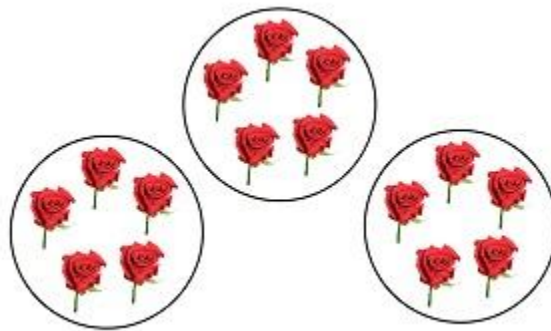


BANGLADESH INTERNATIONAL TUTORIAL LTD
JUNIOR SCHOOL, UTTARA
SUBJECT: MATHEMATICS, CLASS: I
HANDNOTE
SESSION: 2019-2020

Multiplication:

Multiplication is when you take one number and add it together a number of times.
Example: 5 multiplied by 4 = $5 + 5 + 5 + 5 = 20$. We took the number 5 and added it together 4 times.

Adding Groups of Numbers



Essentially, to multiply numbers is to add groups of a number.

For example, if we have three groups of five flowers and we need to find the total number of flowers, we can either:

1. add the flowers within the groups
($5 + 5 + 5$)
2. or we can multiply the number of groups by the number of flowers in one group
(3 groups x 5 flowers)
3. $5 + 5 + 5$ has the same meaning as 3×5
(3 groups of 5)

$$\begin{array}{ccc} 5 + 5 + 5 & = & 3 \times 5 \\ \text{(adding)} & & \text{(multiplying)} \\ \text{3 groups of 5)} & & \text{3 groups of 5)} \end{array}$$

$$4 + 4 = 2 \times 4$$

$$3 + 3 + 3 + 3 = 4 \times 3$$

$$2 + 2 + 2 = 3 \times 2$$

Multiplying means repeated addition of a number. (The number must all be the same before we can use it to multiply.)

Now let's look at something interesting:

$$3 \text{ groups of } 5 = 5 + 5 + 5 = 15$$

$$5 \text{ groups of } 3 = 3 + 3 + 3 + 3 + 3 = 15$$

3 groups of 5 has the same answer as 5 groups of 3!

So,

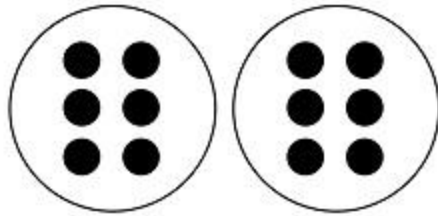
$$3 \times 5 = 5 \times 3$$

This means that when you multiply 2 numbers, the orders of the numbers do not matter; the answer will still be the same.

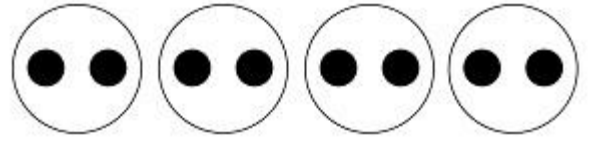
Let's Practice

Step 1

Use the groups of dots as shown in the examples below.



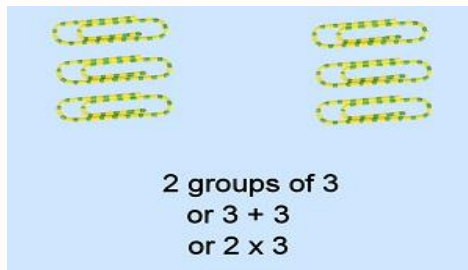
2 groups of 6
or $6 + 6$
or 2×6



4 groups of 2
or $2 + 2 + 2 + 2$
or 4×2

Step 2

After playing with the cards and your child is beginning to understand the concept of multiplication, give him or her physical objects like erasers, paper clips or stickers to form the groups shown in the card.



Remember to say it aloud, for example "3 groups of 5" until your child gets used to thinking like that when it comes to multiplying.

Step 3

Once your child has mastered using the cards, have him form his own groups and write the multiplication statement, without looking at the cards. Make it a family activity and test each other.

Try these worksheets on multiplication.



$$\begin{array}{c}
 3 \text{ groups of } 8 \\
 8 + 8 + 8 \\
 3 \times 8
 \end{array}$$

Tips to remember when drawing multiplication models:

1. The size of the boxes must be equal for the same number.
2. A bigger number should have a bigger box than a smaller number.
3. The boxes are usually drawn horizontally in a row.

Multiply by 10 Using Place Value

Using the Model Method to Multiply 2-Digit Numbers

You can also use this method to teach your child to multiply 2-digit numbers with a 1-digit number. Just think of adding groups of numbers.

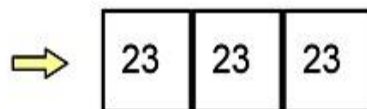
For example, let's work this out: 3×23

We know that 3×23 means 3 groups of 23. We can draw the model.

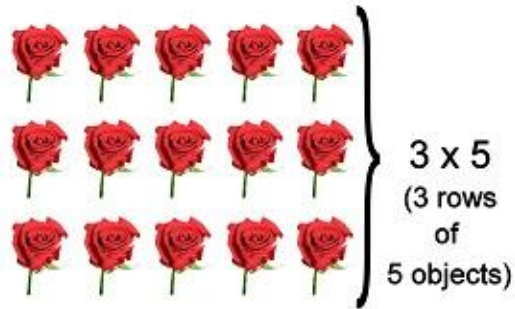
What is 3×23 ?

Answer:

$$3 \times 23 = 3 \text{ groups of } 23$$



$$\begin{array}{r}
 T \ O \\
 2 \ 3 \\
 \times 3 \\
 \hline
 6 \ 9
 \end{array}$$



Breaking
into smaller groups

$$6 \times 8$$

$$\begin{aligned}
 &= 6 \text{ groups of } 8 \\
 &= 6 \text{ groups of } 4 + 6 \text{ groups of } 4 \\
 &= (6 \times 4) + (6 \times 4) \\
 &= 24 + 24 \\
 &= 48
 \end{aligned}$$

Here are some examples for you, Do it by yourself:

$$\begin{array}{r}
 \text{T O} \\
 51 \\
 \times 5 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 \text{T O} \\
 42 \\
 \times 2 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 \text{T O} \\
 22 \\
 \times 4 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 \text{T O} \\
 20 \\
 \times 4 \\
 \hline
 \end{array}$$

❖ Now do page (101-104) from N.N.W book.

❖ Multiplication - another way (regroup and carry forward)

$$318 \times 6 =$$

Multiply the ones

318

$6 \times 8 = 48$	$\begin{array}{r} 48 \\ \times 6 \\ \hline 08 \end{array}$
Write the 8 in the ones' place and carry the 4 forward to the tens' place	$\begin{array}{r} 31^48 \\ \times 6 \\ \hline 08 \end{array}$
Multiply the tens $6 \times 1 = 6$ and add the 4 that was carried forward $6 + 4 = 10$	$\begin{array}{r} 31^48 \\ \times 6 \\ \hline 08 \end{array}$
Write the 0 in the tens' place and carry the 1 forward to the hundreds' place	$\begin{array}{r} 31^48 \\ \times 6 \\ \hline 08 \end{array}$
Multiply the hundreds $6 \times 3 = 18$ and add the 1 that was carried forward $18 + 1 = 19$	$\begin{array}{r} 31^48 \\ \times 6 \\ \hline 08 \end{array}$
Write the 1 in the thousands' place and the 9 in the hundreds' place	$\begin{array}{r} 31^48 \\ \times 6 \\ \hline 1908 \end{array}$
$318 \times 6 = 1908$	

❖ Now do page (106 – 109) from N.N.W book

Multiplication word problems:

This is the first type of multiplication word problem that one learns how to do. For example:

Anna has 5 egg cartons. Each carton has 12 eggs. How many eggs does she have in total?

We find:

- A number of sets: **Anna has 5 egg cartons.**
- The number of things that there are in each set: **Each carton has 12 eggs.**

- The question about the total number of things there are: **How many eggs does she have in total?**

To solve this word problem, we ought to think: if there are 12 eggs in each carton and Anna has 5 cartons, in order to know how many eggs there are in total, we will add $12 + 12 + 12 + 12 + 12$, or, what ends up being the same: **we will multiply 5×12 : In total, Anna has 60 eggs.**

The another example, There are 56 stamps in a packets. How many stamps are there in 7 packets?

So the answer is : T O

$$\begin{array}{r} 56 \\ \times 7 \\ \hline 392 \end{array}$$
 stamps

Ans: 392 stamps.

❖ **Now do page 110 and 111 page from N.N.W. Book**

DIVISION:

Division is splitting into equal parts or groups. It is the result of "fair sharing".

Example: there are 12 chocolates, and 3 friends want to share them, how do they divide the chocolates?

Answer: They should get 4 each.

We use the \div symbol, or sometimes the / symbol to mean divide:

$$12 \div 3 = 4$$

$$12 / 3 = 4$$

There is another way to set out division.

This way is especially useful when you divide large numbers.

$15 \div 3$ can be set out as $\begin{array}{r} 3 \overline{) 15} \end{array}$

How many 3s are there in 15?

5

We know that $3 \times 5 = 15$

$$\begin{array}{r} 3 \overline{) 15} \end{array}$$

So $15 \div 3 = 5$

Opposite of Multiplying

Division is the **opposite of multiplying**. When we know a multiplication fact we can find a division fact:

Example: $3 \times 5 = 15$, so $15 \div 5 = 3$.

Also $15 \div 3 = 5$.

Example: What is $28 \div 7$?

Searching around the multiplication table we find that 28 is 4×7 , so 28 divided by 7 must be 4.

Answer: $28 \div 7 = 4$

Names

There are special names for each number in a division:

$$\text{Dividend} \div \text{Divisor} = \text{Quotient}$$

Example: in $12 \div 3 = 4$:

- 12 is the dividend
- 3 is the divisor
- 4 is the quotient

Now do page (121- 122) from N.N.W book

Division word problem

Question.1 There are 80 biscuits arranged equally in 8 boxes. How many biscuits are there in each box?

Answer: $80 \div 8 = 10$ Biscuits

Now follow this rule and do page 123 from N.N.W book

NOW YOU SHOULD PRACTICE FROM THE LINK HERE:

https://www.khanacademy.org/search?page_search_query=multiplication

https://www.khanacademy.org/search?referer=%2Fsearch&page_search_query=DIVISION

<https://www.khanacademy.org/math/cc-1st-grade-math>