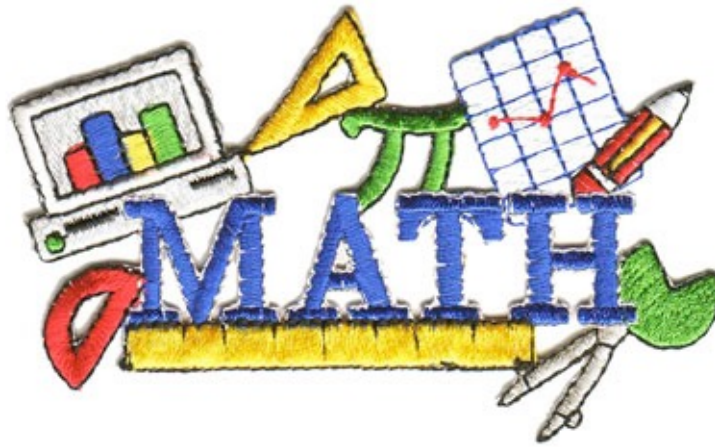# 6th Grade Math

Benchmark 1

Parent Handbook

This handbook will help your child review material learned this quarter, and will help them prepare for their first Benchmark Test. Please allow your child to work independently through the material, and then you can check their work using the answer key in the back of the handbook. If you have any questions or concerns about this material, please contact your child's teacher. Thank you for your support.

Sixth Grade Benchmark #1
Math Essential Standards

Learning Objective #1:

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

Practice:

1. Find the difference: 3.05 - 1.789
     a. 2.279
     b. 1.261
     c. 1.484
     d. 2.379

2. Estimate the quotient: 30.56 ÷ 6.2
     a. 5
     b. 6
     c. 24
     d. 180

3. Find the product: .03 x 1.25
     a. 0.00375
     b. 37.5
     c. 0.375
     d. 0.0375

4. Write an equation and solve for the sum of 15 with 7 tenths and 2 with 3 hundredths.

     Equation: _____

     Solution: _____

Learning Objective # 2:

"Use previous understanding of factors to find the greatest common factor and the least common multiple."

Practice:

5. Find the GCF & LCM of 24 and 60.
      a. 1 and 12
      b. 12 and 120
      c. 24 and 60
      d. 3 and 240

6. What is the prime factorization of 120?
      a. $2^3 \cdot 3 \cdot 5$
      b. $2^2 \cdot 5 \cdot 6$
      c. $2^3 \cdot 3 \cdot 6$
      d. $2^3 \cdot 3 \cdot 5 \cdot 6$

7. Use the distributive property to express the following sum:
      24 + 84

      a. (4 x 6) - (4 x 21)
      b.(2 x 12) + (7 x 12)
      c. 12(2 + 7)
      d. 84 + 24

8. In preparation for a party, Dolores is putting cookies on serving platters. She has 240 chocolate chip cookies, 96 sugar cookies, and 120 peanut butter cookies. If she wants to serve identical platters with no sugar cookies left over, what is the greatest number of platters she can serve?

_____

Learning Objective #3:

"Understand the concept of a ratio as comparing two quantities multiplicatively or joining/composing the two quantities in a way that preserves a multiplicative relationship. Use ratio language to describe a ratio relationship between two quantities."

Practice:

Use the following information to answer questions 16 - 18.

A bag of M&Ms has 10 yellow candies, 8 green candies, 5 blue candies, 12 brown candies, 10 red candies, and 5 orange candies.

9. What is the ratio of yellow candies to all candies?
    a. 5 : 1
    b. 1 : 9
    c. 1 : 5
    d. 10 : 50

10. What is the ratio of red candies to orange candies?
    a. 1: 2
    b. 10 : 5
    c. 5 : 10
    d. 2 : 1

11. What is the ration of brown candies to green candies?
    a. 8 : 12
    b. 12 : 8
    c. 3 : 2
    d. 2 : 3

12. There are 42 cars parked in the parking lots. The parking lot is not full to capacity. There are 12 parking spaces that are empty. What is the ratio of available parking spaces to parked cars?

    _____

Learning Objective #4:

"Understand the concept of a unit rate a/b associated with a ratio a:b with b ≠ 0, and use rate language in the context of a ratio relationship."

Practice:

13. If 5 pounds of apples cost $3.95, what is the unit price?

    a. 79¢

    b. 99¢

    c. 50¢

    d. 89¢

14. Last year, the Smith family spent $41.70 to feed their family of six for a special birthday dinner. This year the dinner cost $76.45. Assuming the cost per person remained constant, choose the correct ratio relationship to determine how many people, p, the Smith family fed this year.

    a. $\dfrac{\$41.70}{\$76.45} = \dfrac{p}{6\,people}$

    b. $\dfrac{\$41.70}{\$76.45} = \dfrac{6\,people}{p}$

    c. $\dfrac{\$76.45}{\$41.70} = \dfrac{6\,people}{p}$

    d. $(\$41.70)(\$76.45) = (6\,people)(p)$

15. Maria can swim 100 meters in 1 minute 40 seconds. As long as her swimming speed remains constant, how fast could she swim 250-meter race?

_____

Learning Objective #5:
"Use ratio and rate reasoning to solve mathematical problems and problems in real-world context."

Practice:

16. If 12 is 30% of the value, what is the value?
      a. 250
      b. 400
      c. 40
      d. 36

17. If 15 is 40% of the value, what is the value?
      a. 6
      b. 60
      c. 30
      d. 37.5

18. Using the information in the table below, find the number of tablespoons in 48 teaspoons?

Teaspoons	3	9	15	30	39	48
Tablespoons	1	3	5	10	13	?

      a. 16
      b. 12
      c. 15
      d. 18

19. Find the ratio of fish (F) to snails (S). If the ratio remains the same, how many fish will there be if there are 70 snails?
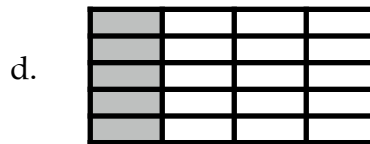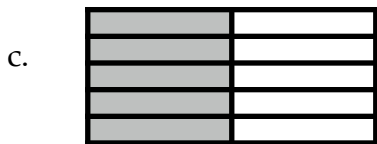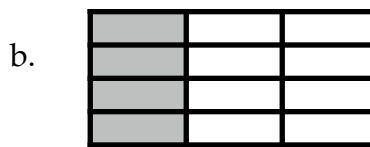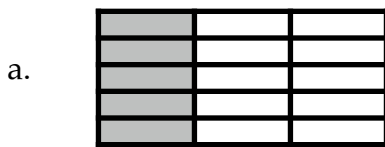
F F F F S S S S

      a. 60
      b. 56
      c. 45
      d. 88

Learning Objective #6:

"Interpret and compute quotients of fractions to solve mathematical problems and problems in real-world context involving division of fractions by fractions using visual fraction models and equations to represent the problem."

Practice:

20. Which model represents the division problem: $\dfrac{1}{3} \div 5$

a.

b.

c.

d.

21. Six people will share 2/3 of a cake. How much of the cake will each person get?

    a. 4   b. $\dfrac{1}{4}$

    c. $\dfrac{1}{9}$ d. 9

22. If you have 3/4 of a yard of ribbon and want to make 6 bows, how much ribbon can you use for each bow?

    a. 4   b. 8

    c. $\dfrac{1}{8}$ d. $\dfrac{1}{4}$

23. How much rice will each person get if 4 people share 1/2 lb of rice equally?

_____

Benchmark 1 Essential Math Vocabulary

✦ **sum -** the answer to an addition problem.

✦ **difference -** the answer to a subtraction problem.

✦ **product -** the answer to a multiplication problem.

✦ **quotient** - the answer to a division problem.

✦ **fraction -** a number in the form a/b, where b is not zero.

✦ **decimal** - a place value number system based on groupings by powers of ten.

✦ **estimate** - a close guess of the actual value, with some thought or calculation involved.

✦ **place value** - the value of where the digit is in the number.

✦ **justify** - to show or prove a solution to be right or reasonable.

✦ **LCM** - the smallest positive number that is a multiple of two or more numbers; **L**east **C**ommon **M**ulitple

✦ **GCF** - the highest number that divides exactly into two or more numbers; **G**reatest **C**ommon **F**actor.

✦ **factors** - numbers you can multiply together to get another number.

✦ **prime factorization** - finding the factors of a number that are all prime.

✦ **ratio** - a comparison of two quantities by division that can be expressed as a to b, a/b, or a:b.

✦ **percent** a ratio that compares a number to 100; (%).

✦ **simplify** - to reduce (an equation, fraction, etc) to a simpler form by cancellation of common factors, regrouping of terms in the same variable, etc.

✦ **proportion** - the statement of equality between two ratios.

✦ **unit rate** - is the ratio of two measurements in which the second term or quantity is one. (e.g., 30 miles per 1 gallon, 6 feet per 1 second).

✦ **diagram** - a graph, chart, drawing or plan that explains something by showing how the parts relate to each other.

✦ **model** - a copy that is made to show and analyze how a real-world situation works using mathematical concepts.

Math ANSWER KEY

1. B
2. A
3. D
4. 15.7 + 2.03 = 17.73
5. B
6. A
7. C
8. 24 platters
9. C
10. D
11. C
12. 2 : 7
13. A
14. B
15. 4 min 10 sec
16. C
17. D
18. A
19. B
20. A
21. C
22. C
23. 1/8 lb