Chapter-6

DIVISION

STUDY NOTES

*** Division of 4-digit Numbers**

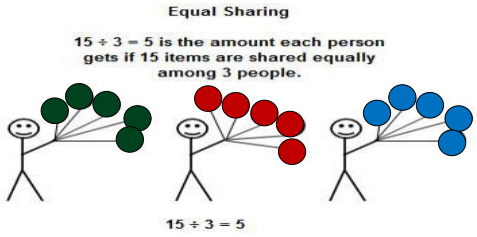
*** Division by a 2-digit Number**

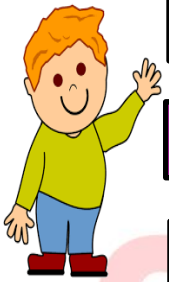
*** Division by a 2-digit Number (Word Problems)**

1. Division of 4-digit Numbers

➢ **EXPLANATION**

On dividing the whole or a group of objects into equal parts, we get equal shares. We need to divide an object or a whole number into equal parts to distribute it equally. In the sharing situation, some known quantity (amount) is shared equally among a known number of entities (people, boxes, packages, etc.). What is not known in a sharing situation is the amount of the given quantity per share.





The number which is to be divided is called DIVIDEND.

The number by which we divide is called DIVISOR.

The answer of the division is called QUOTIENT.

In 1 0 8 5 ÷ 5 = 2 1 7

DIVIDEND DIVISOR QUOTIENT

REMEMBER

In case a number is left after division, it is called REMAINDER

DIVISION IS ALSO A REPEATED SUBTRACTION

Repeated subtraction is a method of subtracting the equal number of items from a larger group. It is also known as division.

If the same number is repeatedly subtracted from another larger number until the remainder is zero or a number smaller than the number being subtracted, we can write that in the form of division.

Now let us divide a 4-digit number by a 1-digit number

➢ **For example:**

8 5 6 0 ÷ 5

```
       1 7 1 2
    ----------
 5 |  8 5 6 0
    - 5
    ---
      3 5
    - 3 5
    -----
      0 6
        5
      ---
        1 0
        1 0
      -----
          0
```

STEP - 1

Divide **8** in thousands place by **5**

5 x 1 = 5 (< **8**) and 5 x 2 = 1 0 (> **8**), So we take **5** x 1 = 5

Write **1** above **8** as the quotient and **5** below **8** and then subtract. **8 - 5 = 3**

STEP - 2

Bring down **5**. We have 3 5. Divide 3 5 by 5 : 5 x 7 = 3 5

Write **7** above **5** as the quotient and **35** below **35** and then subtract.

35 - 35 = 0

STEP - 3

Bring down **6**. 5 x 1 = 5 (< **6**) and 5 x 2 = 1 0 (> **6**), So we take **5** x 1 = 5

Write **1** above **6** as the quotient and **5** below **6** and then subtract.

6 - 5 = 1

STEP - 4

Bring down **0**. We have 1 0. Divide 1 0 by 5 : 5 x 2 = 1 0

Write **2** above **0** as the quotient and **10** below **10** and then subtract.

10 - 10 = 0

REMEMBER

D - DIVISOR

Q - QUOTIENT

R - REMAINDER

CHECK DIVISION BY USING THIS FORMULA:

D X Q + R = DIVIDEND

2. Division by a 2-digit Number

➢ **EXPLANATION**

In math, **division** is a method used for dividing large numbers into groups or parts. ... Just like all division problems, a large number, which is the **dividend**, is divided by another number, which is called the **divisor**, to give a result called the **quotient**.

STEP TO DIVIDE

15 in 3 doesn't go, so look at the next digit.

```
   2
15|3640
  -30
   6
```

15 goes into 36 two times, so write 2 above 6.
15 x 2 = 30

Take that 30 away from 36 to get your remainder.
36 - 30 = 6

```
   24
15|3640
  -30
   64
  -60
    4
```

Next, carry down 4 to make 64.
15 goes into 64 four times, so put a 4 above 4
15 x 4 = 60

Take that 60 away from 64 to get your remainder.
64 - 60 = 4

```
   242
15|3640
  -30
   64
  -60
    40
   -30
    10
```

Carry the 0 down to make 40.

15 goes into 40 two times, so write 2 above 0.
15 x 2 = 30

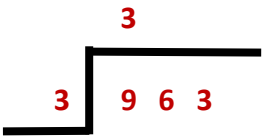
Take that 30 away from 40 to get your remainder.
40 - 30 = 10

Division involves 5 steps:

D	Divide
M	Multiply
S	Subtract
B	Bring down
R	Repeat or Remainder

STEP 1 DIVIDE

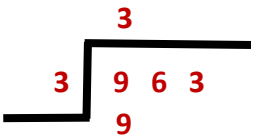
9 6 3 ÷ 3



The first step is to divide. So, how many times will 3 will go into 9? The answer is 3. So, you put 3 above 9 on the quotient line. You have now divided.

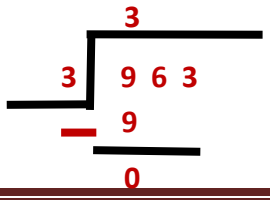
STEP 2 MULTIPLY

The next step is to multiply. You are going to multiply your answer from step one and your divisor. In this example, you are multiplying 3 x 3, which equals 9. You write this 9 underneath 9.



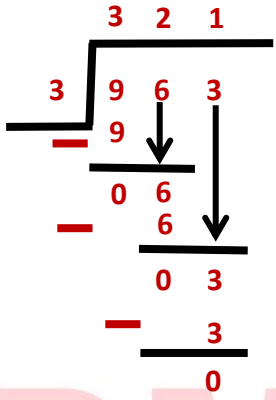
STEP 3 SUBTRACT

Next you are going to subtract. You will work the problem 9 - 9. The answer in this example is 0.



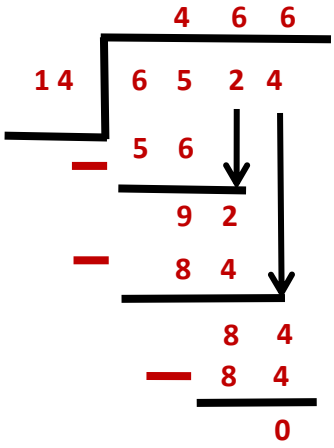
STEP 4 BRING DOWN AND **STEP 5 REPEAT**

Now first bring down 6 and repeat the same followed by 3. So let us do…… till we get 0 as the remainder.



➢ **For example:**

6 5 2 ÷ 1 4



STEP 1

6 < 14, So we take 6 5
Divide 6 5 by 1 4
14 x 4 = 56 (< 65) and 14 x 5 = 70 (> 65)
So we take 1 4 x 4 = 56

STEP 2

Multiply 14 x 4 = 56. Write 56 below 6 5 and 4 as the quotient above 5.

STEP 3

Subtract 6 5 - 5 6 = 9

STEP 4

Bring down 2 so it becomes 9 2.

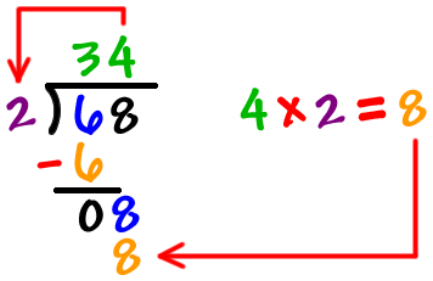
REPEAT THE ABOVE 4 STEPS

UNTILL WE HAVE NO MORE DIGITS TO BRING DOWN.

What is division ?

Division is a way to solve problems with large numbers. Basically, these are problems you cannot do in your head.

Here's a trick to mastering division. Use the acronym DMSB, which stands for:



D = Divide
M = Multiply
S = Subtract
B = Bring down

This sequence of letters can be hard to remember, so think of the acronym in the context of a family:

Dad, Mother, Sister, Brother.

3. Division by a 2-digit Number (Word Problems)

- **EXPLANATION**

These sums are language based. It is imperative that you start exploring, investigating and playing with these kinds of sums as early as possible. A story problem is a story that has numbers in it. In a story problem we are trying to figure out the missing number. We have to include all of our important parts of a story problem so others can understand our thinking.

- **For example:**

8 6 4 people have been invited to a party. The caterer is arranging tables. In each table 1 2 people can seat. How many tables are needed?

Solution:

To answer this question, we need to divide 8 6 4 by 1 2

8 6 4 ÷ 1 2

Number of people invited to a party = 8 6 4

Number of people can seat in each table = 1 2

```
        7 2
     ______
1 2 | 8 6 4
    - 8 4↓
      ----
        2 4
      - 2 4
      -----
          0
```

Quotient - 72

Remainder - 0

∴ **72 tables are needed for 864 people to seat in the party.**

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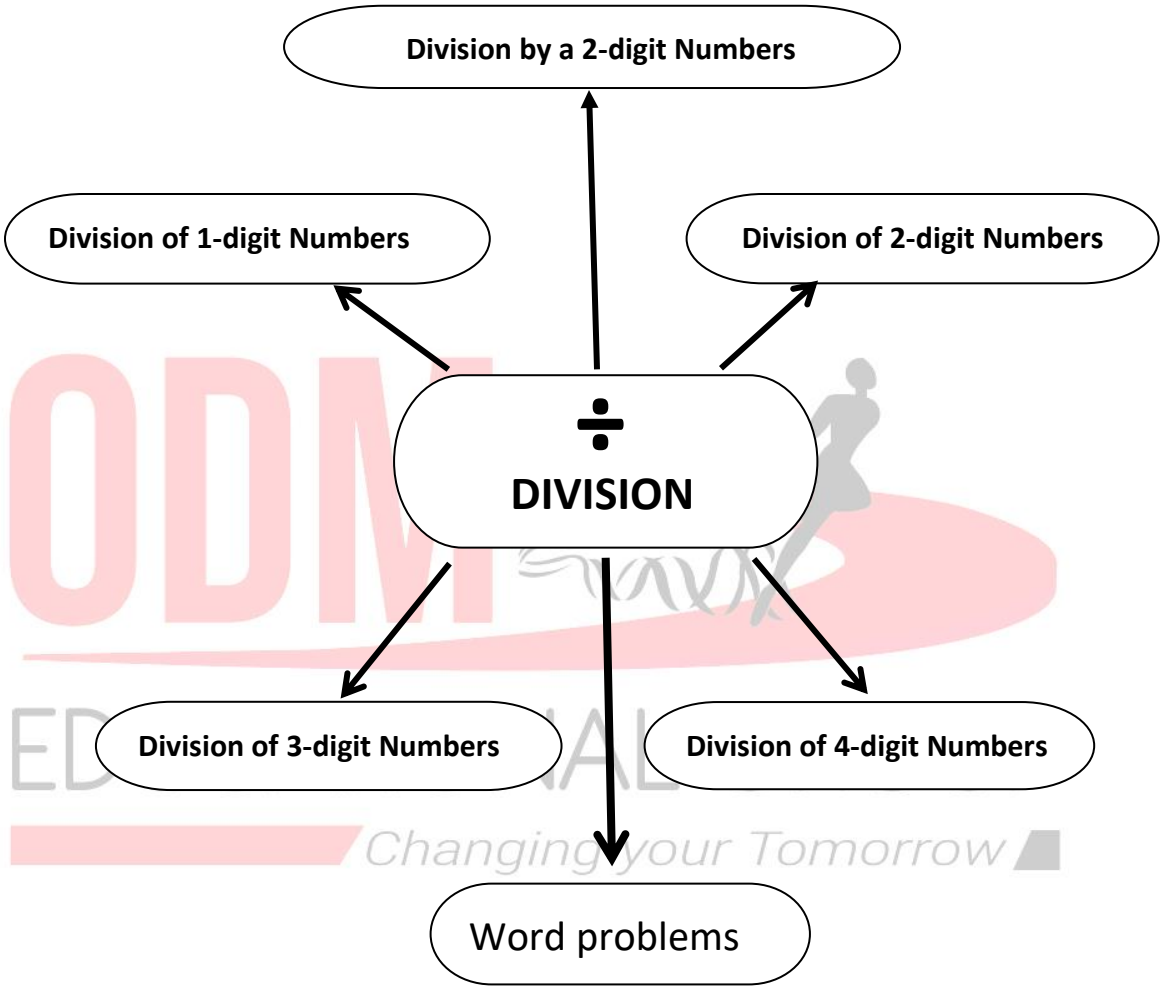
MIND MAP



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