Core Learning Standards for Mathematics Grade 6

	Expressions and Equations (Mondays)
Write and evaluate numerical expressions involving whole-number exponents.	p. 1 #1 p. 4 #1 p. 7 #2 p. 10 #1 p. 16 #2 p. 19 #1 p. 22 #2 p. 25 #2 p. 31 #1 p. 34 #2, 4 p. 46 #1–2 p. 49 #1 p. 52 #4 p. 55 #1 p. 61 #3 p. 64 #2 p. 67 #3 p. 76 #1–2 p. 82 #1 p. 88 #1
Write, read, and evaluate expressions; identify parts of an expression using mathematical terms.	p. 1 #2 p. 10 #2 p. 13 #1–3 p. 16 #3 p. 19 #3 p. 28 #1, 3 p. 31 #2 p. 37 #1 p. 40 #2, 4 p. 43 #1, 4 p. 46 #4 p. 49 #2 p. 52 #1–2 p. 55 #2–3 p. 58 #4–5 p. 61 #4 p. 64 #3–4 p. 67 #4 p. 70 #1–2, 4 p. 76 #4 p. 79 #1, 3 p. 82 #3 p. 85 #4
Apply properties of operations to generate equivalent expressions.	p. 1 #4 p. 16 #1 p. 19 #4 p. 37 #2 p. 43 #2 p. 46 #4 p. 73 #4 p. 82 #2, 4 p. 85 #3
Identify when two expressions are equivalent.	p. 88 #1
Understand solving an equation or inequality as a process; use substitution.	p. 10 #3 p. 16 #4 p. 22 #3 p. 25 #1, 3 p. 64 #1 p. 67 #2 p. 73 #3
Use variables to represent numbers and write expressions when solving a problem.	p. 61 #1 p. 69 Brain Stretch p. 70 #3 p. 73 #1 p. 79 #4 p. 85 #1
Solve problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p, q and x are all nonnegative rational numbers.	p. 13 #4 p. 22 #1 p. 30 Brain Stretch p. 31 #3 p. 34 #1 p. 40 #1 p. 43 #3 p. 45 Brain Stretch p. 49 #3 p. 52 #3 p. 58 #2 p. 61 #2 p. 66 Brain Stretch p. 67 #1 p. 72 Brain Stretch p. 73 #2 p. 75 Brain Stretch p. 79 #2 p. 88 #4
Write an inequality of the form $x > c$ or $x < c$ to represent a condition; recognize that such inequalities have many solutions; represent solutions on number lines.	p. 10 #4 p. 22 #4 p. 55 #4 p. 76 #3
Use variables to represent two quantities; write an equation to express one quantity in terms of the other quantity; analyze relationships using graphs and tables.	p. 85 #2 p. 88 #2
	The Number System (Tuesdays)
Interpret and compute quotients of fractions, and solve word problems.	p. 22 #2 p. 25 #4 p. 27 Brain Stretch p. 55 #2 p. 64 #5 p. 67 #3 p. 70 #4 p. 82 #4
Fluently divide multi-digit numbers using the standard algorithm.	p. 4 #4 p. 34 #3 p. 46 #4
Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithms.	p. 10 #2 p. 12 Brain Stretch p. 16 #4 p. 28 #2 p. 34 #2 p. 36 Brain Stretch p. 37 #5 p. 42 Brain Stretch p. 43 #4 p. 46 #2–3 p. 52 #3–4 p. 55 #1 p. 61 #2 p. 63 Brain Stretch p. 67 #4 p. 70 #1 p. 73 #5 p. 76 #5 p. 79 #4 p. 85 #4
Find the GCF of two whole numbers less than or equal to 100 and the LCM of two whole numbers less than or equal to 12; use the distributive property to express a sum.	p. 16 #1 p. 19 #4 p. 22 #1 p. 25 #3 p. 28 #4 p. 34 #1 p. 43 #2 p. 64 #2 p. 84 Brain Stretch
Understand that positive and negative numbers describe quantities having opposite directions or values; use positive and negative numbers to represent quantities.	p. 19 #5 p. 22 #3 p. 28 #3 p. 67 #2 p. 82 #3
Understand a rational number as a point on the number line; recognize opposite signs of numbers; find and position integers on number lines and coordinate planes.	p. 34 #4 p. 37 #4 p. 40 #1–2 p. 49 #1–2 p. 58 #3 p. 64 #3 p. 79 #2 p. 85 #1 p. 88 #4

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Understand ordering and absolute value of rational numbers; interpret statements of inequality; write, interpret, and explain statements of order.	p. 22 #4 p. 37 #2 p. 43 #3 p. 55 #3 p. 58 #1 p. 61 #5 p. 70 #2
Solve problems by graphing points in all four quadrants of the coordinate plane.	p. 31 #1–3 p. 58 #5

Geometry (Wednesdays)	
Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing or decomposing into shapes.	p. 65 #1 p. 68 #1 p. 77 #1 p. 80 #3 p. 83 #3 p. 87 Brain Stretch
Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes; apply formulas $V = l\,w\,h$ and $V = b\,h$.	p. 57 Brain Stretch p. 68 #2 p. 71 #2 p. 80 #1 p. 86 #1 p. 89 #2
Draw polygons in the coordinate plane; use coordinates to find lengths.	p. 14 #3 p. 26 #2 p. 35 #3 p. 38 #3 p. 41 #1–2 p. 44 #1–2 p. 47 #1–2 p. 50 #3 p. 51 Brain Stretch p. 53 #1–3 p. 59 #1–3 p. 62 #1 p. 74 #1 p. 77 #2–3 p. 83 #1 p. 86 #2 p. 89 #1
Represent 3-D figures using nets; use nets to find surface area.	p. 23 #4 p. 26 #4 p. 29 #4 p. 35 #4 p. 38 #4 p. 50 #4 p. 56 #1, 4 p. 65 #2–3 p. 80 #2

Ratios and Proportional Relationships (Thursdays)	
Understand the concept of a ratio and use ratio language.	p.2 #3–4 p. 5 #2 p. 8 #3 p. 11 #2 p. 17 #4 p. 20 #4 p. 23 #2 p. 26 #1, 3 p. 29 #1 p. 32 #1 p. 35 #3 p. 38 #2 p. 44 #2 p. 47 #3 p. 53 #3 p. 56 #2 p. 62 #3 p. 65 #3 p. 74 #3 p. 89 #2
Understand the concept of a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$, and use rate language.	p. 5 #3 p. 14 #1, 3 p. 17 #3 p. 20 #3 p. 23 #3 p. 32 #2 p. 35 #1 p. 38 #4 p. 41 #1 p. 44 #1, 4 p. 47 #2 p. 74 #1–2, 4
Use ratio and rate reasoning to solve problems; make and use tables to compare ratios; solve unit rate problems; find a percent of a quantity as a rate per 100; use ratio reasoning to convert unit measurements.	p. 2 #1 p. 5 #1, 4 p. 8 #1–2, 4 p. 11 #1, 3–4 p. 14 #2, 4 p. 17 #1–3 p. 18 Brain Stretch p. 20 #1 p. 23 #1, 4 p. 24 Brain Stretch p. 26 #2, 4 p. 29 #2–4 p. 32 #3–4 p. 33 Brain Stretch p. 35 #2, 4 p. 38 #1 p. 41 #3–4 p. 47 #1, 4 p. 48 Brain Stretch p. 50 #1 p. 53 #1–2, #4 p. 56 #1, 3–4 p. 59 #1, 3–4 p. 60 Brain Stretch p. 62 #1–3 p. 65 #1, 4 p. 68 #1, 3–4 p. 71 #1–2, 4 p. 77 #2–4 p. 80 #1, 3–5 p. 83 #2–4 p. 86 #2–4 p. 89 #2–4

Statistics and Probability (Fridays)	
Recognize a statistical question anticipates variability in the data related to the question and accounts for it in the answers.	p. 18 #1, 5 p. 33 #4 p. 54 #1–2
Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.	p. 6 #1–2 p. 9 #2–3 p. 18 #3 p. 21 #3 p. 24 #2, 5 p. 27 #5 p. 30 #4 p. 36 #2–5 p. 39 #1–2 p. 51 #1–3 p. 81 #1–2
Recognize that a measure of center for a data set summarizes all of its values with a single number, and a measure of variation describes how its values vary with a single number.	p. 42 #1–4
Display data in plots on a number line, including dot plots, histograms, and box plots.	p. 12 #1 p. 33 #1 p. 36 #1 p. 48 #1 p. 60 #1–2 p. 72 #1 p. 78 #1 p. 84 #2, 5
Summarize data sets in relation to their context: report number of observations; describe attributes; give quantitative measures of center and variability; relate choice of measures.	p. 12 #2–5 p. 18 #2 p. 33 #2–3 p. 36 #1–2, 4 p. 48 #2 p. 60 #3 p. 63 #1, 3–6 p. 72 #2–3 p. 75 #1–2 p. 78 #2 p. 84 #1, 3–4

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Student Assessment
Customize page 93 to reflect the standards you are working on. Simply write the standard numbers in the columns across the top.

MONDAY — Patterning and Algebra

1 Use exponents to write the expression.

$6 \times 6 \times 6 \times 6$

2 Solve for *t*.

$3 \times 8 = t + 15$

3 What is the pattern rule?

2, 5, 11, 23, 47, 95

4 Simplify the expression.

$7n + 2n - 5$

TUESDAY — Number Systems and Operations

1 Find the prime factorization of 90.

2 $125 \times 0.1 =$

3 Express the numeral in words.

7,698,125

4 Round 987.192 to the nearest tenth.

5 Write 67% as a decimal.

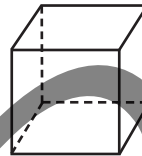**1** How many lines of symmetry?

F

2 Classify this angle as acute, obtuse, straight, or right.
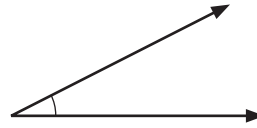
3 Name this shape.

_____
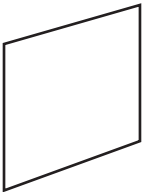
4 How many edges and faces does a cube have?

Edges _____

Faces _____

1 12 weeks = _____ days
Fill in the table to help you.

Weeks	Days
1	
3	
9	
12	

**2** Find the sum in pounds.

128 ounces + 5 pounds =

3 Are these ratios equivalent?
Show how you know.

2:3   6:9

4 Tim planted 6 trees and 4 bushes.
Write as a ratio. Reduce to lowest terms.

Create a line graph using the data from the table to show hockey game attendance at C. L. School. Add any missing labels to the graph.

Game	Attendance
Game 1	100
Game 2	350
Game 3	500
Game 4	550

Hockey Game Attendance

Attendance

50

0

Game 1   Game 2   Game 3   Game 4
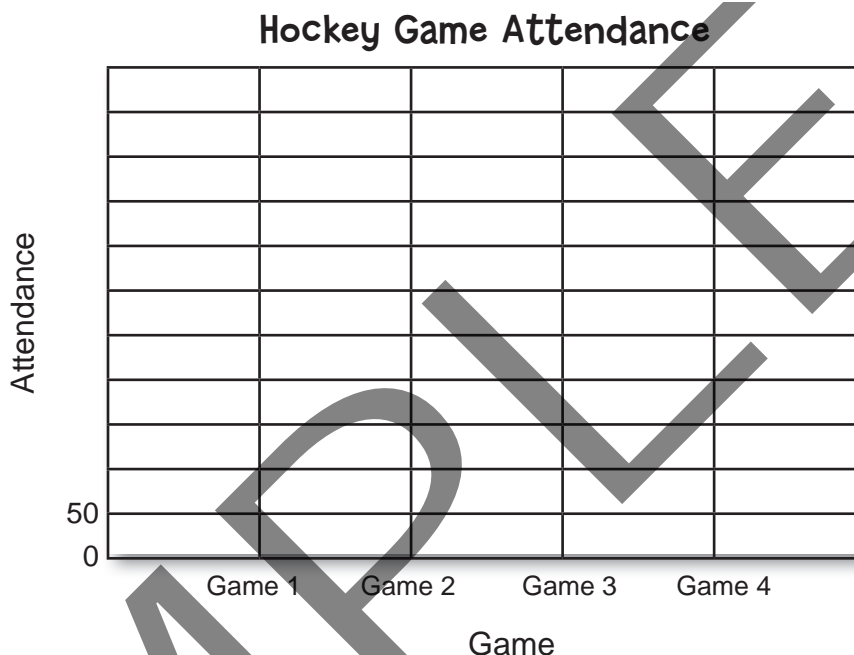
Game

1 Which game had the highest attendance? _____

2 Which game(s) did not have an attendance of at least 350 people? _____

3 How many people in total attended all four games? _____

4 For which game did attendance increase by 150 from the previous game? _____

5 By examining the line graph, what can you conclude about hockey game attendance?

_____

BRAIN STRETCH

George collected $\frac{1}{3}$ of a container of soft drink tabs to recycle. Cathy collected $10\frac{1}{2}$ times as many containers as George. How many containers of tabs did Cathy collect? Simplify your answer.

MONDAY — Patterning and Algebra

1 Simplify the expression.

$9n - 3n + 5$

2 What will be the 8th term in this pattern?

400, 385, 370, 355, 340

3 Write and evaluate the two expressions represented by 7 ± 3.

4 Number the operations according to the order of operations:

___ multiplication and division

___ brackets and exponents

___ addition and subtraction

TUESDAY — Number Systems and Operations

1 Find the prime factorization of 48.

2 What is the value of the underlined digit?

9,3<u>4</u>5,252

3 Write 17.5% as a decimal.

4 Miguel finds a scrapbook that can hold 200 stamps. If Miguel has 2,000 stamps in all, how many scrapbooks will he need to buy for his stamps?

WEDNESDAY — Geometry

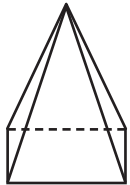**1** Which polygon does not have a line of symmetry?

A. ☐   B. ⬡   C. ▱

2 What type of angle is this?

_____

3 Name this 3-D figure. _____

How many edges, faces, and vertices does it have?

Edges _____

Faces _____

Vertices _____

4 Which 3-D figure can you make using these shapes?

A. cube   B. sphere   C. cylinder

THURSDAY — Ratios and Measurement

1 6 gallons = _____ quarts
Fill in the table to help you.

Quarts	4				
Gallons	1				

2 Is the following a ratio or a rate? Explain how you know. Mix 2 cups of red paint for every 3 cups of yellow paint.

3 Find the unit rate.

18 houses on 3 streets

= _____ houses per street

4 If 3 pairs of socks cost $12, how much do 5 pairs of socks cost? Fill in the table.

Pairs	Cost
1	
2	
3	12
4	
5	

1 Complete the chart.

	Set of Data	Mean	Median	Mode
a)	29, 29, 20, 4, 28			
b)	13, 12, 6, 7, 7			
c)	14, 17, 8, 14, 2			
d)	7, 17, 17, 12, 17			
e)	14, 18, 17, 18, 18			

2 Complete the chart. Round answers to one decimal place where necessary.

	Set of Data	Range	Mean	Median	Mode(s)
a)	20, 11, 20, 11, 18				
b)	3, 17, 6, 17, 19, 16				
c)	23, 21, 21, 20, 20, 20				
d)	3, 2, 5, 5, 5				

3 Choose any set of data from the charts above. What might the numbers represent?
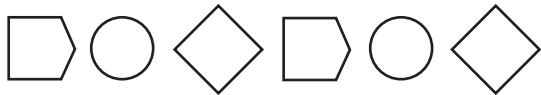
_____

_____

BRAIN STRETCH

On a math test, Sam answered $\frac{2}{3}$ of the questions correctly. Carlos answered $\frac{12}{15}$ of the questions correctly, and Mary answered 83% of the questions correctly.
Who answered the fewest number of questions correctly?

MONDAY — Patterning and Algebra

1 What will be the 9th term in this pattern?

⬠ ◯ ◇ ⬠ ◯ ◇

2 Use exponents to write the expression.

$$12 \times 12 \times 12 \times 12 \times 5 \times 5$$

3 Evaluate the expression.

$$29 + 14 - 3^3 \div 2$$

4 Write and evaluate the two expressions represented by 12 ± 8.

TUESDAY — Number Systems and Operations

1 List the prime numbers between 60 and 80.

2 Lisa attended 75% of 32 school events. How many school events did Lisa **not** attend?

3 Round 56,879.8 to the nearest hundred.

4 $1\dfrac{2}{5} + 3\dfrac{2}{3} =$

1 What type of angle is this?

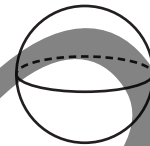**2** What is the sum of the interior angles of a triangle?

3 How many vertices and sides does a rhombus have?

Vertices _____

Sides _____

4 Name this 3-D figure. _____

How many edges, faces, and vertices does it have?

Edges _____

Faces _____

Vertices _____

1 20 cups = _____ quarts
Fill in the table to help you.

Cups	4					
Quarts	1					

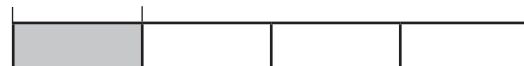**2** Compare the following using >, <, or =.

2 months [   ] 65 days

3 Are these ratios equivalent? Explain why or why not.

1:4   3:10

4 In a survey of 300 people, 25% chose chocolate chip as their favorite ice cream flavor. How many people chose chocolate chip?

_____

0%   25%   100%

? people   300 people