3rd Basic

4th Advanced

Helping With Math

USA GRADES

Properties of Multiplication

Suitable for students **aged 7-9**

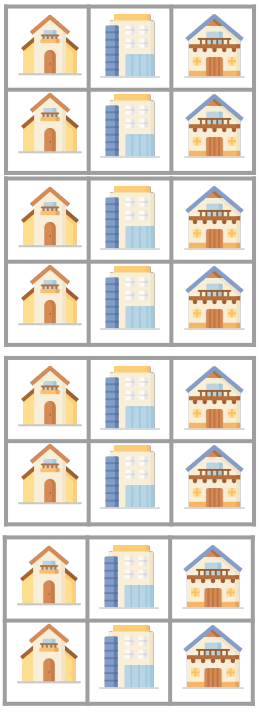
This pack is suitable for learners aged 7-9 years old or 3rd to 4th graders (USA). The content covers fact files and relevant basic and advanced activities involving properties of multiplication.

Identity Property

4 x 1 = 4

2 x (3 + 1) = 2 x 4 = 8

Distributive Property

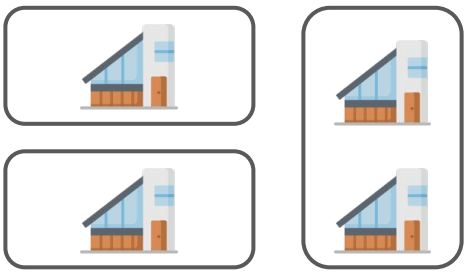


(2 x 3) x 4 = 6 x 4 = 24

Associative Property

2 x (3 x 4) = 2 x 12 = 24

Commutative Property



2 x 1 = 2

1 x 2 = 2

PROPERTIES

COMMUTATIVE PROPERTY OF MULTIPLICATION

- The answer remains the same when multiplying numbers even though the order of numbers are changes
- In other words, changing the order of the factors does not change the product

Examples:

1. 5 x 8 = 8 x 5
   40 = 40
2. 4 x 9 = 9 x 4
   36 = 36

Try these:

1. 9 x 3 = ___ x ___
   27 = _____
2. _____ x _____ = 10 x 13
   130 = _____

- When multiplying any three numbers together, the product will always be the same regardless of the order of the factors

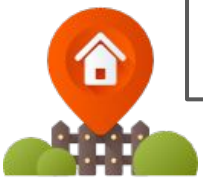
ASSOCIATIVE PROPERTY OF MULTIPLICATION

Examples:

1. 5 x (3 x 2) = (5 x 3) x 2
   5 x 6 = 15 x 2
   30 = 30
2. 10 x (4 x 2) = (10 x 4) x 2
   10 x 8 = 40 x 2
   80 = 80

Try these:

1. 6 x (2 x 3) = _____
   6 x 6 = _____
   36 = _____
2. _____ = (9 x 5) x 6
   _____ = 45 x 6
   _____ = 270



ILLUSTRATIVE EXAMPLES

DISTRIBUTIVE PROPERTY OF MULTIPLICATION

- The multiplication sentence or factors can be distributed over addition, as well as subtraction

Examples:

1. 3 x (5 + 3)
   = 3 x 8 = 24
2. 5 x (8 + 2)
   = 5 x 8 + 5 x 2 = 40 + 10 = 50

Try these:

1. 6 x (6 + 4)
   = _____ = _____
2. 9 x (4 - 1)
   = _____= _____ = __

IDENTITY PROPERTY OF MULTIPLICATION

- This property states that any number multiplied by 1, the product will always be the same number

Examples:

1. 29 x 1 = 29
2. 93 x 1 = 93
3. 101 x 1 = 101
4. 34 x 1 = 34
5. 48 x 1 = 48

Try these:

1. _____ x 1 = 99
2. 382 x 1 = _____
3. 284 x _____ = 1

TABLE OF ACTIVITIES

HOUSE PLAN

G3 Basic

Plan your future home properly by answering the crossword puzzle below related to the properties of multiplication.

1. When multiplying three or more numbers, the final value is the same.
2. When multiplying two numbers together, the final value is the same.
3. When you multiply a number by 1, the product is that number.
4. The factors can be distributed over subtraction

HOUSE LOAN

G3
Basic

Loan your dream house and be approved by identifying what property is shown on the highlighted multiplication sentence. Write the letter and its corresponding property on the space provided then explain why did you chose that property.

8 x (9 x 2) = (8 x 9) x 2

1. What property of multiplication is displayed in the problem above?

a.) Commutative
c.) Distributive
b.) Associative
d.) Identity

Answer and Explanation:

5 x (8 + 2) = 5 x 8 + 5 x 2

2. What property of multiplication is displayed in the problem above?

a.) Commutative
c.) Distributive
b.) Associative
d.) Identity

Answer and Explanation:

RENT TO OWN

G3
Basic

Avail this mid year sale promo of a "Rent-To-Own Scheme" by identifying which property is shown in each given. Write the letter of your choice on the space provided.

_____1. 10 x (33 + 15) = 10 x 33 + 10 x 15

_____ 2. (20 x 6) x 2 = 20 x (6 x 2)

_____ 3. 17 x 3 = 3 x 17

_____ 4. 39 = 39 x 1

_____ 5. Distributive property

a. Commutative Property

b. 1 x 8 + 6 x 8 = (1 + 6) x 8

c. Associative Property

d. Distributive Property

e. Identity Property

REAL ESTATE DILEMMA

G3
Basic

Overcome your real estate dilemma by matching the right property on each item. Cut and paste your answer on the space provided.

1. Which property of multiplication is shown below?

2 x 4 + 8 x 4 = (2 + 8) x 4

2. Which property of multiplication is displayed?

17 x 30 = 30 x 17

3. Which property of multiplication is being exhibited?

(6 x 7) x 3 = 6 x (7 x 3)

= Commutative Property

=Distributive Property

= Associative Property

=Identity Property

PERFECT HOUSE HUNT

G3
Basic

Look for your dream and perfect house by cutting out the following multiplication sentences and paste them on to their respective property category.

COMMUTATIVE PROPERTY	ASSOCIATIVE PROPERTY
DISTRIBUTIVE PROPERTY	IDENTITY PROPERTY

9 x 4 = 4 x 9	14 x 1 = 14	7 x (2 x 4) = (7 x 2) x 4
29 x 1 = 29	6 x 2 = 2 x 6	8 x (2 + 1) = 8 x 2 + 8 x 1
9 x (3 x 7) = (9 x 3) x 7	4 x (7 + 5) = 4 x 7 + 4 x 5	6 x 7 = 7 x 6

ESTATE CERTIFICATE

G4 Advanced

Receive the proof of your estate by rewriting each multiplication sentence in another way by rearranging the numbers. Afterwards, write the product. The first item is done for you.

1. 49 x 12	= 12 x 49	= 588
2. 8 x 4 x 9	=	=
3. 58 x 20	=	=
4. 9 x 2 x 5	=	=
5. 33 x 18	=	=
6. 8 x 5 x 2	=	=
7. 60 x 9	=	=
8. 7 x 8 x 1	=	=
9. 45 x 21	=	=
10. 9 x 5 x 8	=	=

INSURANCE ASSOCIATE

G4 Advanced

Secure the house insurance by identifying the Associative property of multiplication from the choices below. Write the letter of your answer on the box provided. Afterwards, identify the product of the multiplication sentence you chose.

1.

A) 21 x 8 = 8 x 21

B) (21 x 8) x 2 = 21 x (8 x 2)

C) 21 x (8 + 2) = 21 x 8 + 21 x 2

Answer | Product

2.

A) 10 x (15 x 3) = (10 x 15) x 3

B) 10 x (15 + 3) = 10 x 15 + 10 x 3

C) 10 x 15 = 15 x 10

Answer | Product

3.

A) 12 x (25 + 4) = 12 x 25 + 12 x 4

B) 12 x 25 = 25 x 12

C) 12 x (25 x 4) = (12 x 25) x 4

Answer | Product

4.

A) 18 x 1 = 1 x 18

B) (18 x 1) x 8 = 18 x (1 x 8)

C) 18 x (1 + 8) = 18 x 1 + 18 x 8

Answer | Product

ESTATE'S APARTELLE

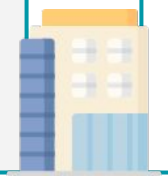
G4 Advanced

Choose your next apartelle by rewriting the following multiplication sentences using the Distributive property. Show them in two ways.

1. 25 x (10 + 2)

1st solution:

2nd solution:



2. 50 x (3 + 3)

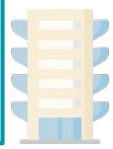
1st solution:

2nd solution:

3. 99 x (15 + 5)

1st solution:

2nd solution:



HOME REPAIR

G4 Advanced

Just like how we repair something at home, examine what went wrong with the following solutions. Explain the error then provide the corrected form.

1. 38 x 1 = 1

What went wrong?

Corrected form:

2. 12 x (15 + 19) = 12 + 15 x 19 = 27 x 19 = 513

What went wrong?

Corrected form:

CONTRACT SIGNING

G4
Advanced

Sign the contract to claim and own your dream house by answering the questions below.

1. Give one to two life examples or applications related to the theme where this lesson can be applied.

2. What is the significance of learning properties of multiplication? How is it beneficial for you?

3. Did you enjoy this lesson? Share your enjoyable moment/s while learning this lesson by teaching your friends.

ANSWER GUIDE

Activity 1

1. Associative
2. Commutative
3. Identity
4. Distributive

Activity 2

1. B. Associative
2. C. Distributive

-Explanation may vary.-

Activity 3

1. D
2. C
3. A
4. E
5. B

Activity 4

1. NEW= Distributive
2. RENT= Commutative
3. SOLD= Associative

Activity 5

Commutative Property

1. 9 x 4 = 4 x 9
2. 6 x 2 = 2 x 6
3. 6 x 7 = 7 x 6

Associative Property

1. 9 x (3 x 7) = (9 x 3) x 7
2. 7 x (2 x 4) = (7 x 2) x 4

Distributive Property

1. 4 x (7 + 5) = 4 x 7 + 4 x 5
2. 8 x (2 + 1) = 8 x 2 + 8 x 1

Identity Property

1. 29 x 1 = 29
2. 14 x 1 = 14

Activity 6

2. 4x9x8 / 9x8x4 =288
3. 20x58 =1,160
4. 2x5x9 / 5x9x2 =9
5. 18x33 =594
6. 5x8x2 / 2x8x5 =80
7. 9x60 =540
8. 8x1x7 / 1x7x8 =56
9. 21x45 =945
10. 5x8x9 / 8x9x5 =360

ANSWER GUIDE

Activity 7

1. B=336
2. A=450
3. C=1,200
4. B=144

Activity 8

1. 25 x 12
   25 x 10 + 25 x 2
2. 50 x 6
   50 x 3 + 50 x 3
3. 99 x 20
   99 x 15 + 99 x 5

Activity 9

1. Incorrect use of identity property. It should be 38 x 1 = 28.
2. Incorrect use of Distributive property. It should be 12 x (34) = 408.

Activity 10

Answers may vary.

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