

**Lyncourt Union Free School District**  
**Common Core Math Standards**  
**Elementary Progression-NF**

**Numbers & Operations-Fractions**



5. NF 1-2  
Use equivalent fractions as a strategy to add and subtract fractions.  
5. NF 3-7  
Apply and extend previous understandings of multiplication and division to multiply and divide fractions.



4. NF 1-2  
Extend understanding of fraction equivalence and ordering.  
4. NF 3-4  
Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.  
4. NF 5-7  
Understand decimal notation for fractions, and compare decimal fractions.



3. NF 1-3  
Develop understanding of fractions as numbers.



Pre-requisite Skill  
2. G 1-3  
Reason with shapes and their attributes.



Pre-requisite Skill  
1. G 1-3  
Reason with shapes and their attributes.



Pre-requisite Skill  
K. G 1-3  
Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).  
K. G 4-6  
Analyze, compare, create, and compose shapes.

# Numbers & Operations-Fractions Grade Levels 3-5 Resources

## 5<sup>th</sup> Grade-5.NF 3

Interpret a fraction as division of the numerator by the denominator ( $a/b = a \div b$ ). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem.

### Learning Targets

- I can explain that fractions represent division.
- I can solve word problems that involve division of whole numbers and interpret the quotient in the context of the problem.
- I can explain or illustrate my solution using visual fraction models or equations.

### 5<sup>th</sup> Grade Supplemental Lessons

- [Converting Fractions](#)
- [How Much Pie?](#)
- [What is 23 divided by 5?](#)
- [Painting a Wall](#)
- [Relating Fractions to Division](#)
- [Fractions of the Week](#)
- [Fraction Action](#)
- [Teacher Created Wiki](#)

### Videos & Games

- [Learnzillion videos](#)
- [Fractions Games](#)
- [Equivalent Fractions](#)

## 4<sup>th</sup> Grade-4.NF 2-3

Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as  $1/2$ . Understand a fraction  $a/b$  with  $a > 1$  as a sum of fractions  $1/b$ .

### Learning Targets

- I can compare 2 fractions by reasoning about their size & by creating equivalent fractions with a common denominator.
- I can order fractions using  $<$ ,  $>$ , and  $=$  and justify the comparison.
- I can use models to add and subtract fractions.
- I can add or subtract mixed numbers.
- I can solve word problems with fractions.

### 4<sup>th</sup> Grade Supplemental Lessons

- [Using Benchmarks to Compare Fractions](#)
- [Listing Fractions](#)
- [Fraction Cards](#)
- [Fun with Fractions](#)
- [Comparing 2 Different Pizzas](#)
- [Peaches](#)
- [Pizza Parlor](#)
- [Teacher Created Wiki](#)

### Videos & Games

- [Learnzillion videos](#)
- [Fraction Card Games](#)
- [Fraction Pac-Man](#)

## 3<sup>rd</sup> Grade-3.NF 3

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

(Grade 3 expectations in this domain are limited to fractions with denominators 2, 3, 4, 6, 8.)

### Learning Targets

- I can use models to show and explain equivalent fractions.
- I can locate equivalent fractions on a number line.
- I can use models to show and explain whole numbers as fractions.
- I can locate whole numbers as fractions on a number line I can use models to compare two fractions and record the comparison using  $<$ ,  $>$ , or  $=$ .
- I can explain how the size of equal parts can be used to compare two fractions with the same numerator & how the number of equal parts can be used to compare two fractions with the same denominator.

### 3<sup>rd</sup> Grade Supplemental Lessons

- [Fraction Number Lines](#)
- [Fun with Fractions](#)
- [Add 'Em Up](#)
- [Fractions on a Number Line](#)
- [Build a Hexagon](#)
- [Ordering Fractions](#)
- [Snow Day](#)
- [Teacher Created Wiki](#)

### Videos & Games

- [Learnzillion videos](#)
- [Creating Equivalent Fractions](#)
- [Ordering Fractions](#)
- [Fraction Bars](#)

### 5<sup>th</sup> Grade Increasing Rigor Ideas

- How would you compare 7,822.562 and 7,822.82? Explain how you know which number is larger or smaller?
- How is comparing whole numbers similar/different than comparing decimals?
- Why is  $3.3 > 3.2999$  even though 3.2999 has more digits?
- Using expanded form, explain why 3.14 is larger than 3.014?
- Write three decimals that are in between .4 and .675?
- What decimal could be less than .7 but have a 9 in it?
- What could the missing digit in  $0.43 > 0.\_9$  if the statement is true?

### 4<sup>th</sup> Grade Increasing Rigor Ideas

- Using the digits 2, 9, and 4, create three different numbers and then order them greatest to least.
- Can you think of three numbers larger than 496? Justify your answer.
- When ordering the following numbers, what are three different numbers that could go in the blank? 45, 68, 80, \_\_, 113, 134
- Why is  $\frac{1}{4} + \frac{1}{4}$  not equal to  $\frac{2}{8}$ ?
- Will  $\frac{6}{10} + \frac{6}{10}$  be greater than one whole? Explain how you know.
- How can you figure out what  $\frac{1}{4} + \frac{1}{2}$  is without finding a common denominator? Explain how you did found the answer.
- Decompose  $\frac{11}{12}$  in 3 different ways.
- Ester ate  $\frac{3}{4}$  of a small pizza on Monday and she ate  $\frac{1}{4}$  of a large pizza on Tuesday. She says that she has eaten a whole pizza. Is she correct? Why or why not? Explain your answer.

### 3<sup>rd</sup> Grade Increasing Rigor Ideas

- Show  $\frac{1}{2}$  and  $\frac{4}{8}$ . Have students compare the two fractions using different representations. Ask students to explain why these two fractions are equal and have them brainstorm other equivalent fractions to  $\frac{1}{2}$ . (3.NF.3a)
- Have students use a number line to convince someone that  $\frac{3}{4} = \frac{6}{8}$ . (3.NF.3a)
- Use manipulatives such as Cuisnaire rods, fraction strips/circles/towers, pattern blocks, counters, etc. for students to show various representations of  $\frac{1}{2}$ . (3.NF.3b)
- Find a fraction that is equal to  $\frac{2}{3}$ . Equal to  $\frac{3}{4}$ . Justify your answers. (3.NF.3b)
- Draw a number line and count the jumps to show how whole numbers are formed. For example, jump 1, 2, 3 to show  $\frac{3}{1}$  and then jump  $\frac{1}{4}$ ,  $\frac{2}{4}$ ,  $\frac{3}{4}$ ,  $\frac{4}{4}$  to show reaching 1. (3.NF.3c)
- How many different ways can you show 1 whole? (3.NF.3c)

### 3<sup>rd</sup> Grade-3.NF.1 (Pre-requisite to 3.NF.3)

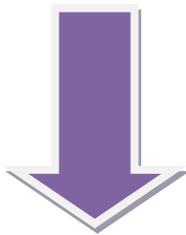
*Understand a fraction  $\frac{1}{b}$  as the quantity formed by 1 part when a whole is partitioned into  $b$  equal parts; understand a fraction  $\frac{a}{b}$  as the quantity formed by  $a$  parts of size  $\frac{1}{b}$ .\** (Grade 3 expectations in this domain are limited to fractions with denominators 2, 3, 4, 6, 8.)

### 3<sup>rd</sup> Grade Supplemental Lessons

- [-Fractions with Color Tiles](#)
- [-How to Identify Fractions](#)
- [-Congruent Eighths](#)
- [-Equal Parts on the Geoboard](#)
- [-Fraction Strips](#)
- [-Introduction to Fractions](#)
- [-Teacher Created Wiki](#)

### Videos & Games

- [-Learnzillion videos](#)
- [-Fraction Fling](#)
- [-Concentration](#)



**K-2 Pre-requisite Geometry resources below.**

# Fractions Pre-requisite: Geometry Grade Levels K-2 Resources

## 2<sup>nd</sup> Grade-2.G 3

Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.

### Learning Targets

- I can partition (divide) a circle and rectangle into two, three, or four equal parts.
- I can describe the equal shares with words (e.g., halves, thirds, fourths).
- I can describe a whole by the number of equal parts (e.g., two halves make a whole).
- I can explain and give examples to show that halves, thirds, and fourths of an identical whole need not be the same shape.

### 2<sup>nd</sup> Grade Supplemental Lessons

- [Fraction Flags \(1/2 & 1/4\)](#)
- [Fraction Flags \(1/3\)](#)
- [Introduction to Fractions](#)
- [Half and Half Performance Assessment](#)
- [Which Pictures Represent One Half?](#)
- [Representing Half of a Rectangle](#)
- [Fractions Folded](#)
- [Assorted Shapes \(templates\)](#)
- [Teacher Created Wiki](#)

### Videos & Games

- [Learnzillion videos](#)
- [13 Ways of Looking at Half](#)
- [Shape Riddles](#)

## 1<sup>st</sup> Grade-1.G 3

Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.

### Learning Targets

- I can partition (divide) a circle and rectangle into two and four equal parts.
- I can describe the equal parts of a circle and rectangle with words (halves, fourths, and quarters).
- I can describe the whole by the number of equal parts (e.g., two halves make a whole).
- I can explain the more equal parts in circle or rectangle, the smaller the parts.

### 1<sup>st</sup> Grade Supplemental Lessons

- [Fraction Pictures](#)
- [Make a Pizza](#)
- [Understanding Shapes & Fractions Unit](#)
- [My Shapes Book](#)
- [Cover a Hexagon](#)
- [Investigating Triangles](#)
- [I've seen that shape before](#)
- [Three Sides](#)
- [Teacher Created Wiki](#)

### Videos & Games

- [Shape Sorter](#)
- [Cubes \(PBS\)](#)
- [Spring Flowers](#)

## Kindergarten-K.G 1, 3

Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to. Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid").

### Learning Targets

- I can define two-dimensional as being flat.
- I can define three-dimensional as being solid.
- I can identify two-dimensional shapes.
- I can identify three-dimensional shapes.

### Kindergarten Supplemental Lessons

- [Kindergarten Geometry Resources](#)
- [Pattern Block Barrier Game](#)
- [Barrier Game Grid](#)
- [Barrier Game Grid with Words](#)
- [The Shape of Things](#)
- [Tangram Puzzles](#)
- [Three Sides](#)
- [Puzzling Relationships](#)
- [Teacher Created Wiki](#)

### Videos & Games

- [Going on a shape hunt](#)
- [Geometry Literature Connections](#)

## 2<sup>nd</sup> Grade Increasing Rigor Ideas

-It's field day at our school! Four classes must share the rectangular play area equally. Show different ways to share the field and describe the area using the word fourth. What other shape could the play area be to be shared equally with these four classes? Enrichment: Now six classes must share the same area. Show different ways to share the field. Show how to share with eight classes.

- How many different ways can you cut a rectangle into fourths? Show me.

- Jane went to two different birthday parties on the same day. At the first birthday party, the cake was a square and it was cut into fourths diagonally. At the second birthday party, the cake was the same sized square but it was cut into fourths horizontally. Jane says her piece of cake was bigger at the first party. Is she right? Use drawings to support your answer.

## 1<sup>st</sup> Grade Increasing Rigor Ideas

-Show 3 different rectangles partitioned into fourths and ask students why the diagonally partitioned pieces aren't larger than the others.

-Brian and his three friends want to share a square pan of brownies equally. What are the different ways to cut the pan of brownies?

-What does it mean when we say a shape has equal parts? Give examples of the many ways we use the word equal in math class.

-Draw 2 lines to make 4 equal parts. What smaller shapes did you make? Divide the rectangle into 4 equal parts another way? What smaller shapes did you make this time?

-Provide students with many identical squares. How many different ways can you divide the squares into fourths? Use examples to support your reasoning. (3 ways: diagonally, horizontal, and perpendicular)

-How many quarter-circles would you need to make a whole circle? How many quarter-circles would you need to make a half-circle? Explain your thinking.