Name Date Time

Family Letter

Study Link 6.11

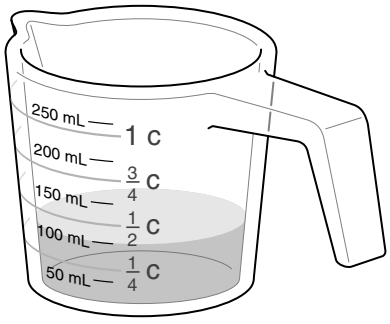
Unit 7: Fractions and Their Uses; Chance and Probability

In the unit just completed, your child practiced locating places on the globe using degrees of latitude and longitude with relation to the equator and the prime meridian. If you have a world globe or atlas, ask your child to show you how to use latitude and longitude to describe the locations of your hometown and other places of interest.

One of the most important ideas in mathematics is the concept that a number can be named in many different ways. For example, a store might advertise an item at $\frac{1}{2}$ off its original price or at a 50% discount—both mean the same thing. Much of the mathematics your child will learn involves finding equivalent names for numbers.

A few weeks ago, the class studied decimals as a way of naming numbers between whole numbers. Fractions serve the same purpose. After reviewing the meaning and uses of fractions, students will explore equivalent fractions—fractions that have the same value, such as $\frac{1}{2}$, $\frac{2}{4}$, $\frac{3}{6}$, and so on. As in past work with fractions, students will handle concrete objects and look at pictures, because they first need to "see" fractions in order to understand what fractions mean.

Fractions are also used to express the chance that an event will occur. For example, if we flip a coin, we say that it will land heads-up about $\frac{1}{2}$ of the time. The branch of mathematics that deals with chance events is called **probability.** Your child will begin to study probability by performing simple experiments.



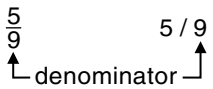
A measuring cup showing fractional increments

Please keep this Family Letter for reference as your child works through Unit 7.

Vocabulary

Important terms in Unit 7:

denominator The number below the line in a fraction. In a fraction where the whole is divided into equal parts, the denominator represents the number of equal parts into which the whole (or ONE or unit) is divided. In the fraction $\frac{a}{b}$, b is the denominator.



equal chance or equally likely When each of the possible outcomes for some situation has the same chance of occurring, the outcomes are said to have an equal chance or to be equally likely. For example, in tossing a coin there is an equal chance of getting heads or tails. Heads and tails are equally likely outcomes.

equivalent fractions Fractions that have different denominators but name the same amount. For example, $\frac{1}{2}$ and $\frac{4}{8}$ are equivalent fractions.

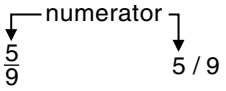
fair (coin, die, or spinner) A device that is free from bias. Each side of a fair die or coin will come up about equally often. Each section of a fair spinner will come up in proportion to its area.

A die has six faces. If the die is fair, each face has the same chance of coming up.

fair game A game in which every player has the same chance of winning.

mixed number A number that is written using both a whole number and a fraction. For example, $2\frac{1}{4}$ is a mixed number equal to $2 + \frac{1}{4}$.

numerator The number above the line in a fraction. In a fraction where the whole is divided into a number of equal parts, the numerator represents the number of equal parts being considered. In the fraction $\frac{a}{b}$, a is the numerator.



probability A number from 0 to 1 that tells the chance that an event will happen. The closer a probability is to 1, the more likely the event is to happen.

whole (or ONE or unit) The entire object, collection of objects, or quantity being considered; the ONE; the unit; 100%.

"whole" box A box in which students write the name of the whole (or ONE or unit).

Whole
24 pennies

Do-Anytime Activities

To work with your child on concepts taught in this unit, try these interesting and rewarding activities:

1. Have your child look for everyday uses of fractions in grocery items, clothing sizes, cookbooks, measuring cups and spoons, and statistics in newspapers and on television.
2. Encourage your child to express numbers, quantities, and measures, such as a quarter of an hour, a quart of orange juice, a dozen eggs, and a pint of milk.
3. While grocery shopping, help your child compare prices by looking at shelf labels or calculating unit prices. Help your child make decisions about the "better buy." If a calculator is available, have your child take it to the store.
4. Have your child look for everyday uses of probabilities in games, sports, and weather reports. Ask your child to make a list of events that could never happen, might happen, and are sure to happen.

Building Skills through Games

In this unit, your child will work on his or her understanding of numbers and fractions by playing the following games. For detailed instructions, see the *Student Reference Book.*

Name That Number See *Student Reference Book,* page 203.

This is a game for 2 or 3 players and requires a complete deck of number cards. The game helps students review operations with whole numbers.

Fraction Top-It See *Student Reference Book,* page 197.

This is a game for 2 to 4 players and requires one set of 32 Fraction Cards. The game develops skill in comparing fractions.

As You Help Your Child with Homework

As your child brings assignments home, you may want to go over the instructions together, clarifying them as necessary. The answers listed below will guide you through some of the Study Links in this unit.

Study Link 7.2

1. **a.** 15 nickels **c.** \$0.30

2. **a.** 4 **b.** 12 **c.** 8 **3.** 6

4. 12 **5.** 7 **6.** 28

7. 10 **8.** 30 **9.** 10

10. 12 **11.** 12 **12.** $2\frac{1}{2}$

Study Link 7.3

3. 8 cans

Study Link 7.4

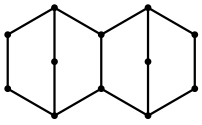
1. Less than \$1.00

2. $3\frac{3}{4}$ inches

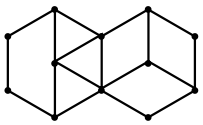
3. $\frac{1}{6}$

4. $2\frac{3}{8}$

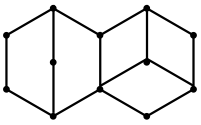
5. Sample answers:



$\frac{1}{4}+\frac{1}{4}+\frac{1}{4}+\frac{1}{4}=1$



$\frac{1}{4}+\frac{3}{12}+\frac{3}{6}=1$



$\frac{2}{4}+\frac{3}{6}=1$

Study Link 7.5

1. $\frac{5}{12}$ **2.** $\frac{1}{6}$ **3.** $\frac{1}{4}$

4.  **5.**  **6.** 

7. $\frac{3}{4}$ **8.** $\frac{1}{4}$ **9.** $\frac{1}{3}$

10. no; Sample answer: It took more than 1 hour to drive, because $\frac{1}{2}+\frac{1}{2}$ is 1 hour, and $\frac{3}{4}$ is larger than $\frac{1}{2}$; or $\frac{1}{2}+\frac{3}{4}=\frac{15}{12}$.

Study Link 7.6

1. C, F, I **2.** B, D

3. E, H **4.** A, G

Study Link 7.7

1. = **2.** ≠ **3.** =

4. = **5.** = **6.** ≠

7. ≠ **8.** = **9.** ≠

10. 8 **11.** 3 **12.** 10

13. 18 **14.** 12 **15.** 12

16. Sample answer: You could tell her that the Equivalent Fractions Rule states that you will get an equivalent fraction if you multiply by (not add) the same number in the numerator and denominator. Or you could draw a picture to show that $\frac{1}{4}$ is not equal to $\frac{3}{6}$.

Study Link 7.8

Sample answers:

1. $\frac{2}{10}; \frac{1}{5}; \frac{20}{100}$ **2.** $\frac{6}{10}; \frac{3}{5}; \frac{60}{100}$

3. $\frac{5}{10}; \frac{1}{2}; \frac{50}{100}$ **4.** $\frac{3}{4}; \frac{30}{40}; \frac{75}{100}$

Sample answers:

5. 0.3 **6.** 0.63

7. 0.7 **8.** 0.4

9. 0.70; $\frac{70}{100}$ **10.** 0.2; $\frac{2}{10}$

Study Link 7.9

1. > **2.** < **3.** =

4. = **5.** < **6.** >

7. Answers vary. **8.** Answers vary. **9.** $\frac{1}{4}; \frac{4}{10}; \frac{3}{7}; \frac{24}{50}$

10. $\frac{1}{50}; \frac{1}{20}; \frac{1}{5}; \frac{1}{3}; \frac{1}{2}$ **11.** $\frac{4}{100}; \frac{4}{12}; \frac{4}{8}; \frac{4}{5}; \frac{4}{4}$ **12.** $\frac{1}{12}; \frac{3}{12}; \frac{7}{12}; \frac{8}{12}; \frac{11}{12}$

Study Link 7.10

3. 28 **4.** 27 **5.** 8

6. 30 **7.** 10 **8.** 36