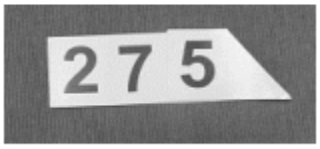
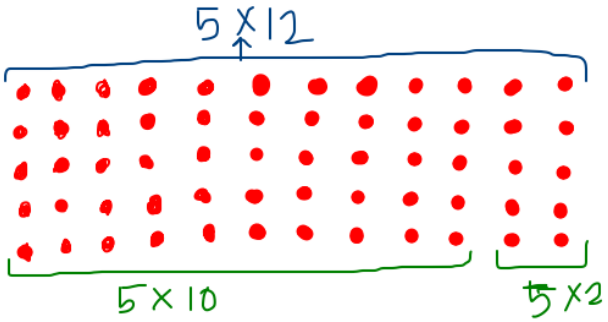
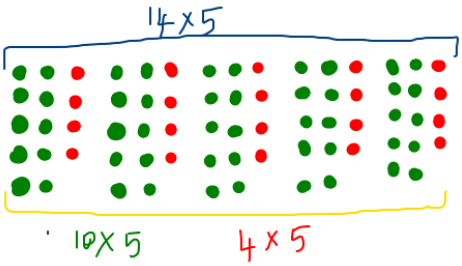
			
b	Numbers from 100 to 500.	Let students explore numbers from 100 to 200 using place value cards. And allow students to split the numbers into nooru - hatthu- bidis.    	Worksheets 2c 6.1 to 2c 6.8

Level 3a

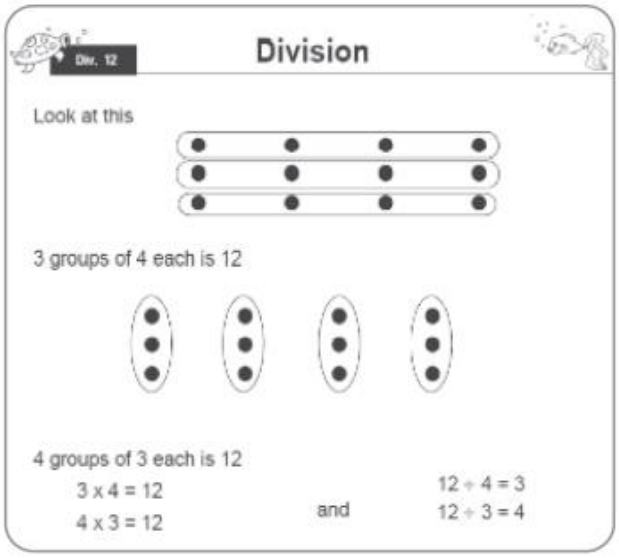
3a	Activity	Process	Materials
1	**All operations with numbers 1-500**		
a	Addition of numbers till 500.	Using place value system and using number line(as it was done for two digit numbers	Worksheets 3a 1.1 to 3a 1.5
b	Subtraction of numbers till 500.	Using place value system and using number line(as it was done for two digit numbers	Worksheets 3a 1.6 to 3a 1.10
c	Before - after		Worksheets 3a 1.11 to 3a 1.13
d	Greater than – less than		Worksheets 3a 1.14 to 3a 1.16

e	Ascending - descending		Worksheets 3a 1.17 to 3a1.19
2	MULTIPLICATION 2 digit numbers by splitting the number		
a	Multiplication: one digit x two digit numbers. Eg: 5 X 12	The session will start with a 'word problem'. Example: *5 students can sit on a bench. If there are 12 benches in a class, how many students can sit on these benches?* If the students are familiar with multiplication, they should be able to say that this problem is to be solved by adding 5, twelve times. (if they are not able to say that go back to the basic idea of multiplication and re-teach it) Once students identify the solution of this problem is to add 5, twelve times, we can write the solution mathematically as 5 x12. Now we don't know what 5x12 is. We can find it by adding 5 twelve times. But it will	

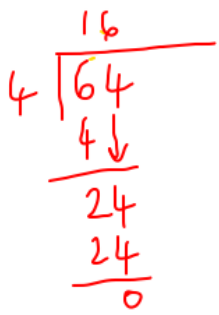
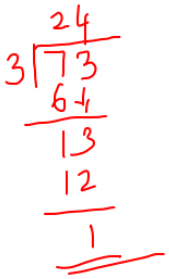
		again take some time. Let's create an image of this problems (5x12) When we look at this we can identify that 5 x 12 can be split into two parts 5x10 and 5x2. Both 5x10 and 5x2 we already know since we created the multiplication table and memorized it.  SO I can write 5 x12 = 5 x10 + 5x2 = 50 + 10 =60. Do a couple of more questions like this, till they are comfortable with the new concept. Then encourage students to come up with their own word problems and solve the problems with the same logic. Then make the questions a bit more complex. For example: 6 x 42 we can decompose (or split) as: 6 x10 + 6x10 + 6x10 +6x10 + 6 x 2 = 60 + 60 + 60 + 60 + 12 = 242) There is a need to do as many problems like this as possible to strengthen the concept.	
b	Multiplication: two digits x one digit numbers. Eg: 14 x 5	Again, start the conversation with a word problems. Eg: *One notebook costs 14 rupees. If we buy 5 notebooks, what will be the cost of it?* So students will be able to say that we need to do 14 x 5.	

		Once we establish that that's what we need to do, we can draw a visual representation of it. The situation is such that 14 need to be added 5 times.  If you pay attention we can see it as 10 x 5 and 4 x 5. So 14 x5 = 10 x5 + 4x5 = 50+20 =70. So this kind of questions can also be decomposed (split) and solved. 32 x 4 = 10 x4 + 10x 4 + 10 x4 + 2 x4 = 40+40+40+8=128 Make diagrams as much as possible.	
c	Independent	Worksheets to do one digit by two digt and 2 digit by one digit multiplications	Worksheets 3b 2.1 to 3b 2.14

Level 3b

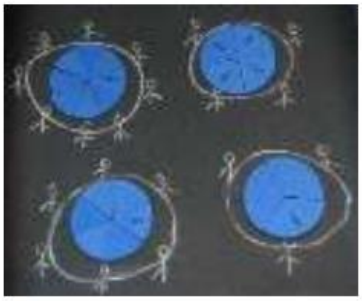
2c	Activity	Process	Materials
1.	Relationship between division and multiplication.	It is quite possible that children may intuitively use multiplication facts to arrive at the answers for division problems. In fact, children who have internalised multiplication concepts quite thoroughly may straight away use multiplication facts by converting the division problem into complementary multiplication problem. Example: 12 ÷ 4 may be converted to: "4 times which number equals 12?" However, not all children may see the connection. Hence it becomes necessary for the teacher to lead the children into this discovery by asking directed questions.  How many square pieces did you have at the start? 12. Into how many rows are you going to distribute the 4. How many pieces have you placed in each row? 3 pieces. How do we state this as a division fact? 12 ÷ 4 = 3. Can you describe this arrangement (as shown in the picture) as a multiplication situation? 3 x 4 = 12.	
b	Independent	Creating division problems from multiplication problems and vice versa	Worksheets 3c 1.1 to 3c 1.3
2.	Division between two digit and one digit numbers. the division algorithm –	*Share 48 biscuits among 4 friends.*	

	without remainder	This is shown as 4) 4 8 T U 1 4) 4 8 Share out tens first – 4 Each gets 1 ten 0 8 4 tens are given out altogether 8 units to be given out T U 1 2 Each gets 2 units 4) 4 8 8 units are given out altogether – 4 0 8 – 8 0 We start with 'tens'. It is important to point out to students that we start from the tens position. Ask the question how many tens (At each point, read the number with its place value to draw the student's attention to it). *Can we share it equally amongst 4 people*? Each one gets 1 ten (emphasize the place value again). This is recorded in the division problem as 1 ten in the tens place over 4. It is important to emphasize the place value all the way through. Now as we subtract 4 tens given away, we move to second step. Many children take time to learn two step division problem; hence we should go very slowly, articulating every action. We can even use a downward arrow to indicate '*bringing down the next number'*. This focuses the child's attention on it, makes him understand what is happening and serves as a visual aid. We now take down 8 units and each gets 2 units which is then recorded on top of 8 as quotient. After subtraction there are no units left. *So there is no remainder.*	
b	Independent		Worksheets 3b 2.1 to 3b 2.5
3	Division between two digit and one digit numbers. And Mastering	*Share 64 rupees among 4 people* We will start the conversation with the idea that we need to start from the tens. So we have 6 tens and it	

	the division algorithm – with remainder	needs to be divided between 4 people. *So how many tens, one person will get?* One person will get one ten. SO we will write it above 6 at the tens position. Now we have distributed 4 tens, we subtract it from 6 tens we have 2 tens remaining, we have 4 units also to distribute so we bring it down with 2 tens. So now, we have 24 rupees to be divided between 4 people. If we check the multiplication table of 4, we can identify that 24 by 4 is 6. So we write it on the top 4 at the units place. We subtract 24 from 24 and have nothing as remainder.  In the same way we can discuss the division *with remainder* as the example shown below.  	
b	Independent	*Worksheets for division with remainder*	Worksheets 3b 3.1 to 3b 3.5

Level 3c

2c	Activity	Process	Materials
1	**Unit fractions**		
a	INRODUCTION	Tell the story of a cake shared among different groups of students.  *There are 4 tables and each table has one cake on it. The first table has 4 students, the second table has 3 students, the third table has 77 students, and the fourth table has 2 students.* *Arun can decide where he sits and the cake will be **divided equally** among the people in one table.* *If Arun wants the biggest piece of cake, where will he sit?* *Where will he sit of he wants the smallest piece?* Make the story dramatic and if you can actually make a session with students sitting the way it is described in the story, it will be fantastic. Use the Fraction material to show how the cake will be divided in each table. *If a table has a total of 4 people and the cake is divided among them equally one person will get "one fourth or 'kaalu" of the cake. That is the name of one piece and the*	

		symbol for it ¼.  In the same way teach the name and symbol of each fractions ½, ¼, 1/3, 1/8 etc. Let students explore them and arrive at a conclusion on which one is bigger by comparing the size of each piece. 	
b	Independent	*Worksheets for unit fractions*	Worksheets 3c 1.1 to 3c 1.5
2.	Non Unit Fractions	Non unit fractions are to be introduced as a collection of unit fractions. For example if we have 3 pieces of 1/8 it is called 3/8. And if we have 5 pieces of 1/3 it is called 5/3 etc. This can be a teacher led activity and students can work in pairs. One student can ask to show 3/8 and the other student needs to show three pieces of 1/8 from the fraction kit.	
b	Independent	*Worksheets for non-unit fractions*	Worksheets 3c 2.1 to 3c 2.5
3.	Equivalent fractions	Let students explore the different fractions and find equivalency among them. For example take a piece of ½ and ask students *how many ¼s are required to make the size of ½.*By exploring it they will realize that 2 pieces of ¼ is required to make a ½. That means ½ is equal to 2/4. Repeat the exercise with more fractions and try to find the equal fractions.	Worksheets
b	Independent	*Worksheets for equivalent fractions*	Worksheets 3c 3.1 to 3c 3.5