

Standards Correlated to **Mathematics Readers: Level 6 14333**

**New York State P-12 Common Core Learning Standards**

**Grade 6**

**Mathematics**

STRAND / DOMAIN NY.CC.6.MP. Mathematical Practices

CATEGORY / CLUSTER 6.MP.3. Construct viable arguments and critique the reasoning of others.

Correlated Lessons:

**Hurricane Hunters, Tornado Chasers, Tonight's Concert, Battle of the Bands Page Reader: Objective 50 Students use data and statistical measures for a variety of purposes (e.g., formulating hypotheses, making predictions, testing conjectures)**

STRAND / DOMAIN NY.CC.6.RP. Ratios and Proportional Relationships

CATEGORY / CLUSTER Understand ratio concepts and use ratio reasoning to solve problems.

STANDARD 6.RP.1. Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." "For every vote candidate A received, candidate C received nearly three votes."

Correlated Lessons:

**On the Road, Our New Car Page 36, 41: Objective 1 Students will use ratio language to describe relationships and solve real-world problems including rates and percent.**

**On the Road, Our New Car Page Reader: Objective 27 Students understand the concepts of ratio, proportion, and percent and the relationships among them**

**On the Road, Our New Car Page Reader: Objective 28 Students use proportional reasoning to solve**

**mathematical and real-world problems (e.g., involving equivalent fractions, equal ratios, constant rate of change, proportions, percents)**

STANDARD 6.RP.2. Understand the concept of a unit rate  $a/b$  associated with a ratio  $a:b$  with  $b$  not equal to 0, and use rate language in the context of a ratio relationship. For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is  $3/4$  cup of flour for each cup of sugar." "We paid \$75 for 15 hamburgers, which is a rate of \$5 per hamburger."

Correlated Lessons:

**On the Road, Our New Car Page 36, 41: Objective 1 Students will use ratio language to describe relationships and solve real-world problems including rates and percent.**

**On the Road, Our New Car Page Reader: Objective 27 Students understand the concepts of ratio, proportion, and percent and the relationships among them**

**On the Road, Our New Car Page Reader: Objective 28 Students use proportional reasoning to solve mathematical and real-world problems (e.g., involving equivalent fractions, equal ratios, constant rate of change, proportions, percents)**

**On the Road, Our New Car Page Reader: Objective 29 Students understand the basic concept of rate as a measure (e.g., miles per gallon)**

STANDARD 6.RP.3. Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.

EXPECTATION 6.RP.3.a. Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate

plane. Use tables to compare ratios.

Correlated Lessons:

**On the Road, Our New Car Page 36, 41: Objective 1**  
Students will use ratio language to describe relationships and solve real-world problems including rates and percent.

**On the Road, Our New Car Page Reader: Objective 27**  
Students understand the concepts of ratio, proportion, and percent and the relationships among them

**On the Road, Our New Car Page Reader: Objective 28**  
Students use proportional reasoning to solve mathematical and real-world problems (e.g., involving equivalent fractions, equal ratios, constant rate of change, proportions, percents)

EXPECTATION 6.RP.3.b.

Solve unit rate problems including those involving unit pricing and constant speed. For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?

Correlated Lessons:

**On the Road, Our New Car Page 36, 41: Objective 1**  
Students will use ratio language to describe relationships and solve real-world problems including rates and percent.

**On the Road, Our New Car Page Reader: Objective 27**  
Students understand the concepts of ratio, proportion, and percent and the relationships among them

**On the Road, Our New Car Page Reader: Objective 28**  
Students use proportional reasoning to solve mathematical and real-world problems (e.g., involving equivalent fractions, equal ratios, constant rate of change, proportions, percents)

**On the Road, Our New Car Page Reader: Objective 29 Students understand the basic concept of rate as a measure (e.g., miles per gallon)**

EXPECTATION 6.RP.3.c. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.

Correlated Lessons:

**On the Road, Our New Car Page Reader: Objective 28 Students use proportional reasoning to solve mathematical and real-world problems (e.g., involving equivalent fractions, equal ratios, constant rate of change, proportions, percents)**

EXPECTATION 6.RP.3.d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.

Correlated Lessons:

**On the Road, Our New Car Page Reader: Objective 30 Students solve problems involving units of measurement and converts answers to a larger or smaller unit within the same system (i.e., standard or metric)**

STRAND / DOMAIN NY.CC.6.NS. The Number System

CATEGORY /  
CLUSTER

Apply and extend previous understandings of multiplication and division to divide fractions by fractions.

STANDARD 6.NS.1.

Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. For example, create a story context for  $(2/3) \div (3/4)$  and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that  $(2/3) \div (3/4) = 8/9$  because  $3/4$  of  $8/9$  is  $2/3$ . (In general,  $(a/b) \div (c/d) =$

ad/bc.) How much chocolate will each person get if 3 people share  $\frac{1}{2}$  lb of chocolate equally? How many  $\frac{3}{4}$ -cup servings are in  $\frac{2}{3}$  of a cup of yogurt? How wide is a rectangular strip of land with length  $\frac{3}{4}$  mi and area  $\frac{1}{2}$  square mi?

Correlated Lessons:

**Watch It Grow, Where Germs Lurk, Land Animals, Sea Creatures, A Sense of Art, Landscape by Design, Package Design, Pack It Up Page Reader: Objective 35 Students add, subtract, multiply, and divide integers, and rational numbers**

**What Did I Eat?, How Do They Make That? Page 60, 65: Objective 4 Students will apply and extend previous understandings of addition, subtraction, multiplication, and division of rational numbers,**

**What Did I Eat?, How Do They Make That? Page Reader: Objective 33 Students add and subtract fractions with unlike denominators; multiples and divides fraction**

CATEGORY /  
CLUSTER

STANDARD

6.NS.3.

Compute fluently with multi-digit numbers and find common factors and multiples.

Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.

Correlated Lessons:

**Watch It Grow, Where Germs Lurk, Land Animals, Sea Creatures, A Sense of Art, Landscape by Design, Package Design, Pack It Up Page Reader: Objective 35 Students add, subtract, multiply, and divide integers, and rational numbers**

**What Did I Eat?, How Do They Make That? Page 60, 65: Objective 4 Students will apply and extend previous understandings of addition, subtraction, multiplication, and division of rational numbers,**

STRAND / DOMAIN NY.CC.6.EE. Expressions and Equations

CATEGORY /  
CLUSTER

Apply and extend previous understandings of arithmetic to algebraic expressions.

STANDARD

6.EE.1.

Write and evaluate numerical expressions involving whole-number exponents.

Correlated Lessons:

**Watch It Grow, Where Germs Lurk Page Reader: Objective 36 Students understand exponentiation of rational numbers (e.g., squares and cubes)**

STANDARD

6.EE.2.

Write, read, and evaluate expressions in which letters stand for numbers.

EXPECTATION 6.EE.2.a.

Write expressions that record operations with numbers and with letters standing for numbers. For example, express the calculation "Subtract  $y$  from 5" as  $5 - y$ .

Correlated Lessons:

**Watch It Grow, Where Germs Lurk Page 84, 89: Objective 7 Students will write, simplify, and evaluate linear and exponential expressions.**

**Watch It Grow, Where Germs Lurk Page Reader: Objective 38 Students know that an expression is a mathematical statement using numbers and symbols to represent relationships and real-world situations**

EXPECTATION 6.EE.2.b.

Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. For example, describe the expression  $2(8 + 7)$  as a product of two factors; view  $(8 + 7)$  as both a single entity and a sum of two terms.

Correlated Lessons:

**Watch It Grow, Where Germs Lurk Page 84, 89: Objective 7 Students will write, simplify, and evaluate linear and exponential expressions.**

**Watch It Grow, Where Germs Lurk Page Reader:**

**Objective 38 Students know that an expression is a mathematical statement using numbers and symbols to represent relationships and real-world situations**

EXPECTATION 6.EE.2.c.

Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). For example, use the formulas  $V = s^3$  and  $A = 6s^2$  to find the volume and surface area of a cube with sides of length  $s = 1/2$ .

Correlated Lessons:

**Watch It Grow, Where Germs Lurk Page 84, 89:  
Objective 7 Students will write, simplify, and evaluate linear and exponential expressions.**

**Watch It Grow, Where Germs Lurk Page Reader:  
Objective 40 Students understand basic operations (e.g., combining like terms, expanding, substituting for unknowns) on algebraic expressions**

STANDARD 6.EE.3.

Apply the properties of operations to generate equivalent expressions. For example, apply the distributive property to the expression  $3(2 + x)$  to produce the equivalent expression  $6 + 3x$ ; apply the distributive property to the expression  $24x + 18y$  to produce the equivalent expression  $6(4x + 3y)$ ; apply properties of operations to  $y + y + y$  to produce the equivalent expression  $3y$ .

Correlated Lessons:

**Watch It Grow, Where Germs Lurk Page 84, 89:  
Objective 7 Students will write, simplify, and evaluate linear and exponential expressions.**

**Watch It Grow, Where Germs Lurk Page Reader:  
Objective 40 Students understand basic operations (e.g., combining like terms, expanding, substituting**

**for unknowns) on algebraic expressions**

STANDARD 6.EE.4. Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). For example, the expressions  $y + y + y$  and  $3y$  are equivalent because they name the same number regardless of which number  $y$  stands for.

Correlated Lessons:

**Watch It Grow, Where Germs Lurk Page 84, 89:  
Objective 7 Students will write, simplify, and evaluate  
linear and exponential expressions.**

**Watch It Grow, Where Germs Lurk Page Reader:  
Objective 40 Students understand basic operations  
(e.g., combining like terms, expanding, substituting  
for unknowns) on algebraic expressions**

CATEGORY /  
CLUSTER

Reason about and solve one-variable equations and inequalities.

STANDARD 6.EE.5. Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.

Correlated Lessons:

**Land Animals, Sea Creatures Page 108, 113:  
Objective 10 Students will write and solve equations  
and inequalities.**

**Land Animals, Sea Creatures Page Reader: Objective  
41 Students solve linear equations using concrete,  
informal, and formal methods**

**Land Animals, Sea Creatures Page Reader: Objective  
42 Students solve simple inequalities and non-linear  
equations with rational number solutions, using**



**concrete and informal methods**

STANDARD 6.EE.6. Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.

Correlated Lessons:

**Land Animals, Sea Creatures Page 108, 113:  
Objective 10 Students will write and solve equations  
and inequalities.**

**Watch It Grow, Where Germs Lurk Page 84, 89:  
Objective 7 Students will write, simplify, and evaluate  
linear and exponential expressions.**

**Watch It Grow, Where Germs Lurk Page Reader:  
Objective 38 Students know that an expression is a  
mathematical statement using numbers and symbols  
to represent relationships and real-world situations**

**Watch It Grow, Where Germs Lurk, Land Animals,  
Sea Creatures Page Reader: Objective 39 Students  
understand that a variable can be used in many ways**

STANDARD 6.EE.8. Write an inequality of the form  $x > c$  or  $x < c$  to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form  $x > c$  or  $x < c$  have infinitely many solutions; represent solutions of such inequalities on number line diagrams.

Correlated Lessons:

**Land Animals, Sea Creatures Page 108, 113:  
Objective 10 Students will write and solve equations  
and inequalities.**

CATEGORY /  
CLUSTER

Represent and analyze quantitative relationships between dependent and independent variables.

STANDARD 6.EE.9. Use variables to represent two quantities in a real-world

problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation  $d = 65t$  to represent the relationship between distance and time.

Correlated Lessons:

**Land Animals, Sea Creatures Page 108, 113:  
Objective 10 Students will write and solve equations and inequalities.**

STRAND / DOMAIN NY.CC.6.G.

Geometry

CATEGORY /  
CLUSTER

Solve real-world and mathematical problems involving area, surface area, and volume.

STANDARD

6.G.1.

Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.

Correlated Lessons:

**A Sense of Art, Landscape by Design Page 132, 137:  
Objective 13 Students will find the perimeter and area of polygons and circles in mathematical and real-world contexts.**

**A Sense of Art, Landscape by Design Page Reader:  
Objective 43 Students solve problems involving perimeter (circumference) and area of various shapes**

STANDARD

6.G.2.

Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas  $V = lwh$

h and  $V = b h$  to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.

Correlated Lessons:

**A Sense of Art, Landscape by Design, Package Design, Pack It Up Page Reader: Objective 44 Students understand formulas for finding measures (e.g., area, volume, surface area)**

**Package Design, Pack It Up Page 156, 161: Objective 16 Students will find the surface area and volume of rectangular prisms and cylinders.**

STANDARD 6.G.4. Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.

Correlated Lessons:

**Package Design, Pack It Up Page 156, 161: Objective 16 Students will find the surface area and volume of rectangular prisms and cylinders.**

STRAND / DOMAIN NY.CC.6.SP. Statistics and Probability  
CATEGORY / CLUSTER Develop understanding of statistical variability.

STANDARD 6.SP.3. Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.

Correlated Lessons:

**Hurricane Hunters, Tornado Chasers Page 180, 185: Objective 19 Students will learn to use measures of central tendency. They will also learn to use a box plot.**

**Hurricane Hunters, Tornado Chasers Page Reader:**

**Objective 46 Students understand basic characteristics of measures of central tendency (i.e., mean, mode, median)**

**Hurricane Hunters, Tornado Chasers Page Reader: Objective 48 Students understand the basic concepts of center and dispersion of data**

CATEGORY /  
CLUSTER

Summarize and describe distributions.

STANDARD

6.SP.4.

Display numerical data in plots on a number line, including dot plots, histograms, and box plots.

Correlated Lessons:

**Hurricane Hunters, Tornado Chasers, Tonight's Concert, Battle of the Bands Page Reader: Objective 51 Students organize and display data using tables, graphs (e.g., line, circle, bar), frequency distributions, and plots (e.g., box-and-whiskers)**

**Tonight's Concert, Battle of the Bands Page 204, 209: Objective 21 Students will understand how to read and construct statistical graphs.**

STANDARD

6.SP.5.

Summarize numerical data sets in relation to their context, such as by:

EXPECTATION 6.SP.5.c.

Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.

Correlated Lessons:

**Hurricane Hunters, Tornado Chasers Page 180, 185: Objective 19 Students will learn to use measures of central tendency. They will also learn to use a box plot.**

**Hurricane Hunters, Tornado Chasers Page Reader:**

**Objective 46 Students understand basic characteristics of measures of central tendency (i.e., mean, mode, median)**

**Hurricane Hunters, Tornado Chasers Page Reader:  
Objective 48 Students understand the basic concepts of center and dispersion of data**