

Lesson Plan/ Learning Plan	
Topic- Factors and Multiples	Grade: V
Concept	Factors , Multiples , Prime factorization , LCM and HCF
<u>Mapping of skills/competencies/attitudes</u>	<u>Skills:</u> Thinking skill and Social skill <u>Attitudes :</u> Curiosity, Enthusiasm and Confidence. <u>Competencies Mapped:</u> • Critical Thinking- Reasons effectively , makes judgements and decisions. • Creativity- Generates Ideas • Character- Grit , Zest ,Self Control
Lesson Plan Duration :	12 days
Learning Engagements for Active Learning:	Brainstorming , Bundling , through ICT (PPT) , Four corners , Slap , Graphic organizer-(Venn diagram /factor tree) ,Question of the Day , Student structured questions
Questioning Technique/s to be Used :	• Pose ,Pause,Pounce and Bounce • Probing questions
Learning objectives: By the end of the topic, the learners will be able to: • Define multiples and factors through class activities. • List the multiples and factors of given numbers by identifying them from the PPT. • Explain the steps evolved in finding LCM and HCF by doing them step by step in their notebooks. • Apply the knowledge to solve problems related to real life situations by asking significant questions that lead to a better solution. • Construct word stories related to real life situations by using wide range of ideas.	
Annexure 1 (Kolb's Model)	
Connecting to Prior knowledge <i>(How do you check what learners already know?)</i>	Day-1 Learning engagement. The facilitator will check the prior knowledge of the learners of Prime and composite numbers through a class activity. <u>Bingo!!</u> Facilitator will explain the rules- Everyone has to stand in a circle. Child so and so will start the game . You all will speak numbers from 1 to 50 but the participant who gets prime number will say “ Bingo ” instead of the number. For example- 1 – Bingo – Bingo -4- Bingo -6 so on. One who forgets to say Bingo will be out. The players left will be winners. (It would be a fast

	recap of the concepts in a joyful way.) • This activity will help students reap prime and composite numbers. • The facilitator will then discuss the numbers replaced with Bingo to get the list of prime numbers between 1 to 50. It will also be highlighted that 1 is neither prime nor composite number, it is a unique number. <u>Character-Zest</u> <u>Rubric-</u> • Is enthusiastic and willing to learn and participate
Resources Required:	Blackboard, Smartboard, chart papers, A4 sheets, Pair of dice, Hoopla, Flash cards, live objects from the classroom and around the classroom
Implementation of lesson plan - Stage 1	
	Day 4- Learning engagement-1 The facilitator will ask introductory questions like- * How are you different from each other? * What is common in all of you? to make the learners understand the concept of common. A tuning in activity will be conducted to understand the common factors. <u>“Four Corners”</u> 1. The facilitator will make 4 corners in the class. (first one -factors of the 40, second corner-factors of 60, third corner – neither the factor of 40 nor 60 and the fourth corner -factors of both 20 and 30) The facilitator will prepare number cards from 1 to 45. (or according to class strength) and will give one card to each student randomly. Facilitator will first tell about first three corners, the students will be asked to find out the factors of 40 and 60 (by any method) at the back of the card, check their numbers and stand accordingly in three corners. Once every one will stand the facilitator will open the fourth corner and will ask the numbers that are the factors of both 40 and 60 have to stand in the fourth corner. The facilitator will explain that the numbers in fourth corner are the common factors of

40 and 60 and the highest number among them is the HCF. One more round using different set of numbers will be played for better understanding.

Critical Thinking (Make judgements and decisions).

Rubric-

- Effects critically on learning experiences and processes

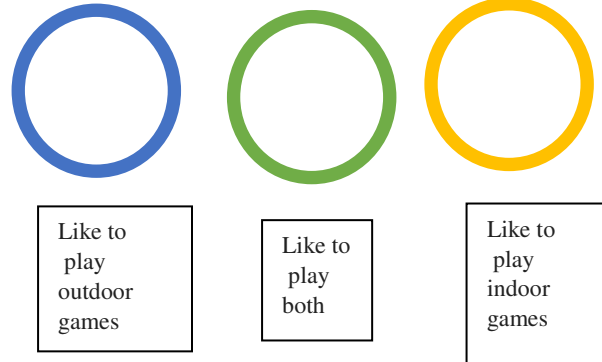
Day-6 Learning engagement -1

Hoopla!! AHA! Moment

This is very simple and interesting outdoor activity. The facilitator will join hoopla and make 3 big hoopla. All the three hoopla will be kept on the floor. Facilitator will first give only two choices.

- Students who like to play indoor games.
- Students who like to play outdoor games.

Those who like to play indoor games will stand in yellow hoopla and those who like to play outdoor games will stand in blue hoopla.



Once every one will stand according to their preference of playing games , then facilitator will give third choice . Those who like to play both will stand in the green hoopla. Many students will now leave their place and come in the green hoopla. From this the facilitator will enhance **Critical Thinking –(Uses system thinking)** as the learner analyses how differences and similarities are shown through Venn diagram.

Day-7 Learning engagement -1

SLAP- AHA! Moment This is very interesting

	activity in which students listen to the clues and try to hit the number before their groupmates do. 1. place set of number cards face up on the table. 2. students stand in a circle around the table. 3. Facilitator will ask the factors of different numbers. for example- 1,3 and 5 are my factors (card no.-15) , I am the factor of every number (card no.-1 so on.. 4. The student who slaps the correct card keeps the card. The student with maximum cards is the winner of the game. . (It would be a fast recap of the factors in a joyful way.) <u>Character- self control</u> <u>Rubric-</u> • Is attentive and exhibits self control. Day-8 Learning engagement -1 <i>[Brainstorming]</i> 1. The facilitator will bring two students to the front of the room. Next, bring 4 students to the front of the room, keeping them apart from the first two. Next bring 6, then 8. (2, 4, 6, 8) 2. Learners will be asked to look at each group and to tell something about the groups. 3. Facilitator will allow for responses and discussion. (Responses may include number of girls, boys, etc., but many will recognize the increase by two each time.) 4. This will lead the responses to 2, 4, 6, 8 and ask how many students would be needed in the next group. (10) The facilitator will take the discussion to multiples of different numbers. The facilitator will check the responses and help the learners in case the number given by them is not next multiple of 2 .
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Proceeding further

(What strategies will be used in the class to achieve the lesson objectives?)

Day 2 Learning engagement -1

Facilitator will explain the concept of Prime factorization.

Listen and do.

- Write the number.
- Divide it by the smallest prime number.
- Divide the quotient by the same number.
- Continue the process, till the quotient is 1

The facilitator will explain the steps of Prime factorization by division method.

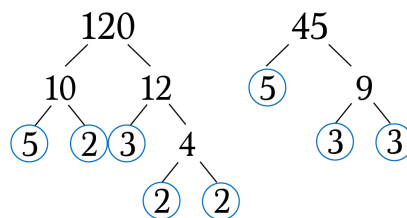
$$\begin{array}{r|l} 2 & 36 \\ 2 & 18 \\ 3 & 9 \\ 3 & 3 \\ \hline & 1 \end{array}$$

Prime Factorization of $36 = 2 \times 2 \times 3 \times 3$

Day 3- Learning engagement 2

Guided Practice

The facilitator will explain the method and steps of prime factorization by tree method. Students do a few sums in the notebooks. This will require some guidance and facilitation by the teacher.



(The facilitator will ask the learners for a reason

- to call it a tree method.
- To circle prime numbers.

Day 4- Learning engagement -1

Facilitator will explain the method of finding out HCF through prime factorization method.

Prime factors of 28, 42, 56

$$28 = \underline{2} \times 2 \times \underline{7}$$

$$42 = \underline{2} \times 3 \times \underline{7}$$

$$56 = \underline{2} \times 2 \times \underline{7} \times 2$$

Underline the common prime factors.

$$2 \times 7 =$$

Find the product of the common primes –

$$2 \times 7 = 14$$

$$\text{HCF} = 14$$

Day 5- Learning engagement -1

Facilitator will explain the method of finding out HCF by tree method

Day-6 Learning engagement -2

Through ICT

A PPT is shown to help students find factors.

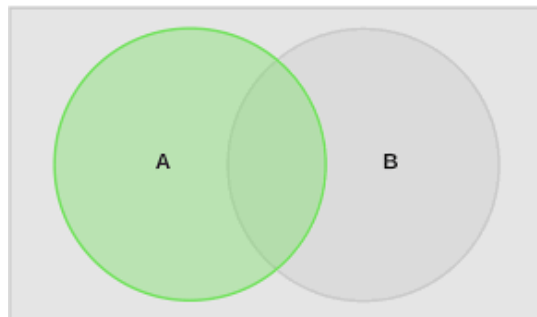


Day 9 - Learning engagement -1

Facilitator will explain the method of finding out LCM by division method

Day 10 - Learning engagement -1

Facilitator will explain the method of finding out LCM by Venn diagram.



Learning Logs <i>(How learners keep a track of what they are learning, includes reflections)</i>	Day-1 Learning engagement – 2 <u>Guided Practice</u> Definition of factors , multiples ,prime numbers ,co prime numbers ,prime factorization , composite numbers, twin prime numbers and fill in the blanks related to prime and composite numbers from the spiral. Day 2 Learning engagement-2 <u>Guided / Independent practice</u> The learners now use their understanding to find prime factors of set of numbers by division method. Practice sums will be given from the spiral page no.4 Q1. (a ,b,c,d, e) The facilitator will check for as how learners reflect on their understanding of prime factorization by division method and will intervene in case composite numbers are written instead of prime nos. Day-3 Learning engagement 3 <u>Guided/ Independent Practice</u> Learners will now use their understanding a make few more factor trees with different numbers. Practice sums will be given from the spiral page no.4 Q2. (a ,b,c,d, e) <u>Critical Thinking – Reflects critically on learning experiences.</u> The facilitator will check the responses and will provide the correct answers Day 4- Learning engagement 2 <u>Guided/ Independent Practice</u>

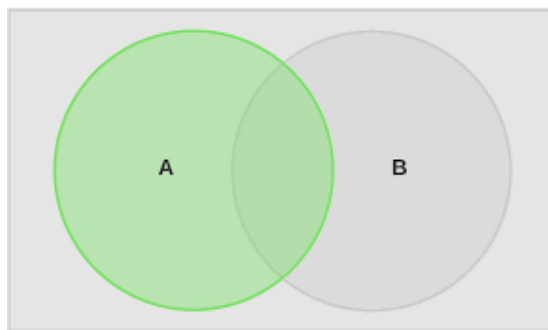
Learners will now use their understanding of HCF and solve sums from the spiral page no.5 Q4. (a.b.c.d.e)

Day 5- Learning engagement 2
Guided/ Independent Practice

Learners will now use their understanding of HCF by tree method and solve sums from the spiral page no.5 Q4. (f,g,h,i)

Day-7 Learning engagement -2
Guided / Independent Practice

The learners now use their understanding to find out HCF by Venn diagram. Practice sums from spiral page no.6 Q5. (a,b,c)



Facilitator will intervene in case factors are written wrong or incomplete.

Day-8 Learning engagement – 2

Independent Practice

The learners frame the definition of multiples with examples and related sums in the notebook.

The facilitator will check the responses and will guide them accordingly.

Day-9 Learning engagement -2
Guided / Independent Practice

The learners now use their understanding to find

	out LCM of the given numbers by division method. Practice sums from the spiral page no.6, Q6. (a,b,c,) Day 10 - Learning engagement -2 <u>Guided / Independent practice.</u> Facilitator will explain the method of finding out LCM by Venn diagram. Practice sums from spiral page 6 Q7. (a,b,c,)
Lesson Plan : Stage 2	
Formatives/Unit test <i>(How will the facilitator check for comprehension?)</i> <u>*Integration of Arts/ICT</u>	<u>Day -11 (Check for Understanding)</u> Oral recapitulation through Dice game- Two dice will be thrown together the numbers that turn up on the faces of the dice (after making two digit number) will be written on the board. This way many times the dice will be rolled to get more numbers and learners will tell the numbers of which the written number is the multiple. Ex- from two dice number formed 3 and 2 = 32 , learners' response could be = 2 , 4 ,8 ,16 .This way variety of questions will be asked related to the concepts covered. The learners will not only identify the multiples but also will learn that one number can be multiple of many and will also observe that all the numbers derived are also multiple of smaller numbers. The responses by the learners will help the facilitator check for their understanding of the topic. <u>Critical Thinking- Makes Judgements and Decisions</u> <u>Rubric-</u> • Is able to interpret information and draw conclusion.
Teacher Interventions <i>(Addressing the concerns and issues faced during the transactions)</i>	Day-3 Learners may circle all the factors in the factor tree, ,so facilitator will have to keep a close check that only prime numbers are circled.

	Day 4 The students may not be able to stand in the corner of common multiples . The facilitator will help them find their correct corner to develop their understanding of common multiples. Day-9 Learners may write composite numbers while finding LCM. Facilitator will take care that learners use only prime numbers.
Extending the Lesson Further <i>(Creating through Active experimentation)</i>	Day 10 Learners will solve word stories based on real life situations independently. for ex.- <i>4 bells of the temple toll at interval of 5,6,7,and 8 seconds respectively. After how much time will they toll together again.</i> <u>Research work - Big question.</u> • Is there any relation between factors and multiple ? If yes then what.
Summative Assessment <i>(How will the facilitator check that learning objectives have been achieved?)</i>	
Day-12 <u>Students-generated Test Questions.</u> Learners will be asked to develop a small test questions / sums from the concepts they have understood. Facilitator will collect and randomly distribute all the test papers. Anyone can get anyone's test paper. Learners will solve the test questions and return it to the child whose name is written on it. The child who has set the test questions will check the answers. The facilitator will finally cross check all the test sheets. <u>Creativity- Generates ideas</u> <u>Critical thinking- Reasons Effectively</u> These competencies will be enhanced as learners will not only show creativity while generating questions but will also apply their understanding of the topic while solving the questions framed by others. Rubrics- • Creativity- Creates new and worthwhile ideas using both existing and new knowledge. • Critical thinking & problem solving – Learner uses various types of reasoning as appropriate to the responses..	