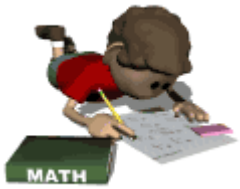
Given to Fifth Graders in June

Going to Sixth Grade

Math Packet

Grade 6

2016



COMMON CORE STATE STANDARDS INITIATIVE - MATHEMATICS GRADE 5

DOMAIN: OPERATIONS and ALGEBRAIC THINKING

OA Standard 1: Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.
OA Standard 2: Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them.
OA Standard 3: Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane.

DOMAIN: NUMBERS and OPERATIONS in BASE TEN

NBT Standard 1: Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.
NBT Standard 2: Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.
NBT Standard 3: Read, write, and compare decimals to thousandths.
NBT Standard 4: Use place value understanding to round decimals to any place.
NBT Standard 5: Fluently multiply multi-digit whole numbers using the standard algorithm.
NBT Standard 6: Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
NBT Standard 7: Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

DOMAIN: NUMBER and OPERATIONS - FRACTIONS

NF Standard 1: Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.
NF Standard 2: Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.
NF Standard 3: Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem.
NF Standard 4: Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.
NF Standard 5: Interpret multiplication as scaling (resizing).
NF Standard 6: Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.
NF Standard 7: Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.

DOMAIN: MEASUREMENT and DATA

MD Standard 1: Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.
MD Standard 2: Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots.
MD Standard 3: Recognize volume as an attribute of solid figures and understand concepts of volume measurement.
MD Standard 4: Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.
MD Standard 5: Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.

DOMAIN: GEOMETRY

G Standard 1: Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., *x*-axis and *x*-coordinate, *y*-axis and *y*-coordinate).
G Standard 2: Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.
G Standard 3: Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.
G Standard 4: Classify two-dimensional figures in a hierarchy based on properties.

SUMMER PACKET QUESTIONS

***DIRECTIONS*:** **Answer each question on the line.**
Do not use a calculator.
Show your work for each question or explain how you found your answer.
Packet is due to your math teacher on *the first day of school (September 1, 2016)*.

Operations and Algebraic Thinking

1. What value for *z* makes this equation true?

$8\times37=(8\times30)+(8\times z)$ _____

2. Joaquin charges $4.00 per hour to baby-sit. What equation could Joaquin use to find the number of hours (*h*) he needs to baby-sit in order to earn $50.00?

_____

3. Fill in the table that represents the values of *x* and *y* such that $y=x+5$?

x	*Y*

Numbers and Operations in Base Ten

4. The ticket prices to a play are $5.00 for teachers and $3.00 for students. How much will it cost for a group of 71 students and 5 teachers to see the play?

_____

5. Tony had a rope 8.35 meters long. He cut off 2.6 meters. How long was the piece of rope that was left?

_____

6. Veronica can type 28 words per minute. At this rate, how many words can Veronica type in 5.5 minutes?

_____

7. 11.3 x 2.7 = _____

8. Write the decimal 0.7 as a fraction: _____

9. 24.6 ÷ 12 = _____

10. Without showing the multiplication, explain the answer to 528 x 1,000.

_____

Numbers and Operations - Fractions

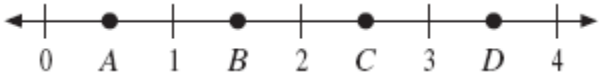
11. It takes Suzanne $\frac{1}{6}$ hour to walk to the playground and $\frac{1}{3}$ hour to walk from the playground to school. How much time does it take Suzanne to walk to the playground and then to school?

_____

12. Jacob needed to solve the problem: **4 ¾ - 2 ½** . He reasoned that the difference would be $\mathbf{2\frac{2}{2}}$**.** Do you agree or disagree? Explain.

_____

13. Which point shows the location of $\frac{3}{2}$ on the number line?



_____

14. Create a story problem which could be solved by using the following equation:

$\frac{2}{3}$ x 15 = 10

_____

15. June thinks that multiplying a whole number by a fraction always gives her a product less than the original whole number. (Example: 5 x $\frac{1}{2}$ = $2\frac{1}{2}$) Is June correct? Explain.

_____

16. Write the equation you would need to use to solve the following problem:
Tony's sunflower plant was 18 cm tall. A week later he measured it and it was 1 $\frac{1}{2}$ times taller. How tall is it now?

_____

17. I have $\frac{1}{2}$ lb of chocolate. If I share this chocolate with 2 other people, how much will each of us get?

_____

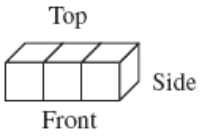
Measurement and Data

18. How many centimeters are there in 5 meters?

_____

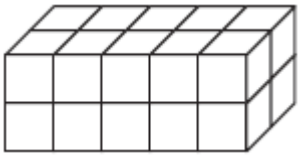
19. Draw a number line from 0 to 3. Place an "X" at each one-half interval.

20. The picture below is a front view of a figure made of 3 small cubes.



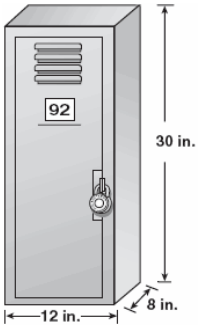
Draw a picture of a side view of the figure _____

21. What is the volume of this solid figure made with cubes if each cube is 1 square unit?



_____

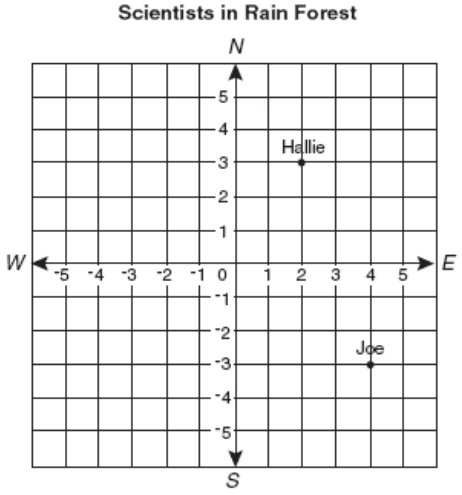
22. What is the volume, in cubic inches, of the school locker below?



_____

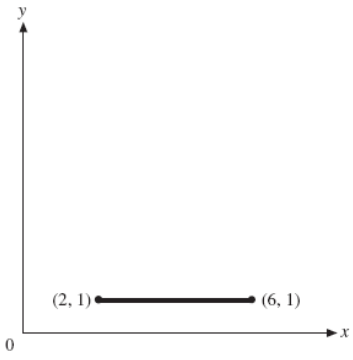
Geometry

23. The map below shows the starting positions of two scientists studying plants in a rain forest.



Which ordered pair names Joe's location? _____

24. Look at the line segment shown below.



What is the length of the line segment? _____

25. What kind of a triangle always has 3 acute angles and 3 sides the same length?

_____

26. Classify a square in as many ways as possible.

_____

Computation - Division

27. Show all work for the problem 1,218 divided by 14.

28. Show all work for the problem 197 ÷ 8.

Need Help/More Practice?

Please visit the following websites for tutorial help on any of the domains or standards covered in this packet. You can also get more practice of the skills on these websites. *Note: You can also use these sites to strengthen your basic multiplication fact skills.

www.ixl.com
www.aaamath.com
www.shodor.org/interactivate/activities
www.figurethis.org/challenges/math_index.htm
www.mathplayground.com
http://nlvm.usu.edu/en/nav/vlibrary.html
www.fractionbars.com
www.mrnussbaum.com
www.coolmath4kids.com
www.math-drills.com
www.khanacademy.org
www.mobymax.com