5th Grade Chapter 2 – Multiplying Whole Numbers and Decimals

Multiple Choice
Identify the letter of the choice that best completes the statement or answers the question.

1. A playhouse is putting on a production of *Show Boat*. The following table shows the number of sections of seats they have, the number of seats in each section, and the price for each seat. The producers need to know how much money they would make if they sold a ticket for each seat in the playhouse. Which is the most reasonable estimate?

    PLAYHOUSE SEATING

Sections	2
Seats per Section	87
Price per Seat	$49

    A. $90,000   **B.** $9,000   **C.** $1,380   **D.** $900

2. Every day a toy company has 19 people each put 37 bicycles together. The company needs to know how many bicycles they would put together over a period of 57 days. Which is the most reasonable estimate?

    A. 480,000 bicycles **B.** 48,000 bicycles **C.** 4,800 bicycles   **D.** 1,130 bicycles

3. A soccer coach wants to buy 10 new balls for the soccer team to use during practice. Each ball costs $14. What is the total amount of money the coach will need to buy the balls?
    A. $104   **C.** $140
    B. $24   **D.** $180

4. The student drama club is presenting a play for the community. The following table shows the numbers of times they will perform the play, the number of seats they have for each show, and the price for each seat. The director of the club wants to know how much money they would make in all if they filled all of the seats for each performance. Which is the most reasonable estimate?

Number of performances	3
Number of seats	58
Price per seat	$12

   **A.** $600   **C.** $3,600
    B. $1,800   **D.** $2,400

5. A furniture company has 21 employees. Each employee can assemble 9 tables in a day. The boss wants to know how many tables they can assemble in 62 days. Which is the most reasonable estimate?
  A. 1,200 tables   **C.** 600 tables
  B. 90 tables   **D.** 12,000 tables

6. A ride at an amusement park has 18 cars. If each car holds 12 people, what is the total number of people the ride can hold?
  A. 206 people   **C.** 54 people
  B. 216 people   **D.** 37 people

7. A sporting goods store ordered 4 crates of baseballs. If each crate holds 144 baseballs, what is the total number of baseballs in the shipment?
  A. 166 baseballs   **C.** 466 baseballs
  B. 432 baseballs   **D.** 576 baseballs

8. The speed limit on a highway is 65 miles per hour. At this speed, how many miles would a car travel in 3 hours?
  A. 195 miles   **C.** 95 miles
  B. 33 miles   **D.** 185 miles

9. A librarian has to unpack boxes for a book order just received. There are 12 boxes with 54 books in each box. How many books did the librarian receive?
  A. 162 books   **C.** 648 books
  B. 108 books   **D.** 540 books

10. Horatio collected 12.8 pounds of food for a food drive. His school collected 1,000 times more than Horatio collected. How many pounds of food did the school collect?
  A. 128,000 pounds   **C.** 1,280 pounds
  B. 12,800 pounds   **D.** 128 pounds

11. An employee of a bike shop is moving 23 boxes containing bikes. Each box weighs 24.7 pounds. What is the total weight of the boxes being moved?
  A. 4,461 pounds   **C.** 446.1 pounds
 **B.** 568.1 pounds   **D.** 5,681 pounds

12. The Arizona Woodpecker weighs 1.6 ounces. The Brown Pelican weighs 82 times as much as the Arizona Woodpecker. How much does the Brown Pelican weigh?

    A. 1,202 ounces   **C.** 120.2 ounces

   **B.** 1,312 ounces   **D.** 131.2 ounces

Short Answer

13. A school needs to buy 90 new computers as shown below. What is the total amount of money the school will need to buy the computers?


$ 700
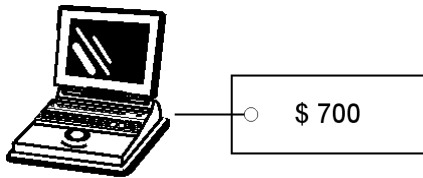
14. A school supply store sells pencils in packages of 5. In their supply room they have 2 boxes with 40 packages of pencils in each. How many pencils are in the supply room?

15. A certain activity burns 203 calories in one hour. Use the Distributive Property and mental math. What is the total calories burned in 8 hours?

16. Mrs. Roberts teaches a total of 53 students. Each student writes 7 papers for her class during the year. Use the Distributive Property and mental math. What is the total number of papers that will be written for Mrs. Roberts in one year?

17. A train has 59 cars. If each car holds 23 people, what is the total number of people the train can hold?
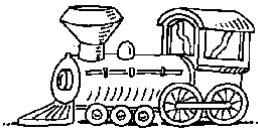
18. A bookstore ordered 6 crates of books. If each crate holds 445 books, what is the total number of books in the shipment?
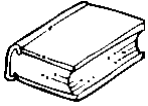
19. Annie is taking a class to learn how to speak German. For each vocabulary test, she has to learn 26 new words. If she has 29 tests over the year, what is the total number of words she has to learn?

20. Every week Brent puts his allowance of $12 into a jar. After 52 weeks, how much money will he have in his jar?

21. It takes Lydia 100 times longer to run 1 mile than 40 yards. If it takes her 5.662 seconds to run 40 yards, how long will it take Lydia to run 1 mile?

22. Elly collected 4.15 pounds of aluminum cans. Her town collected 1,000 times more than Elly collected. How many pounds of cans did the town collect?

23. A truck is transporting 50 containers like the one shown. What is the total weight the truck is transporting?

41.7 pounds
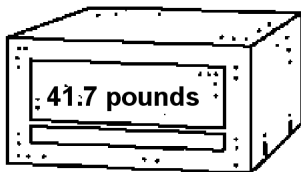
24. A theatre has 56 seats in one row. If each seat is 2.88 feet wide, what is the length of the entire row of seats?

Other

25. **Theatre Seating**   A theater has 58 rows with 26 seats in each row.

    Part A   Mitchell estimated the number of seats in the theater by using this mathematical sentence, $60 \times 30 = 1,800$.

    Is this estimate GREATER or LESS than the actual number of seats? _____

    On the lines below, explain how you know this without finding the actual answer.

    _____

    _____

    Part B   Paella estimated the number of seats in the theater by using this mathematical sentence, $50 \times 20 = 1,000$.

    Is this estimate GREATER or LESS than the actual number of seats? _____

    On the lines below, explain how you know this without finding the actual answer.

    _____

    _____

    Part C   What is the actual number of seats?

Show All Work
Answer _____ seats

5th Grade Chapter 2 – Multiplying Whole Numbers and Decimals
Answer Section

MULTIPLE CHOICE

1. ANS: B   REF: 0202 Lesson 2-2: Estimating Products
   OBJ: Use rounding and compatible numbers to estimate products of whole numbers¸ and identify estimates as overestimates or underestimates.
   TOP: Intervention G56: Estimating Products, NCTM 3-5: Num.3.3
   KEY: multiplication, estimation, whole numbers, Theatre

2. ANS: B   REF: 0202 Lesson 2-2: Estimating Products
   OBJ: Use rounding and compatible numbers to estimate products of whole numbers¸ and identify estimates as overestimates or underestimates.
   TOP: Intervention G56: Estimating Products, NCTM 3-5: Num.3.3
   KEY: multiplication, estimation, whole numbers

3. ANS: C   REF: 0201 Lesson 2-1: Multiplication Patterns
   OBJ: Mentally compute products of whole numbers using patterns and multiplication properties.
   STO: N.FL.05.04
   TOP: Intervention G63: Mental Math: Multiplication Patterns Using 10¸ 100¸ and 1¸000¸
   KEY: multiplication, mental math, patterns, whole numbers, money

4. ANS: B   REF: 0202 Lesson 2-2: Estimating Products
   OBJ: Use rounding and compatible numbers to estimate products of whole numbers¸ and identify estimates as overestimates or underestimates.
   TOP: Intervention G56: Estimating Products, NCTM 3-5: Num.3.3
   KEY: multiplication, estimation, whole numbers, money

5. ANS: D   REF: 0202 Lesson 2-2: Estimating Products
   OBJ: Use rounding and compatible numbers to estimate products of whole numbers¸ and identify estimates as overestimates or underestimates.
   TOP: Intervention G56: Estimating Products, NCTM 3-5: Num.3.3
   KEY: multiplication, estimation, whole numbers

6. ANS: B   REF: 0204 Lesson 2-4: Multiplying Whole Numbers
   OBJ: Use the standard algorithm to multiply numbers by one- and two-digit numbers.
   STO: N.FL.05.04
   TOP: Intervention G59: Multiplying Greater Numbers, NCTM 3-5: Num.3.2, NCTM 3-5: Num.3.3
   KEY: multiplication, whole numbers

7. ANS: D   REF: 0204 Lesson 2-4: Multiplying Whole Numbers
   OBJ: Use the standard algorithm to multiply numbers by one- and two-digit numbers.
   STO: N.FL.05.04
   TOP: Intervention G59: Multiplying Greater Numbers, NCTM 3-5: Num.3.2, NCTM 3-5: Num.3.3
   KEY: multiplication, whole numbers

8. ANS: A   REF: 0204 Lesson 2-4: Multiplying Whole Numbers
   OBJ: Use the standard algorithm to multiply numbers by one- and two-digit numbers.
   STO: N.FL.05.04
   TOP: Intervention G59: Multiplying Greater Numbers, NCTM 3-5: Num.3.2, NCTM 3-5: Num.3.3
   KEY: multiplication, whole numbers

9. ANS: C   REF: 0205 Lesson 2-5: Choose a Computation Method
     OBJ: For a variety of problems, state the computation method to be used and add or subtract using that method.   STO: N.FL.05.04
     TOP: Intervention G60: Choose a Computation Method, NCTM 3-5: Num.3.2, NCTM 3-5: Num.3.6
     KEY: multiplication, whole numbers
10. ANS: B   REF: 0207 Lesson 2-7: Decimal Patterns
     OBJ: Mentally multiply numbers of up to three places by numbers of up to two places.
     STO: N.MR.05.15
     TOP: Intervention I18: Multiplying Decimals by 10, 100, or 1,000, NCTM 3-5: Alg.1.1
     KEY: multiplication, decimals, patterns, mental math
11. ANS: B   REF: 0209 Lesson 2-9: Multiplying Whole Numbers and Decimals
     OBJ: Use partial products and the standard algorithm to multiply whole numbers by decimals.
     STO: N.MR.05.17   TOP: Intervention I20: Multiplying Decimals by Whole Numbers
     KEY: multiplication, whole numbers, decimals
12. ANS: D   REF: 0209 Lesson 2-9: Multiplying Whole Numbers and Decimals
     OBJ: Use partial products and the standard algorithm to multiply whole numbers by decimals.
     STO: N.MR.05.17   TOP: Intervention I20: Multiplying Decimals by Whole Numbers
     KEY: multiplication, whole numbers, decimals

SHORT ANSWER

13. ANS:
$63,000

     REF: 0201 Lesson 2-1: Multiplication Patterns
     OBJ: Mentally compute products of whole numbers using patterns and multiplication properties.
     STO: N.FL.05.04
     TOP: Intervention G63: Mental Math: Multiplication Patterns Using 10, 100, and 1,000, NCTM 3-5: Alg.1.1, NCTM 3-5: Alg.2.1, NCTM 3-5: Num.2.4, NCTM 3-5: Num.3.1, NCTM 3-5: Num.3.2
     KEY: multiplication, mental math, patterns, whole numbers, Economics
14. ANS:
400 pencils

     REF: 0201 Lesson 2-1: Multiplication Patterns
     OBJ: Mentally compute products of whole numbers using patterns and multiplication properties.
     STO: N.FL.05.04
     TOP: Intervention G63: Mental Math: Multiplication Patterns Using 10, 100, and 1,000, NCTM 3-5: Alg.1.1, NCTM 3-5: Alg.2.1, NCTM 3-5: Num.2.4, NCTM 3-5: Num.3.1, NCTM 3-5: Num.3.2
     KEY: multiplication, mental math, patterns, whole numbers
15. ANS:
1,624 calories

     REF: 0203 Lesson 2-3: Mental Math: Using the Distributive Property
     OBJ: Mentally multiply numbers of up to three places by numbers of up to two places.
     STO: N.FL.05.04
     TOP: Intervention G64: Multiplication Properties, NCTM 3-5: Alg.2.1, NCTM 3-5: Num.2.4, NCTM 3-5: Num.3.2   KEY: algebra, multiplication, mental math, whole numbers, Health Education

16. ANS:
371 papers

REF: 0203 Lesson 2-3: Mental Math: Using the Distributive Property
OBJ: Mentally multiply numbers of up to three places by numbers of up to two places.
STO: N.FL.05.04
TOP: Intervention G64: Multiplication Properties, NCTM 3-5: Alg.2.1, NCTM 3-5: Num.2.4, NCTM
3-5: Num.3.2   KEY: algebra, multiplication, mental math, whole numbers

17. ANS:
1,357 people

REF: 0204 Lesson 2-4: Multiplying Whole Numbers
OBJ: Use the standard algorithm to multiply numbers by one- and two-digit numbers.
STO: N.FL.05.04
TOP: Intervention G59: Multiplying Greater Numbers, NCTM 3-5: Num.3.2, NCTM 3-5: Num.3.3
KEY: multiplication, whole numbers

18. ANS:
2,670 books

REF: 0204 Lesson 2-4: Multiplying Whole Numbers
OBJ: Use the standard algorithm to multiply numbers by one- and two-digit numbers.
STO: N.FL.05.04
TOP: Intervention G59: Multiplying Greater Numbers, NCTM 3-5: Num.3.2, NCTM 3-5: Num.3.3
KEY: multiplication, whole numbers

19. ANS:
754 words

REF: 0205 Lesson 2-5: Choose a Computation Method
OBJ: For a variety of problems, state the computation method to be used and add or subtract using that
method.   STO: N.FL.05.04
TOP: Intervention G60: Choose a Computation Method, NCTM 3-5: Num.3.2, NCTM 3-5: Num.3.6
KEY: multiplication, whole numbers, Foreign Language

20. ANS:
$624

REF: 0205 Lesson 2-5: Choose a Computation Method
OBJ: For a variety of problems, state the computation method to be used and add or subtract using that
method.   STO: N.FL.05.04
TOP: Intervention G60: Choose a Computation Method, NCTM 3-5: Num.3.2, NCTM 3-5: Num.3.6
KEY: multiplication, whole numbers

21. ANS:
566.2 seconds

REF: 0207 Lesson 2-7: Decimal Patterns   OBJ: Mentally multiply any decimal by a power of ten.
STO: N.MR.05.15
TOP: Intervention I18: Multiplying Decimals by 10, 100, or 1,000, NCTM 3-5: Alg.1.1
KEY: multiplication, decimals, patterns, mental math, Physical Education

22. ANS:
4,150 pounds

REF: 0207 Lesson 2-7: Decimal Patterns   OBJ: Mentally multiply any decimal by a power of ten.
STO: N.MR.05.15
TOP: Intervention I18: Multiplying Decimals by 10¸ 100¸ or 1¸000, NCTM 3-5: Alg.1.1
KEY: multiplication, decimals, patterns, mental math

23. ANS:
2,085 pounds

REF: 0209 Lesson 2-9: Multiplying Whole Numbers and Decimals
OBJ: Use partial products and the standard algorithm to multiply whole numbers by decimals.
STO: N.MR.05.17   TOP: Intervention I20: Multiplying Decimals by Whole Numbers
KEY: multiplication, whole numbers, decimals

24. ANS:
161.28 feet

REF: 0209 Lesson 2-9: Multiplying Whole Numbers and Decimals
OBJ: Use partial products and the standard algorithm to multiply whole numbers by decimals.
STO: N.MR.05.17   TOP: Intervention I20: Multiplying Decimals by Whole Numbers
KEY: multiplication, whole numbers, decimals, Theatre

OTHER

25. ANS:
Part A: greater; *Sample Explanation:* Mitchell overestimated both numbers, so his estimate will be greater than the number of actual seats.
Part B: less; *Sample Explanation:* Paella underestimated both numbers, so her estimate will be less than the number of actual seats.
Part C: 1,508; *Sample Work:* $58 \times 26 = 1,508$

RUBRIC	
4 points	All answers are correct AND the explanations are reasonable.
3 points	The student had an arithmetic error in finding the actual number of seats, but all other answers are correct AND the explanations are reasonable.
2 points	Answers to at least two parts are correct.
1 point	Responses show limited understanding.

REF: 0202 Lesson 2-2: Estimating Products
OBJ: Use rounding and compatible numbers to estimate products of whole numbers¸ and identify estimates as overestimates or underestimates.
TOP: Intervention G56: Estimating Products, NCTM 3-5: Num.3.3
KEY: estimation, multiplication, 4-point rubric, writing in math