Introducing Fractions

Things to learn about fractions:

The numerator is the top number.

The denominator is the bottom number.

The denominator tells how many equal-sized pieces fit together to make a whole.

The numerator tells how many of those pieces are being used.

Fractions can be fun, and the goal in this lesson is to get children both familiar with and comfortable with common fractions.

In a fraction, the denominator just tells how many equal-sized pieces make up the whole. Help your child understand this by giving him or her a lot of real-life examples.

$$\frac{}{12}$$

Whenever you cut an item (cake, pizza, meatloaf, loaf of bread, etc.) into equal-sized pieces, you can count the pieces. The number of pieces becomes the denominator. Say, "This cake has 12 pieces, so I have cut it into twelfths."

The **denominator** is the number of equal-sized pieces that you start out with.

NOTE: You may also want to point out that before anyone takes any pieces, you still have one whole cake (or pizza, etc.). Therefore, in this example, twelve out of twelve equals one (whole cake). This concept is covered more in another lesson.

The **numerator**, or top number, is how *many* pieces that you are *talking* about. If you give a child *one* piece, you have given him or her *one out of twelve* pieces, or one twelfth ($\frac{1}{12}$). The number 1 is the numerator, and 12 is the denominator. If five pieces are gone, then 5 *out of* 12 are gone, or five twelfths ($\frac{5}{12}$). You can even do mental addition of fractions by saying, "You ate one twelfth and I ate one twelfth, so how many twelfths did we eat?" and so on.

There are many real-life situations where you can talk about fractions. Use these real-life experiences as much as possible, so that when you start doing written work with fractions, the terminology will already be familiar.

You can use fractions without using the terms *numerator* and *denominator*. If your child isn't ready for such long words, you can just refer to the *top number* and the *bottom number*, and introduce the terms numerator and denominator in a later lesson.
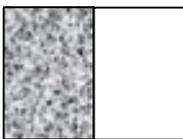
Fractions

Fractions: Parts of Equal Size

The denominator (bottom number) of a fraction tells how many equal-sized pieces make up a whole unit.

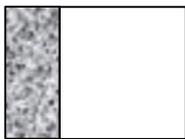*It is important to understand that the denominator always refers to equal-sized pieces. The fraction $\frac{1}{2}$ can be read,*

"One out of two,"

but it <u>always</u> refers to one piece out of two equal-sized pieces

and <u>never</u> to one piece out of two unequal pieces.

It is often helpful to read the line in a fraction as *out of*. (See Different Ways to Show Division, page Op:88). Remember that you can teach this over time — try to incorporate it into life. You don't have to sit down and make this a lesson, but you can if that works out best for you.

Teaching ideas

A fraction describes parts of equal size. Here are some ideas to teach this concept.

Pizza slices

Take a pizza and cut into four uneven pieces. (If you are not really baking, use "paper pizzas.") Give your child two *small* pieces and you take the two *large* pieces. Say, "Now we each have the same. We each have two out of four pieces." The child should object.

NOTE: If your child doesn't understand that you have more, then he or she is not ready for this. Try again at a later date.

When your child objects, try to get him or her to verbalize that the pieces aren't the same size — they have to be the same size to be *fair*. To do <u>fractions</u>, they have to be <u>fair</u> — all pieces have to be the same size. You can repeat this exercise often with other real items.

Distributing items

This concept can also be taught by distributing items. For example, divide a group of items into piles. Make one pile for each person who is participating. Suppose you have 15 pretzels and 3 children. Tell the children that you'll divide the pretzels, but don't let anyone eat them yet. Then divide the pretzels into three uneven piles (of 8, 5, and 2 pretzels), give each child a pile, and tell them that they each got one third — one group out of three. When they say it's not fair, ask "Why not? You each got one pile." Try to get them to say that the piles aren't the same size. Again, help them see that fractions are *fair* — to get ⅓ of the pretzels (1 pile out of 3 piles), each pile must be the same size.

Redo the piles so that each child has 5 pretzels, and talk about how they can now use fractions to describe the amount. Now each child has one third, or one out of three.

NOTE: Avoid doing this with very young children who will get upset at the unequal distribution.