

DELHI MODERN PUBLIC SCHOOL , PAMPORE

Class: 4th

Subject: Maths

Study Material: Term- I

Chapter no. 5

Topic : Multiples and Factors

Multiples: are skip counting number or “count by” numbers.

E.g: To find the multiples of 4 , we count by 4s i,e 4,8,12,16,20 and 24. The numbers are nothing but the tables of 4. These numbers are called multiples of 4. Multiples are thus the product of a number with the natural numbers. 1,2,3,4 and so on.

Day1:

Read and understand the facts about multiples from the page no. 70 of your book.

Finding multiples of a number:

Multiples of a number can be found by:

- a) Writing the mathematical table of that number.
- b) doing skip counting.

INNINGS 5.1

Q1: Find the first six multiples of:

a) 11 :- $11 \times 1 = 11$, $11 \times 2 = 22$, $11 \times 3 = 33$, $11 \times 4 = 44$
 $11 \times 5 = 55$, $11 \times 6 = 66$.

b) 25:- $25 \times 1 = 25$, $25 \times 2 = 50$, $25 \times 3 = 75$, $25 \times 4 = 100$
 $25 \times 5 = 125$, $25 \times 6 = 150$.

Do remaining parts by yourself on notebook.

Q2:

a) 8408

if 8408 is a multiple of 8 , then it should be completely divisible by 8 with remainder =0.

$$8408 \div 8 = 1051 \text{ with remainder } = 0$$

Therefore, vase with number 8408 should be coloured.

Do remaining parts by yourself on notebook.

Q3: Do it on book.

Q4: Write the following:

Sol:

a) The 5th multiple of 6 =30

$$5 \times 6 = 30$$

d) Multiples of 3 between 30 and 50

$$3 \times 11 = 33, 3 \times 12 = 36, 3 \times 13 = 39$$

$$3 \times 14 = 42, 3 \times 15 = 45, 3 \times 16 = 48$$

Therefore, 33, 36, 39, 42, 45 and 48 are multiples of 3 between 30 and 50.

Do remaining parts by yourself.

Q5: Observe the pattern and write the next 3 multiples

Sol:

a) 10, 15, 20, 25, 30, 35 (Multiples of 5)

Do remaining parts by yourself on book.

Day 2:

Common Multiples:

A common multiple is a number that is a multiple of two numbers.

Eg: 18 is a multiple of both 6 and 9

$$6 \times 3 = 18$$

$$9 \times 2 = 18$$

So, two or more numbers can have the same multiple.

___ The smallest common multiple of two numbers is called Lowest Common Multiple or L.C.M.

___ Read and understand the given steps on page no. 72 to find the common multiples.

INNINGS 5.2

Q1: Find the first three common multiples of

a) 4 and 5

Sol: 4:- 4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44, 48, 52, 56, 60.

5:- 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60

Therefore, common multiples of 4 and 5 are 20, 40, 60.

Do remaining parts by yourself on notebook.

Q2: write the smallest number that is common multiple of :

a) 2 and 9

Multiples of 2: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20.

Multiples of 9: 9, 18, 27,

Therefore, 18 is the smallest common multiple of both 2 and 9.

Do remaining parts by yourself.

Q3: sol

At one time mother spider climbs = 4cm.

At one time baby spider climbs =3cm

Multiples of 4: 4, 12, 16, 20....

Multiples of 3: 3, 6, 9, 12, 15.....

Therefore starting from the same point both mother spider and baby spider will meet at 12cm.

Q5: sol

Sheetal waters her cactus plant every 10 days.

She also water her dahlia every 3 days

The days she will water both plants again=

Multiples of 10 : 10, 20, 30, 40

Multiples of 3: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30.

Therefore, after 30 days she will water both plants again.

Do Q4 and Q6 by yourself.

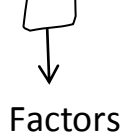
Day 3:

Factors:

A number can be regarded as a product of two or more numbers . The numbers that are multiplied together are called factors.

Final number

e.g : $5 \times 4 = 20$ —————> Multiple or product



————> Read and understand the facts about factors given on page no. 74 of your book.

————> The factors of a number can be found by multiplication or division.

INNINGS 5.3

Q1: Use multiplication to find the factors of :

a) 56

Sol: we find the numbers which will go 56 when multiplied

So,

$1 \times 56 = 56$. Therefore , 1 and 56 are factors.

$2 \times 28 = 56$. Therefore , 2 and 28 are factors.

$4 \times 14 = 56$. Therefore, 4 and 14 are factors.

$7 \times 8 = 56$. Therefore , 7 and 8 are factors.

All possible combinations are being tried out . Therefore 1, 2, 4,7 ,8, 14 , 28, 56 are the factors of 56.

Do remaining parts by yourself.

Q2: Find the factors of the following numbers using division.

a) 65

Sol: We divide 65 by all possible numbers and it must be exactly divided without leaving any remainder.

So,

$65 \div 1 = 65$. Therefore, 1 and 65 are factors of 65.

$65 \div 5 = 13$. Therefore , 5 and 13 are factors of 65.

All possible divisions are being tried out, Therefore 1, 5,13, 65 are the factors of 65.

e) 32

Sol: $32 \div 1 = 32$. Therefore , 1 and 32 are factors of 32.

$32 \div 2 = 16$. Therefore, 2 and 16 are factors of 32.

$32 \div 4 = 8$. Therefore , 4 and 8 are factors of 32.

Therefore , 1, 2, 4, 8, 16, 32 are the factors of 32 .

Do remaining parts by yourself.

Q3: Find the numbers from 1-30 which have

a) only two factors

Sol: 2 and 3

$2 \times 1 = 2$

$1 \times 2 = 2$

There are only two factors of number 2 i,e 1 and 2.

Do remaining parts by yourself.

Day 4:

Q4: Write the factors , other than 1 and number itself.

a) 18

Sol: $2 \times 9 = 18$. Therefore, 2 and 9 are factors of 18.

$3 \times 6 = 18$. Therefore, 3 and 6 are factors of 18.

Therefore 2, 3, 6 ,9 are the factors of 18.

e) 27

Sol: $3 \times 9 = 27$. Therefore, 3 and 9 are factors of 27.

Therefore 3 ,9 are the factors of 27.

Do remaining parts by yourself.

Q5: In the given grid on page no. 76:

a) Circle the numbers that have 2 as a factor (number other than 2)

Sol: 4, 6, 8, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 76, 78, 80, 82, 84, 86, 88, 90, 92, 94, 96, 98, 100

Do remaining parts by yourself on book.

Day 5:

Common Factors:

When we find the factors of two or more numbers and then find some factors are the same (common), then they are the common factors.

Example: 12 and 16

12

$$1 \times 12 = 12$$

$$2 \times 6 = 12$$

$$3 \times 4 = 12$$

Therefore, 1, 2, 3, 4, 6, 12 are factors of 12.

16

$$1 \times 16 = 16$$

$$2 \times 8 = 16$$

$$4 \times 4 = 16$$

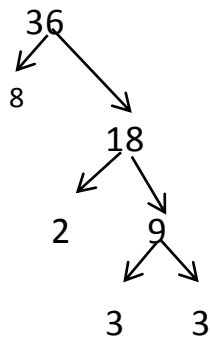
Therefore, 1, 2, 4, 8, 16 are factors of 16.

So, the common factors of 12 and 16 are 1, 2 and 4.

The greatest common factor or highest common factor of two or more numbers is called GCF or HCF.

⇒ A factor tree which shows the factors of a number is given in your book on page no. 77. It helps to divide a number into factors, which are then further divided to even smaller factors. It continues till the time when 1 needs to be used as the factor.

E.g : 36



So, 36 can be written as $2 \times 2 \times 3 \times 3$.

Day 6:

INNINGS 5.4

Q1: Find the common factors in each pair of the following:

a) 21 and 28

Sol: 21 can be written as:

$$21 = 1 \times 21$$

$$21 = 3 \times 7$$

28 can be written as

$$28 = 1 \times 28$$

$$28 = 2 \times 14$$

$$28 = 4 \times 7$$

Therefore, factors of 21 are 1, 3, 7, 21

Factors of 28 are 1, 2, 4, 7

Therefore, the common factors of 21 and 28 are 1, 7.

d) 34 and 35

Sol: 34 can be written as:

$$34 = 1 \times 34$$

$$34 = 2 \times 17$$

35 can be written as:

$$35 = 1 \times 35$$

$$35 = 5 \times 7$$

Therefore, factors of 34 are 1, 2, 17, 34.

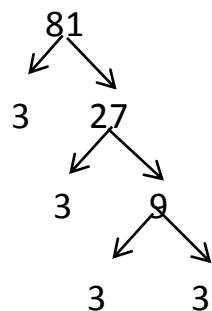
Factors of 35 are 1, 5, 7, 35.

Therefore, the common factors of 34 and 35 is 1

Do remaining parts by yourself.

Q2: Draw the factor tree for the following numbers:

a) 81



Factor tree for number 81.

Do remaining parts by yourself.