A Union of Professionals
Common Core
State Standards

Dear Parents and Caregivers,

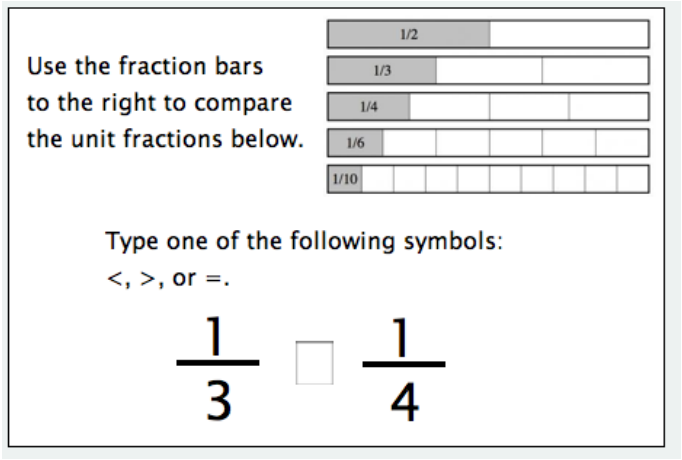
As we continue to update you on math expectations of the Common Core State Standards, this letter addresses the important, and for many children, difficult topic of fractions. In third grade, children will begin to learn about **equivalent fractions.** This standard is a major expectation.

3.NF.3 Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.

It includes:

- Knowing that two fractions are equal if they are the same size or can be placed at the same point on a number line;
- Children can name simple equivalent fractions and explain why they are equal with the help of objects or drawings;
- Knowing that whole numbers can be expressed as fractions. For example, $3 = \frac{3}{1}$ and $\frac{6}{6} = 1$.
- Being able to explain why, when fractions have the same denominator, one fraction is greater or less than the other, and why, when two fractions have the same numerator, one is greater or less than the other.
- Understand that such comparisons are valid only when the fractions refer to the same whole.

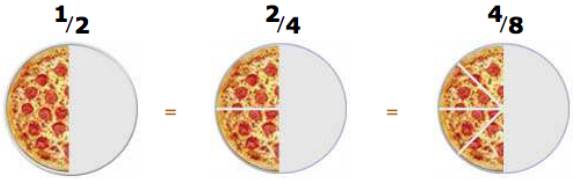
Your child is being asked to compare fractions using visual fraction models and number lines. When comparing fractions, it is important to know that they are comparing different parts from the same-sized wholes. For example, if I am comparing $\frac{1}{2}$ to$\frac{1}{3}$, I need to make sure that I am referring to the same-sized wholes. Then, I need to know the size of the parts as well. I can reason that $\frac{1}{2}$ is greater than $\frac{1}{3}$ because half of one whole is greater in size than $\frac{1}{3}$ of the same whole. In a number line, the length of $\frac{1}{2}$ is greater than the length of $\frac{1}{3}$. Similarly, if I cut a ribbon into three equal parts and then cut the same sized ribbon into four equal parts, then one piece of the ribbon cut into thirds is longer in length than the one piece of the ribbon cut into fourths. Fraction bars can be used to make this comparison easier to understand. Here's a visual representation:



(Picture is from Speyer Legacy School)

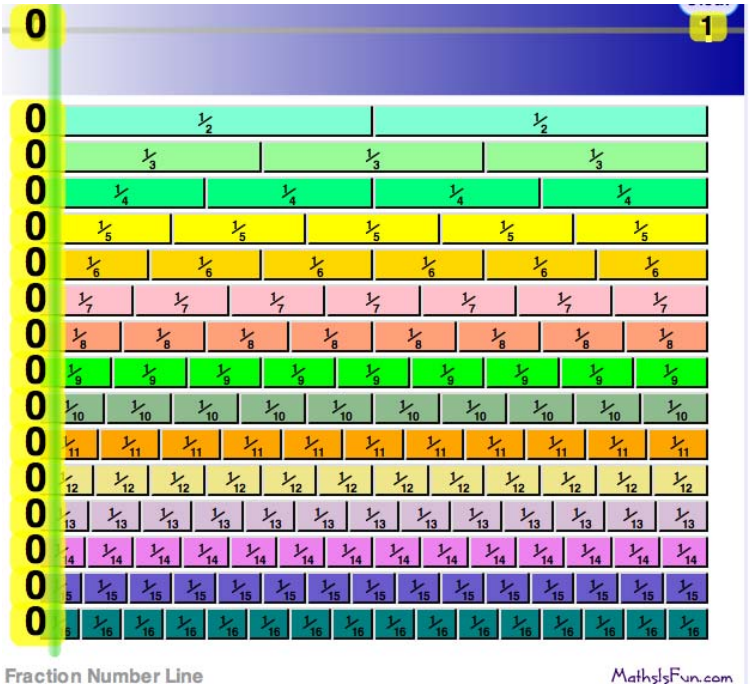
Do you notice any patterns as you increase the number of parts you divide the fraction bar into? What do you notice about the length or size of the part as the number of parts increase? Ask your child to **conjecture** and ask him/her if this is always true, sometimes true, or never true. Ask for explanations and encourage the use of math vocabulary when justifying arguments.

Equivalent fractions are fractions that have the same value, even if the number of parts is different. Visually, here's what fractions equivalent to one-half look like. The first pizza is divided into 2 equal parts while the next, same-sized pizza is divided into 4 equal parts and then the third, same-sized pizza is divided into 8 equal parts. Two one-fourths ($\frac{1}{4} + \frac{1}{4} = \frac{2}{4} = \frac{1}{2}$) and four one-eighths ($\frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} = \frac{4}{8} = \frac{2}{4} = \frac{1}{2}$) are equivalent to one-half.



(Image is from mathisfun.com)

You can go to this website to see how equivalent fractions are viewed on the number line. It's interactive and fun! Just move the vertical bar to see the equivalent fractions.
www.mathsisfun.com/numbers/fraction-number-line.html



The unit on fractions is really challenging for most third-graders, but with your support and guidance, together we will be able to engage our children in the meaningful application of fraction concepts in real-world situations. Fractions are all around us. Let's help our children realize the importance of the deep understanding of this concept. This knowledge will provide a solid foundation for children to learn more challenging concepts in later grades.

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Third Grade Teacher

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