A SAMPLE OF WHAT YOUR CHILD WILL BE LEARNING

- Understanding and applying the concepts of ratios and unit rates, and using the correct language to describe them (for example, the ratio of wings to beaks in a flock of birds is 2 to 1, because for every 2 wings there is one beak)
- Building on knowledge of multiplication and division to divide fractions by fractions
- Understanding that positive and negative numbers are located on opposite sides of 0 on a number line
- Using pairs of numbers, including negative numbers, as coordinates for locating or placing a point on a graph
- Writing and determining the value of expressions with whole-number exponents (such as $15+3^2$)
- Identifying and writing equivalent mathematical expressions by applying the properties of operations. For example, recognizing that 2 (3+x) is the same as 6+2x
- Understanding that solving an equation such as 2+x=12 means answering the question, "What number does x have to be to make this statement true?"
- Representing and analyzing the relationships between independent and dependent variables
- Solving problems involving area and volume

MATHEMATICAL PRACTICES

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

TALK TO YOUR CHILD'S TEACHER

Keep conversations focused on concepts your child will be learning.

Ask to see a sample of your child's work and ask the teacher questions such as:

- Is my child at the level where he/she should be at this point of the school year?
- Where is my child excelling?
- What do you think is giving my child the most trouble? How can I help my child improve in this area?
- What can I do to help my child with upcoming work?

ACTIVITIES FOR HOME TO SUPPORT LEARNING

- Ask your child to calculate the unit rates of items purchased from the grocery store. For example, if 2 pounds of flour cost $3.00, how much does flour cost per pound?
- Have your child determine the amount of ingredients needed when cooking. For example, if a recipe calls for 8 cups of rice to serve 4 people, how many cups of rice do you need to serve 6 people?
- Have your child determine the average speed of a family trip, based on the distance traveled and the time taken, or estimate the time that a trip will take, given the distance and an estimate of the average speed. (Examples can also come from the news-for example, a swimmer crossing the English Channel or a space probe traveling to another planet.)
- Ask your child to find the surface area of the walls and ceiling in a room to determine the cost of painting the room.

6th Grade

Parent Resource

Mathematics

COMMON CORE STATE STANDARDS

Central Community Unit School District #301
PO Box 396, 275 South Street
Burlington, IL 60109
847-464-6005

EXAMPLES OF WORKING WITH FRACTIONS

Real-world problems give students a context for dividing fractions by fractions.

Ann has 3 ½ lbs of peanuts for the party. She wants to put them in small bags each containing ½ lb. How many small bags of peanuts will she have?

Students use their knowledge of fractions to see that there are 7 halves in 3 ½ lbs, so there will be 7 bags of peanuts.

Students can also find how many halves are in $3\ ^{1}/_{2}$ by applying the traditional procedure of dividing $3\ ^{1}/_{2}$ by $^{1}/_{2}$.

$$3\ ^{1}/_{2} = {}^{7}/_{2}$$

$${}^{7}/_{2} \div {}^{1}/_{2} = {}^{7}/_{2} \times {}^{2}/_{1} = {}^{14}/_{2} = 7$$

EXAMPLES OF UNDERSTANDING RATIOS AND PROPORTIONS

Students use diagrams and tables to think through and solve real-world problems involving ratios.

A slime mixture is made by mixing glue and liquid laundry starch in a ratio of 3 to 2. How much glue and how much starch are needed to make 90 cups of slime?

Parts	Quantities
5 parts	90 cups
1 part	90/5 =18 cups
2 parts	2x18 =36 cups
3 parts	3x18 =54 cups

Using knowledge of ratios and proportions, students see that if each cup of slime is made up of 3 parts glue and 2 parts starch, there are 5 parts in each cup. They can then compute the quantity of one, two, and three parts of 90 cups to determine the exact amounts of glue and starch needed.

Fractions

5th Grade Mathematics

- Interpret a fraction as division of the numerator by the denominator.
- Add and subtract fractions with different denominators.
- Multiply a fraction by a whole number or another fraction.
- Divide fractions by whole numbers and whole numbers by fractions.

6th Grade Mathematics

- Divide fractions by fractions using visual models and equations to represent the problem.
- Solve word problems involving division of fractions by fractions.

7th Grade Mathematics

- Add, subtract, multiply, and divide rational numbers in any form, including whole numbers, fractions, and decimals.
- Solve multi-step problems involving positive and negative rational numbers.

Ratios & Proportions

5th Grade Mathematics

- Explain why a fraction is equal to another fraction.
- Interpret multiplication as scaling (resizing).

6th Grade Mathematics

- Understand the concept of a ratio and use the correct language to describe it.
- Understand the concept of a unit rate (the rate per unit, or a ratio with a denominator of 1) and use the correct language to describe it.
- Use ratio and rates to solve real-world problems.

7th Grade Mathematics

- Analyze proportional relationships and use them to solve real-world problems.
- Calculate the unit rates associated with ratios of fractions, such as the ratio of 1/2 a mile for every 1/4 of an hour.
- Recognize and represent proportional relationships in various ways, including using tables, graphs, and equations.
- Identify the unit rate in tables, graphs, equations, and verbal descriptions of proportional relationships.