CRAVEN
COMMUNITY COLLEGE

TABE Math-E

PAXEN

Unit-3 Multiply and Divide Whole Numbers

Lesson 13
Multiplication Is Repeated Addition

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Some graphics may not have copied well during the scan process.

Math-E - Lesson 13 – Multiplication

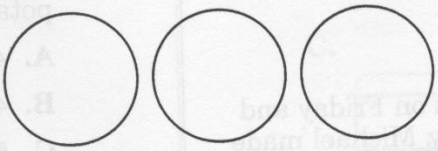
Lesson 13 Multiplication as Repeated Addition

3.OA.1 – Medium, 2.NBT.2 – Medium

You can multiply by skip counting equal groups. When you skip count, you count by a number other than one. For example, you may count by 2s, 5s, 10s, and so on. Multiplying 5×4 is the same as adding $5 + 5 + 5 + 5$. The result is 20 in both cases.

Example **Hannah buys 3 bunches of bananas. There are 4 bananas in each bunch. How many bananas in all?**

1) Create equal groups to represent the problem. Draw the number of groups. There are 3 bunches of bananas.



2) Draw the number of objects in each group. There are 4 bananas in each bunch.

3) Skip count using addition to find the total number of objects.

4 8 12

There are 12 bananas in all.

Test Example

1. Grant runs 5 miles each day on Monday, Wednesday, and Friday. How many miles does he run in all three days?

   A. 5 miles
   B. 7 miles
   C. 10 miles
   D. 15 miles

1. **D** Grant runs 3 days. 5 miles + 5 miles + 5 miles = 15 miles

Strategy

Sketch equal groups to help you. Draw circles to represent each group. Then draw dots to represent the objects in each group.

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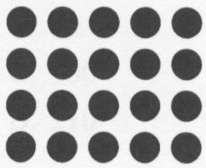
Practice

Read each question. Select the correct answer.

1 Brady works 8 hours each day. He works 6 days each week. How many hours does he work in a week?

A. 48 hours
B. 40 hours
C. 13 hours
D. 5 hours

2 An array is an arrangement of numbers or objects in rows and columns. Which story about equal groups could describe the array?



A. There are 4 shelves. Each shelf has 4 towels.
B. There are 4 shelves. Each shelf has 5 towels.
C. There are 5 shelves. Each shelf has 5 towels.
D. There are 4 shelves. Each shelf has 9 towels.

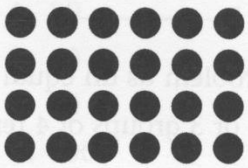
3 Janae bakes 7 batches of cinnamon rolls. There are 6 cinnamon rolls in each batch. How many cinnamon rolls does Janae bake?

A. 6 cinnamon rolls
B. 13 cinnamon rolls
C. 42 cinnamon rolls
D. 49 cinnamon rolls

4 Lane completes 3 practice tests. Each test has 9 questions. Which of the following shows how to use repeated addition to find the total number of questions Lane answers?

A. $9 + 9 + 9 = 27$ questions
B. $3 + 3 + 3 = 9$ questions
C. $9 + 9 + 9 + 9 + 9 + 9 + 9 + 9 + 9 = 81$ questions
D. $3 + 9 = 12$ questions

5 Which of the following shows how to use repeated addition to find the total number of dots in the array?



A. $4 + 4 + 4 + 4 + 4$
B. $6 + 4$
C. $6 + 6 + 6 + 6$
D. $4 + 6$

6 There are 5 videos in a lesson. Each video is 7 minutes. Which of the following shows how to use repeated addition to find how many minutes of video are in the lesson?

A. $5 + 5 + 5 + 5 + 5$
B. $7 + 7 + 7 + 7$
C. $5 + 5 + 5 + 5 + 5 + 5$
D. $7 + 7 + 7 + 7 + 7$

7 Which multiplication problem represents the following repeated addition problem?

$10 + 10 + 10$

A. 10×10
B. 3×3
C. 3×10
D. 10×4

8 Which multiplication problem represents the following repeated addition problem?

$4 + 4 + 4 + 4 + 4 + 4 + 4$

A. 4×5
B. 4×6
C. 4×7
D. 4×8

Math-E - Lesson 13 – Multiplication

Lesson 13 Multiplication as Repeated Addition

(3.OA.1, 2.NBT.2)

1. A. $8 \times 6 = 48$, or $8 + 8 + 8 + 8 + 8 + 8 = 48$. Brady works 48 hours in a week.
2. B. The array can represent 4 shelves with 5 towels on each shelf because there are 4 rows in the array and 5 dots in each row.
3. C. Janae bakes 42 cinnamon rolls in all. Multiply 7×6 to get 42. To solve using repeated addition, add $6 + 6 + 6 + 6 + 6 + 6 + 6 = 42$.
4. A. Because there are 3 tests that each have 9 questions, there are 3 equal groups of 9. You can solve the problem by adding $9 + 9 + 9 = 27$.
5. C. There are 4 rows that each have 6 dots. Each row represents an equal group of 6. You can find the total number of dots by adding $6 + 6 + 6 + 6 = 24$.
6. D. Because there are 5 videos that are each 7 minutes long, there are 5 equal groups of 7. You can solve the problem by using $7 + 7 + 7 + 7 + 7 = 35$.
7. C. There are 3 equal groups of 10, so $10 + 10 + 10$ can be represented as 3×10.
8. C. There are 7 equal groups of 4, which can be represented as 7×4 or 4×7.

Math-E - Practice 13 - Multiplication

Practice 13 Multiplication as Repeated Addition

3.OA.1 – Medium, 2.NBT.2 – Medium

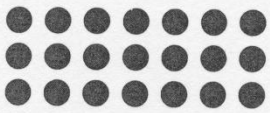
1. Javier buys two containers of hooks. Each container has eight hooks. How many hooks does Javier buy?

   A. 2 hooks
   B. 8 hooks
   C. 10 hooks
   D. 16 hooks

2. Each time Todd makes a gift basket, he adds a bundle of five cinnamon sticks. He makes nine gift baskets. Which two methods use repeated addition to find the total number of cinnamon sticks Todd uses?

   A. Draw a 5 by 5 array.
   B. Draw a 5 by 9 array.
   C. Draw a 9 by 9 array.
   D. Skip count by 5 five times.
   E. Skip count by 5 nine times.
   F. Skip count by 9 nine times.

3. Which expression represents the array?



   A. 3 + 3 + 3
   B. 7 + 7 + 7
   C. 3 + 3 + 3 + 3
   D. 7 + 3 + 7 + 3

4. What is the value of 9 groups of 3?

   A. 3
   B. 6
   C. 12
   D. 27

5. At an archery tournament, Shaquille shoots six arrows each round. He shoots seven rounds during the tournament. How many arrows does Shaquille shoot?

   A. 42 arrows
   B. 60 arrows
   C. 70 arrows
   D. 100 arrows

6. Christina sees four patients. She gives each patient two samples of toothpaste. How many samples does Christina distribute?

   Which equation uses repeated addition to represent the problem?

   A. 2 + 4 = 6 samples
   B. 4 + 2 + 2 = 8 samples
   C. 2 + 2 + 2 + 2 = 8 samples
   D. 4 + 4 + 4 + 4 = 16 samples

7. Which sequence of numbers represents skip counting by 100?

   A. 10, 20, 30, 40
   B. 50, 55, 60, 65
   C. 200, 250, 300, 350
   D. 600, 700, 800, 900

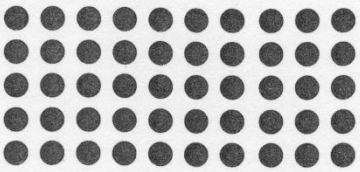
8. Which multiplication problem represents the following repeated addition problem?

   8 + 8 + 8 + 8 + 8

   A. 5 × 8
   B. 8 × 8
   C. 5 × 5
   D. 8 × 4

Math-E - Practice 13 Multiplication

Use the array for question 9.



9 **Part A**

Which description represents the array?

A. 5 groups of 5

B. 5 groups of 20

C. 10 groups of 5

D. 10 groups of 10

Part B

Which multiplication problem represents the array?

A. 5×5

B. 5×10

C. 20×5

D. 10×10

10 A movie is shown at the local theater four times a day for 12 days. How many times does the theater play the movie?

A. 8 times

B. 16 times

C. 24 times

D. 48 times

11 Asmita's union deducts $6 from each paycheck. She totals her union dues from five paychecks. Which expression represents Asmita's total union dues?

A. $6 + 6 + 6 + 6 + 6$

B. $5 + 5 + 5 + 5 + 5$

C. $5 + 6 + 5 + 6 + 5$

D. $6 + 6 + 6 + 6 + 6 + 6$

12 Farhad has a 10-minute stretching routine. He stretches ten times each month. How many minutes does Farhad stretch each month?

A. 1 hour

B. 10 minutes

C. 100 minutes

D. 1,000 minutes

13 What is the value of 8 groups of 7?

A. 76

B. 56

C. 48

D. 42

14 John uses 16 support beams in each segment of a wheelchair ramp. There are five segments in the ramp. Which of the following represents the total number of support beams John uses?

A. $5 + 16 = 16 \times 5$

B. $16 + 16 + 16 + 16 = 4 \times 16$

C. $5 + 5 + 5 + 5 + 5 = 5 \times 16$

D. $16 + 16 + 16 + 16 + 16 = 16 \times 5$

15 While hiking, Mallory pauses two times for seven minutes each time. How long does Mallory pause along her hike?

A. 27 min

B. 16 min

C. 14 min

D. 5 min

16 Which equation shows the value of 3 groups of 6?

A. $6 + 6 + 6 = 18$

B. $6 + 6 + 6 = 36$

C. $3 + 3 + 3 = 9$

D. $3 + 3 = 6$

Math-E - Practice 13 – Multiplication

Practice 13 Multiplication as Repeated Addition

pp. 30–31 3.OA.1, 2.NBT.2

1. D. Javier buys 16 hooks. Multiply 2×8 to get 16. To solve using repeated addition, add $8 + 8 = 16$.
2. B, E. Todd uses 9 groups of 5 cinnamon sticks. Draw a 5 by 9 array or skip count by 5 nine times to solve using repeated addition.
3. B. There are 3 rows that each have 7 dots. Each row represents an equal group of 7. You can find the total number of dots by adding $7 + 7 + 7 = 21$.
4. D. $9 \times 3 = 27$
5. A. Shaquille shoots 42 arrows. Multiply 6×7 to get 42. To solve using repeated addition, add $6 + 6 + 6 + 6 + 6 + 6 + 6 = 42$.
6. C. Because there are 4 patients and each receives 2 samples, there are 4 equal groups of 2. You can solve the problem by adding $2 + 2 + 2 + 2 = 8$.
7. D. Skip counting by 100 means adding 100 each time: $600 + 100 = 700$; $700 + 100 = 800$; $800 + 100 = 900$.
8. A. There are 5 equal groups of 8, so $8 + 8 + 8 + 8 + 8$ can be represented as 5×8.
9. **Part A:** C. The array represents 10 groups of 5 because there are 10 columns in the array and 5 dots in each column.

   Part B: B. The expression 5×10 represents the array because there are 5 rows in the array and 10 dots in each row.
10. D. The theater plays the movie 48 times: $4 \times 12 = 48$.
11. A. Because there are 5 paychecks and each includes a \$6 deduction, there are 5 equal groups of 6. You can solve the problem by adding $6 + 6 + 6 + 6 + 6 = \$30$.
12. C. Farhad stretches 100 minutes. Skip count by 10 ten times, or multiply 10×10 to get 100 minutes.
13. B. $8 \times 7 = 56$
14. D. Because there are 5 segments and each has 16 support beams, there are 5 equal groups of 16. You can solve with repeated addition or multiplication: $16 + 16 + 16 + 16 + 16 = 16 \times 5$.
15. C. Mallory pauses for 14 minutes: $2 \times 7 = 14$.
16. A. The value of 3 groups of 6 is $6 + 6 + 6 = 18$.