



# THIRD GRADE MATHEMATICS – Unit 3

Dear Parents,

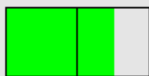
During Unit 3, your children will develop an understanding of fractions, beginning with unit fractions. They will view fractions as being built out of unit fractions, and use fractions along with visual fraction models to represent parts of a whole. Your children will understand a fraction as a number on a number line and represent fractions on a number line.

## UNIT FRACTIONS AND MEASUREMENT

### Students need to:

- Understand a fraction  $1/b$  as the quantity formed by 1 part when a whole is partitioned into  $b$  equal parts; understand a fraction  $a/b$  as the quantity formed by  $a$  parts of size  $1/b$ .
- Partition shapes into parts with equal area. Express the area of each part as a unit fraction of the whole. For example, partition a shape into 4 parts with equal area, and describe the area of each part as  $1/4$  of the area of the shape.
- Understand a fraction as a number on the number line; represent fractions on a number line diagram.
- Represent a fraction  $1/b$  on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into  $b$  equal parts. Recognize that each part has size  $1/b$  and that the endpoint of the part based at 0 locates the number  $1/b$  on the number line.
- Represent a fraction  $a/b$  on a number line diagram by marking off a lengths  $1/b$  from 0. Recognize that the resulting interval has size  $a/b$  and that its endpoint locates the number  $a/b$  on the number line.

#### The importance of specifying the whole



Without specifying the whole it is not reasonable to ask what fraction is represented by the shaded area. If the left square is the whole, the shaded area represents the fraction  $3/4$ ; if the entire rectangle is the whole, the shaded area represents  $1/4$ .

## BACKGROUND INFORMATION AND EXAMPLES FOR PARENTS

Understand a fraction  $1/b$  as the quantity formed by 1 part when a whole is partitioned into  $b$  equal parts...

<http://video.carrollk12.org/view/HEINLEINUNITFRACTIONS>

## KEY VOCABULARY

- Fraction:** A number that represents one or more equal parts of a whole
- Unit fraction:** A fraction in which its numerator is 1 and its denominator is a whole number
- Numerator:** The number of parts one selects from the whole
- Denominator:** The number of parts the "whole" is partitioned into
- Halves:** either of two equal parts into which a whole can be partitioned
- Fourths:** one or more of four equal parts into which a whole can be partitioned
- Sixths:** one or more of six equal parts into which a whole can be partitioned
- Eighths:** one or more of eight equal parts into which a whole can be partitioned
- Tenths:** one or more of ten equal parts into which a whole can be partitioned
- Thirds:** one or more of three equal parts into which a whole can be partitioned
- Unit interval:** on a number line, it is the whole that is the interval from 0 to 1, as measured by length

## WAYS PARENTS CAN HELP

- Involve your child in cooking activities. Have them select the appropriate measuring spoons and cups for the recipe. If ingredients need to be doubled or halved, ask them to figure out what the new quantity would be for the recipe.
- When food items need to be cut or shared equally by your family or a group of people, have your child consider how many parts there will be and what fractional part each person will get.
- Divide a large pile of objects (cereal, plastic animals, blocks, etc.) equally into 4 piles to illustrate one-fourth. Recombine the group to divide into other fractions.
- Fold a piece of paper into halves, and then into halves again with your child. Open it up to show the division of fourths. Fold the paper again into fourths then make another fold to show eighths.
- Count the rooms in your house and make up some fraction facts about them. One-half of the rooms have windows; one-third of them have pillows; etc.
- While in the car, mark the passing of time with fractions. "We are one-third of the way there." "It will take us 20 minutes to get to the library." "In how many minutes will we be half-way there?"