

In an effort to keep parents and guardians informed of the expectations and content being covered in math class this year, this informational handout will be provided for each chapter. Its intent is to assist in guiding you in ways to support your child in deepening their mathematical understanding.



Scan the QR code to check out teaching strategies for this chapter.

In each chapter we will spend time reviewing material taught in prior grades as it relates to the standards being taught in fourth grade. Our goal is to keep a balance of skill based learning along with enhancing our student's ability to problem solve and think conceptually.

Review Material from Prior Grades
<ol style="list-style-type: none"> 1) Products and quotients within 100. (3.OA.7) 2) Recognize fractions as a part-whole relationship. (3.NF.1) 3) Represent fractional amounts in various ways. (3.NF.2) 4) Equivalent fractions. (3.NF.3) 5) Compare two fractions with the same numerator or the same denominator. (3.NF.3d)
New Material for 4th Grade
<ol style="list-style-type: none"> 1) I can find all factor pairs for a whole number in the range 1-100. (4.OA.4) 2) I can recognize that a whole number is a multiple of each of its factors. (4.OA.4) 3) I can determine whether a given whole number in the range of 1-100 is a multiple of a given one-digit number. (4.OA.4) 4) I can determine whether a given whole number in the range of 1-100 is prime or composite. (4.OA.4) 5) I can use this principle $a/b = (n \times a/n \times b)$ to recognize & generate equivalent fractions. (4.NF.1) 6) I can compare two fractions with different numerators & different denominators. (4.NF.2) 7) I can understand addition & subtraction of fractions as joining & separating parts referring to the same whole. (4.NF.3) 8) I can decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. (4.NF.5)
End of Chapter Expectations
<ol style="list-style-type: none"> 1) Chapter Assessment

*Please note the list above highlights the main skills to be assessed. Teachers may include additional content to meet the needs of their students.

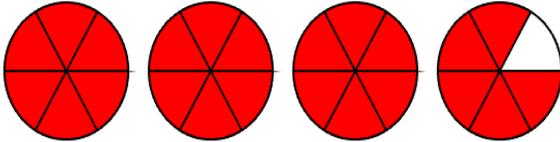
Fraction Strategies

☺ Family Practice ☺

Check out some of these free, math websites to practice fraction skills and concepts.

- 1) Factorize- <http://illuminations.nctm.org/Activity.aspx?id=3511>
- 2) Factor Game- <http://illuminations.nctm.org/Activity.aspx?id=4134>
- 3) Equivalent Fractions- <http://illuminations.nctm.org/activitydetail.aspx?id=80>
- 4) Fruit Shoot (Addition)-
<http://www.sheppardsoftware.com/mathgames/fractions/FruitShootFractionsAddition.htm>
- 5) Math Man (Add and Subtract Fractions w/Like Denominators)-
http://www.sheppardsoftware.com/mathgames/fractions/mathman_add_subtract_fractions.htm

Mixed Number Models



Fraction Form to Mixed Form

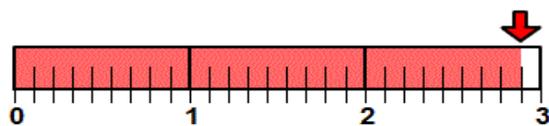
$$\frac{23}{6} = 3 \frac{5}{6}$$

- 1) Using the denominator, divide a model into fractions.
- 2) Shade in parts of fractions based on the numerator.
- 3) Count the wholes and the leftover to create a mixed number.

Mixed Numbers

You can decompose mixed numbers into sums of the whole using bar units and number lines.

Example: $\frac{26}{9}$



Fraction Form to Mixed Form

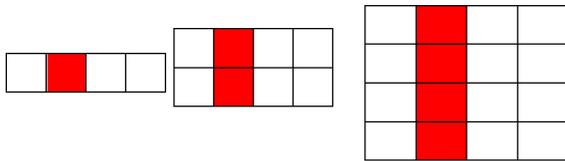
$$\frac{26}{9} = 2 \frac{8}{9}$$

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Fraction Strategies, Continued

Fraction Models

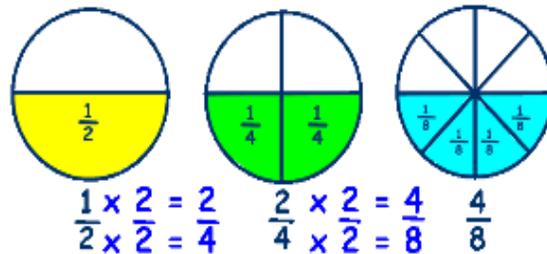
You can draw fraction models and shade them in to compare fractions.



$$\frac{1}{4} = \frac{2}{8} = \frac{4}{16}$$

Multiplying with Fraction Models

You can create an equivalent fraction by multiplying the numerator and denominator by the same factor.



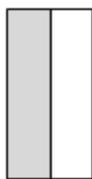
$$\frac{1}{2} \times \frac{2}{2} = \frac{2}{4} \quad \frac{2}{4} \times \frac{2}{2} = \frac{4}{8} \quad \frac{4}{8}$$

Equivalent Fractions

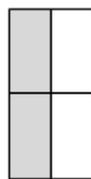
All the models show $\frac{1}{2}$. The second model shows $\frac{2}{4}$ but also shows that $\frac{1}{2}$ and $\frac{2}{4}$ are equivalent fractions because their areas are equivalent. When a horizontal line is drawn through the center of the model, the number of equal parts doubles and size of the parts is halved.

Students will begin to notice connections between the models and fractions in the way both the parts and wholes are counted and begin to generate a rule for writing equivalent fractions.

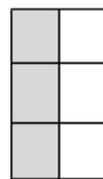
$$\frac{1}{2} \times \frac{2}{2} = \frac{2}{4}$$



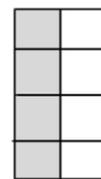
$$\frac{1}{2}$$



$$\frac{2}{4} = \frac{2 \times 1}{2 \times 2}$$



$$\frac{3}{6} = \frac{3 \times 1}{3 \times 2}$$



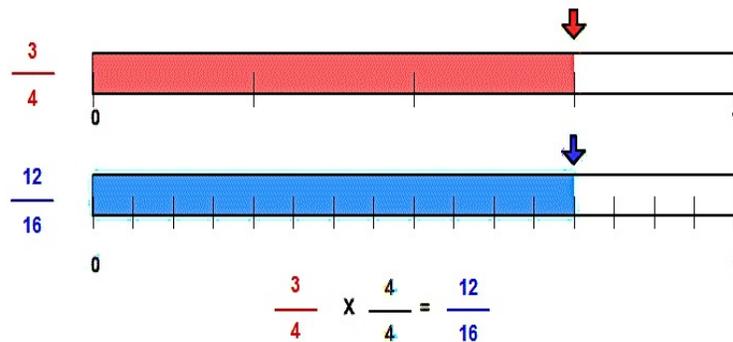
$$\frac{4}{8} = \frac{4 \times 1}{4 \times 2}$$

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Fraction Strategies, Continued

Comparing Fractions (with a number line)

You can draw number lines to compare fraction sizes.



Comparing Fractions (using LCM)

1) Write the fractions so they have the same denominator (if they already have the same denominator, skip this and go to the last step). To make each fraction have the same denominator:

- Find the least common multiple (LCM) of the denominators (it is 12 in the example).
- Multiply each fraction by n/n , where n is the number that, when multiplied by the denominator, results in the LCM (in the example, n/n is $3/3$ for the first fraction and $4/4$ for the second fraction).

2) Compare the numerators; the fraction with the largest positive numerator is the larger fraction.

Compare $\frac{3}{4}$ & $\frac{2}{3}$

The LCM of 3 and 4 is 12

$$\frac{3 \times 3}{4 \times 3} = \frac{9}{12} \quad \frac{2 \times 4}{3 \times 4} = \frac{8}{12}$$

$$\frac{9}{12} > \frac{8}{12}$$

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