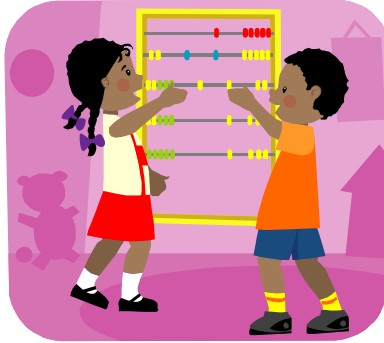


Math 4



Mrs. Ahearn

Mrs. Gratton

Unit 3

Mathematics is a tool used to solve problems in everyday life. In this unit, students use their developing knowledge of patterns and relationships, as well as their understanding of mathematical language, to learn how mathematics is used in everyday life.

In grade 3, students worked with common fractions in concrete and pictorial forms. Their experience with decimals was also concrete, using money to learn about quantities less than one. While continuing to develop conceptual understanding through models and pictures, students in grade 4 move to more abstract thinking about common and decimal fractions. They look at the relationship between common and decimal fractions and

at how to perform some of the basic number operations with fractional parts. These understandings are extended in grade 5 as students learn about operations with unlike denominators and percents.

Previously students expressed the likelihood of an event with words such as *certain*, *more likely*, *equally likely*, *less likely*, and *impossible*. In grade 4, students apply their understanding of fractions to the concept of probability, as they learn to quantify the probability of an event. This unit also focuses on organizing and listing possible outcomes of an event.

Unit 3 Parent Letter

[Math4 unit3 parent letter](#)

Vocabulary

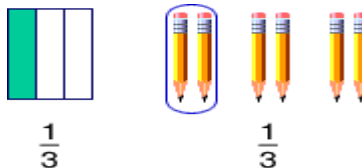
Common fraction	Improper fraction	Tenths
Decimal fraction	Mixed number	Tree diagram
Hundredths	Probability	

Part 1: Fractions

fraction

A number that names part of a whole or part of a group

Example:



denominator

The number below the bar in a fraction. It tells the total number of equal parts.

Example:

$$\frac{3}{4} \leftarrow \text{denominator}$$

numerator

The number above the bar in a fraction. It tells how many of the equal parts of the whole or group are being considered.

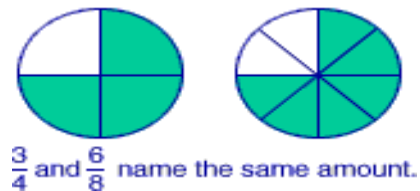
Example:

$$\frac{3}{4} \leftarrow \text{numerator}$$

equivalent fractions

Two or more [fractions](#) that name the same amount

Example:



mixed number

A number that is made up of a whole number and a fraction

Example:

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

Simplest form

A fraction is in simplest form when the numerator and denominator have no common factors other than 1.

Example:

$$\frac{1}{12} \frac{1}{12} \frac{1}{12} \frac{1}{12} \quad \frac{4}{12}$$

$$\frac{1}{6} \quad \frac{1}{6} \quad \frac{2}{6}$$

$$\frac{1}{3} \quad \frac{1}{3} \leftarrow \text{largest fraction bar}$$

$$\frac{6}{18} = \frac{6 \div 6}{18 \div 6} = \frac{1}{3}$$

$\frac{4}{12}$ in simplest form is $\frac{1}{3}$.

or

The simplest form of $\frac{6}{18}$ is $\frac{1}{3}$.

benchmark percent

A commonly used percent that is close to the amount you are estimating

Examples:

25% is a good benchmark for amounts close to $\frac{1}{4}$.

50% is a good benchmark for amounts close to $\frac{1}{2}$.

10%, 75%, and 100% are other common benchmark percents.

estimate

To find an answer that is close to the exact answer

Example:

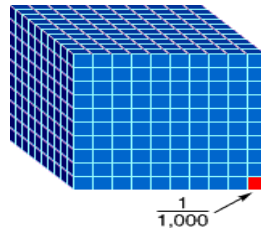
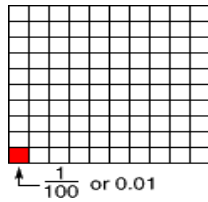
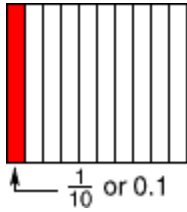
$$\$4.98 + \$5.07 + \$3.79 = \mathbf{X} \quad \text{estimation: } \$5.00 + \$5.00 + \$4.00 = \text{about } \$14.00$$

decimal

A number that uses place value and a decimal point to show values less than one, such as tenths and hundredths

Example:

3.47



decimal number system

A place value number system based on grouping by tens; each place has a value 10 times the value of the place at its right.

PLACE VALUE											
	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths	Ten Thousandths
1,623,051 →	1	6	2	3	0	5	1				
0.0531 →							0	0	5	3	1
32.4 →						3	2	4			

decimal point

A period used in decimal numbers to separate the whole number part from the decimal part

Example:

decimal point
0 . 3 three-tenths
A zero is used to show there are no ones.

equivalent decimals

Two or more decimals that name the same amount

Example:

0.3 and 0.30 or 0.5 = 0.50 = 0.500

name the same amount.

mixed decimal

A number that is made up of a whole number and a decimal

Examples:

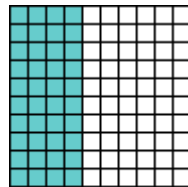
3.07

25.247

percent

The ratio of a number to 100


Example:



$$\frac{40}{100} = 40\%$$

40% of the squares are shaded

ratios:

A comparison of two numbers or quantities 

Example:

3 to 5, or 3:5, or $\frac{3}{5}$

Part 3: Probability

probability

The chance that a given event will occur

$$\text{Probability} = \frac{\text{number of ways the event occurs}}{\text{number of ways all events can occur}}$$

Example:



$$\text{Probability of red} = \frac{1}{4}$$

certain

A prediction or outcome that will always happen

Example:

I am certain the sun will come up tomorrow.

I am certain I will get wet if I jump into the ocean in my bathing suit.

equally likely

When the outcomes of an experiment have the same chance of happening

Example:



You are equally likely to roll 1, 2, 3, 4, 5, or 6.

experimental probability

The ratio of the number of times the event occurs to the total number of trials or times the activity is performed

$$\text{experimental probability} = \frac{\text{number of times success occurs}}{\text{total number of trials}}$$

fairness

When one outcome is not more likely to happen than another

Example:



The spinner is fair. All sections are equal in size, shape, and color; all colors have a **fair chance** of being landed on.

impossible

A prediction or outcome that will never happen or is impossible.

Example:

I predict a dinosaur will walk into your classroom today.

I predict I can climb up to the moon.

possible outcome

Something that has a chance of happening in an experiment

Example:



The possible outcomes for the spinner are red, blue, green, and yellow.

On this spinner the outcomes are equal.

predict

To tell what **might** happen:

Example:

I predict it will snow on Friday.

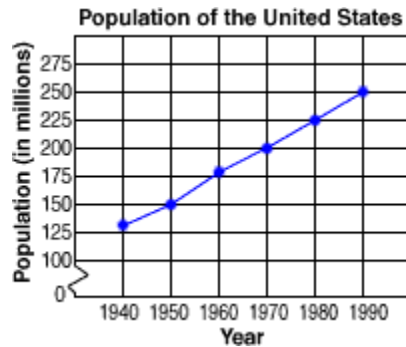
I predict I will get 100% on my next spelling test.

prediction

An estimate made by looking at a trend over time and then extending that trend to describe a future event

Example:

The trend is an increase about



increase with no declines. From 1970 to 1990, the population 25 million every 10 years.

Since the population increased about 25 million every 10 years from 1970 to 1990, a good prediction for the year 2000 would be about 250 million + 25 million, or 275 million

Part 4: Graphs and Diagrams

tree diagram

An organized list that shows all possible outcomes of an event

Example:



So, there are 6 possible outcomes

table diagram

a table used to organize data to show all possible outcomes of an event.

Shirt colors

		rd	blue	green
Pant colors	blue	X	X	X
	tan	X	X	X

circle graph

A graph in the shape of a circle that shows fractions, percents, or decimals as parts of a whole

Example:



Websites

General:

Skills Tutor <http://www.myskillstutor.com/login.jsp>

Math Practice <http://www.aaamath.com/>

Math Flashcards <http://www.aplusmath.com/Flashcards/>

Fractions:

AAA Math <http://www.aaamath.com/fra.html>

Kids Online Resources
<http://www.kidsolr.com/math/fractions.html>

Visual Fractions <http://www.visualfractions.com/>

Learning Planet

<http://www.learningplanet.com/sam/ff/index.asp>

Funbrain <http://www.funbrain.com/fract/index.html>

Gamequarium <http://www.gamequarium.com/fractions.html>

A Plus Math

<http://www.aplusmath.com/Worksheets/index.html>

Who Wants Pizza?

<http://math.rice.edu/~lanius/fractions/index.html>

Fraction Model

<http://illuminations.nctm.org/ActivityDetail.aspx?ID=44>

Clara Fraction's Ice Cream Shop

<http://www.mrnussbaum.com/icecream/index.html>

Decimals:

AAA Math <http://www.aaamath.com/dec.htm>

Math Is Fun

<http://www.mathsisfun.com/worksheets/decimals.php>

Decimals <http://classroom.jc-schools.net/basic/math-decim.html>

Cool Math <http://www.coolmath.com/decimals/index.html>

Decimal Practice

<http://www.mccc.edu/~kelld/decimals/decimals.htm>

Decimal Switch

<http://www.interactivestuff.org/sums4fun/switch.html>

Interactive Stuff

<http://www.interactivestuff.org/sums4fun/scales.html>

Virtual Manipulatives

http://nlvm.usu.edu/en/nav/frames_asid_264_g_2_t_1.html

Decimal Squares <http://www.decimalsquares.com/>

Probability:

Math Goodies

http://www.mathgoodies.com/lessons/vol6/intro_probability.html

Probability <http://classroom.jc-schools.net/basic/math-prob.html>

Adjustable Spinner

http://www.shodor.org/interactivate/activities/AdjustableSpinner/?version=1.5.0_06&browser=MSIE&vendor=Sun Microsystems Inc.

Circle Graph

<http://www.shodor.org/interactivate/activities/CircleGraph/>

Fish Tank

<http://www.bbc.co.uk/education/mathsfile/shockwave/games/fish.html>

Crab Race

<http://www.squiglyplayhouse.com/Games/Java/CrabRace/index.html>