{1}{6}$ of an hour, 15 minutes is $\frac{1}{4}$ of an hour, 20 minutes is $\frac{1}{3}$ of an hour, and 30 minutes is $\frac{1}{2}$ of an hour). Use fractions of an hour to help your student think about making like units when adding and subtracting fractions.

- If your student takes $\frac{1}{4}$ of an hour (15 minutes) to take a shower and $\frac{1}{6}$ of an hour (10 minutes) to get dressed, ask them to tell you the total amount of time they spend on the activities as a fraction of an hour. $\frac{1}{4} + \frac{1}{6} = \frac{5}{12}$, so they spend $\frac{5}{12}$ of an hour, or 25 minutes, showering and getting dressed.