



CORNERSTONE JUNIOR SCHOOL - MUKONO

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PRIMARY FIVE MATHEMATICS LESSON NOTES SELF STUDY LESSONS SET ONE

Given 22.5.2020

Dear Primary Five children, you are most welcome to Mathematics self- study lessons.

You will study one lesson daily. Use the following references for further reading:

Essential Primary Mathematics Book 5.

LESSON 1

Topic : Operations on numbers

Subtopic : Counting in twos and fives

By the end of this lesson, you should be able to:

- Count numbers in groups of 2 or 5.
- Write numbers in base two or base five.

Content

Counting in twos and fives

Examples

Step 1: Draw sticks to represent the given number and circle in groups of 5.

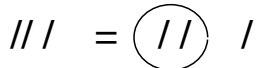
1. Write 6 in base five



1 group of fives, 1 ones

11_{five}

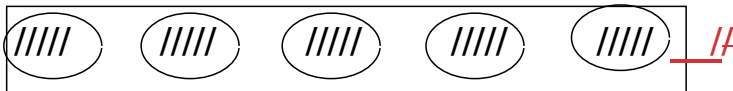
2. Count 3 in base two



1 group of twos, 1 ones

11_{two}

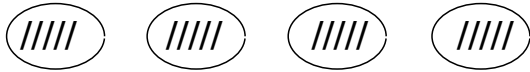
3. Count 26 in base five



1 group of five fives, 0 group of fives, 1 ones

101_{five}

4. Count 20 in base five.



4 groups of fives and 0 ones.

40_{five}

LESSON 2

By the end of this lesson, you should be able to;

- Find place values and values

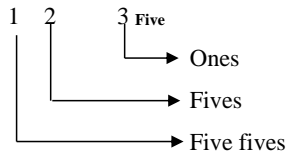
Note:

Since we are counting in groups of 5, the first group will Ones then fives, five fives e.t.c

Examples

1. Find the place value of each digit

123_{five}

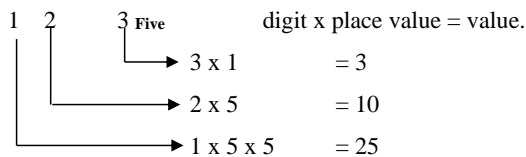


2. Work out the value of each digit in 123_{five}

Steps;

- First identify the place values of each digit in the given number in base five.
- Multiply each digit by its place value to find the values.

123_{five}



Therefore;

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The value of 3 is 3

The value of 2 is 10

The value of 1 is 25

Activity

1. Count the following in fives.
 - a) 10
 - b) 15
 - c) 18
 - d) 30

2. Find the place value of each digit in the following
 - a. 122_{five}
 - b. 103_{five}
 - c. 331_{five}
 - d. 212_{five}

3. Find the value of each digit
 - a. 112_{five}
 - b. 333_{five}
 - c. 211_{five}

LESSON 3

Topic : **Operations on numbers**
Subtopic : **Changing base five to base ten**

By the end of this lesson, you should be able to;

- Identify the question given .
- Find the value of each digit.
- Add up the digits to get base 10.
- Identify other words to mean base ten.

Content

Changing base five to base ten

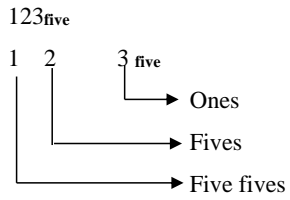
Other names for base ten are;

- Denary base
- Decimal base
- Mother base
- Unit base
- Day to day base

Steps;

- Identify the place value of each digit
- Multiply each digit by its place value to find the values
- Add the values of each digit to get the answer requested

1. Change 213_{five} to base ten.

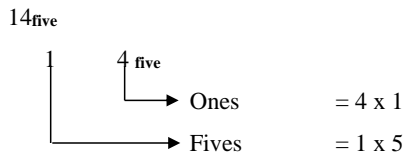


$$(1 \times 5 \times 5) + (2 \times 5) + (3 \times 1)$$

$$25 + 10 + 3$$

$$38_{\text{ten}}$$

2. Change 14_{five} to base ten.

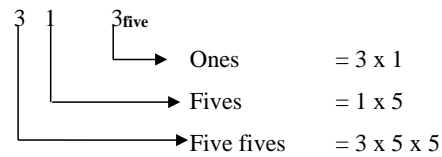


$$(1 \times 5) + (4 \times 1)$$

$$5 + 4$$

$$\underline{9}_{\text{ten}}$$

3. Convert 313_{five} to decimal base



$$(3 \times 5 \times 5) + (1 \times 5) + (3 \times 1)$$

$$75 + 5 + 3$$

$$\begin{array}{r}
 7 \text{ }_5 \\
 + 5 \\
 \hline
 3 \\
 \hline
 8 \text{ }_3 \text{ ten}
 \end{array}$$

Activity

Change the following to base ten.

- a) 13_{five} b) 21_{five} c) 23_{five} d) 32_{five}
- e) 22_{five} f) 34_{five} g) 112_{five} h) 310_{five}

LESSON 4

Topic : Operations on numbers
Subtopic : Changing base ten to base five

By the end of this lesson, the learner should be able to;

- Change numbers from base 10 to base 5.

Content

Changing base ten to base five

Steps;

- Draw a table with 3 columns i.e. base (B), number given (N) and remainder (R)
- Divide the given number by the required base (i.e. the base you are changing to in this case base 5)
- Write the answer in the column for number given (N) and write the respective remainders in the remainder column (R) as shown below.
- Write the remainders as the answer in base 5 starting with the last remainder. (as shown by the arrows in the examples)

Examples

1. Change 58_{ten} to base five

B	N	R
5	58	3



5	11	1
	2	

Therefore $58_{\text{ten}} = 213_{\text{five}}$

2. Convert 9_{ten} to base five

B	N	R
5	9	4
	1	

Therefore $9_{\text{ten}} = 14_{\text{five}}$

3. 74_{ten}

B	N	R
5	74	4
5	14	4
	2	

Therefore $74_{\text{ten}} = 244_{\text{five}}$

Activity

Change the following to base five

a) 8_{ten}

b) 11_{ten}

c) 15_{ten}

d) 21_{ten}

e) 33_{ten}

f) 42_{ten}

g) 41_{ten}

h) 55_{ten}

LESSON 5

Topic : Operations on numbers

Subtopic : Addition in bases

By the end of this lesson, the learner should be able to;

- Add numbers in base 5

Steps

- Arrange the numbers vertically according to their place value
- Add the digits in a given place value
- Group in fives, write the remainders and carry the fives

Content

Note;

1. The digits used in base five are 0,1,2,3 and 4.
2. In case the sum is bigger than the base, we divide it by the base ie, divide it by 5.
From the result, write the remainder and carry the quotient.
3. Quotient is the answer you get after dividing.

Addition in bases

1. Add: $12_{\text{five}} + 11_{\text{five}}$

$$\begin{array}{r} 12_{\text{five}} \\ + 11_{\text{five}} \\ \hline 23_{\text{five}} \end{array}$$

$1 + 2 = 3$

$1 + 1 = 2$

2. Work out: $133_{\text{five}} + 241_{\text{five}}$

$$\begin{array}{r} 1^1 33_{\text{five}} \\ + 241_{\text{five}} \\ \hline 424_{\text{five}} \end{array}$$

$3 + 1 = 4$

$3 + 4 = 7$

$\textcircled{////} //$

$= 1 \text{ r } 2$

$1 + 2 + 1 = 4$

3. Add: $330_{\text{five}} + 242_{\text{five}}$

$$\begin{array}{r} 3^1 30_{\text{five}} \\ + 242_{\text{five}} \\ \hline 1122_{\text{five}} \end{array}$$

$0 + 2 = 2$

$3 + 4 = 7$

$7 \div 5 = 1 \text{ r } 2$

$3 + 2 = 5 + 1$

$= 6 \div 5$

$= 1 \text{ r } 1$

Activity

Add the following in base five.

1. $2_{\text{five}} + 2_{\text{five}}$

2. $211_{\text{five}} + 44_{\text{five}}$
3. $13_{\text{five}} + 44_{\text{five}}$
4. $44_{\text{five}} + 32_{\text{five}}$
5. $234_{\text{five}} + 231_{\text{five}}$
6. $4_{\text{five}} + 4_{\text{five}}$
7. $121_{\text{five}} + 212_{\text{five}}$
8. $34_{\text{five}} + 43_{\text{five}}$