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NEW **THIRD EDITION**
COUNTDOWN
ENHANCED BLENDED EDITION

Lesson Plans



SPACE FOR TITLE VERSO

BOOK 1

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Whole Numbers

Students Learning Objective:

- Write ordinal numbers from first to twentieth
- Write numbers 1-100 in words
- Read numbers up to 999
- Write numbers up to 999 as numerals
- Recognise the place value of a 3-digit number
- Identify the place value of a specific digit in a 3-digit numbers
- Compare 2-digit numbers with 3-digit numbers (hundreds, tens, and ones)
- Compare 3-digit numbers with 3-digit numbers (hundreds, tens, and ones)
- Count backward ten steps down from any given number
- Arrange numbers up to 999, written in mixed form, in increasing or decreasing order
- Count and write in 10s (e.g. 10, 20, 30, ...)
- Count and write in 100s (e.g. 100, 200, 300, ...)
- Identify the smallest/largest number in a given set of numbers
- Recognise that 1000 is one more than 999 and the first 4-digit number

Suggested Time Frame: 8-10 lessons

Starter Activity: Ask pupils what the biggest number is they can think of. Some of them will repeat what they have learned in class, while some may volunteer information planned at home. Let them challenge each other's ideas and discuss for about 30 seconds, before drawing a number line on the board. Then ask them what the biggest number is they have learned in class is. The answer should be 100. Label the number line with 0 on the left, 50 in the middle, and 100 on the right. Ask the class if anyone knows how to write the number after 100. Tell them that they are welcome to guess if they are not sure. If they do know, extend the number line slightly and write 101 on the board. Write up to 111, and explain that in the tens, the last digit goes up by only one, so it is the same in the hundreds. Invite volunteers to the board to write (in numerals) 102 to 120. Once this is done, ask the pupils if they have any idea how these numerals are read. Give them some time to guess, but if they are not able to figure it out, read the numbers aloud and have them repeat after you. They might find it strange that the word "and" is present in a number but tell them that this should only make it easier to remember. To make it simpler for them to understand, explain that the last two digits of all the numbers are said and written just as they are in between 0 and 99. The fact that they now have a 1 before them simply means that they now must be said as "one hundred and...".

Lesson Commentary:

- Give pupils a word list of numbers 1 to 100 and ordinal numbers 1 to 20. Make groups of. Since they already know most of these spellings, allow them one day to revise at home. The next day, hold a spelling bee in class. Tell them that you will be saying a number aloud, and they may discuss the spelling amongst each other, within their groups. Explain them that from every group, group member will be allowed to answer. The chosen group member will have 10 seconds to write the number on the board correctly. If they are wrong, another group will have a chance to raise their hand. If the group spells the number correctly in the first attempt, they will be rewarded 5 points. However, if they get it right in the second attempt, they will be awarded 3 points. If after the third attempt, the number has still not been spelled correctly, make note of it so that you can be sure to go over it later. Do as many numbers as possible, but do not spend more than 20 minutes on this activity. At the end, award the titles first, second, and third. *This activity pairs with New Countdown Book 2, Page 5 and 8 and Math Lab 2, Page 2.*
- Remind the class about place values in 2-digit numbers. Then ask a volunteer to write any 2-digit number on the board. Point to one digit at a time and ask them what they think the place value of that digit is. Go from smallest to biggest. Once the place values have been written on the board, add 1 in front of the number, making it a 2-digit number. Tell them that if the right most digit is in the ones, and the middle one is in the tens, what category do they think the left most digit should fall into. Give them some time to guess that it is in hundreds, and revise with them to help them get to that conclusion on their own. Call out numbers between 100 and 999 and call on pupils individually to write them on the board and point out the place value of each digit as they write it. Make sure every child has a turn. Ask the pupils to write the numbers 100 to 999 in their notebooks as homework, but break it up into 100 to 250, 251 to 500, 501 to 750, 751 to 999. Assign these over the course of two weeks, and do not assign any other homework as they are doing this.
- If pupils are not able to figure out the place value of hundreds write 1 on the board and point out that it falls into the category of ones. Then write a 10 and point out that the 1 in 10 falls into the category of tens. At this point they will hopefully have noticed the pattern, so when you write 100 on the board, and ask them what the place value of the 1 is, they should be able to guess hundreds.
- Call out 3-digit numbers at random and ask pupils to only make note of the digit that is in the tens. After tens numbers, switch to the hundreds.
- Tell pupils that they should be prepared for random spelling tests throughout the next couple of weeks for the numbers 1 to 100, and ordinal numbers 1 to 20. Whenever there is free time at the beginning or end of the class, do 10 to 20 words at a time. This way, pupils will be sure to keep revising the spellings, and remember them. Do not stretch this objective more than four weeks, and make sure that all the words are covered.

- Put 2-digit and 3-digit numbers on pieces of paper, or card, and place them face down at the front of the class. Ask pupils to pair up and tell them you will be playing a game of more than or less than. This is how the game will work: a pair will come to the front of the class, and the teacher will flip a coin. If the coin lands on heads, the larger number will win. If it lands on tails, the smaller number will win. The pair will have to pick one card each and hold them to their foreheads, so everyone but them can see what number they have. Make sure the numbers are written clearly enough for the entire class to be able to see or have the rest of the pupils move forward. Once the cards are on their foreheads, the class will have to identify the winner. Ensure that you put enough cards down so that each pupil gets a new number, and once one has been picked up, remove it from the pile so that it is not repeated. Also, be sure to put in only about a third as many 2-digit numbers as 3-digit numbers. This activity pairs with Math Lab page 19.
- Using the 3-digit number cards from the previous activity, ask the pupils how they would find a number 10 steps down from these numbers. They may initially be nervous about the size of the numbers but remember that they only need to go down ten steps. Start with numbers like 175 where only the middle digit will change. Tell them that they can ignore the 1 and should just focus on finding the number ten steps down from 75. Remind them that place values will help here. Since 7 is in the place of the tens, that should go down by 1 ten, so the answer should be 165. Only explain this to them if they fail to figure it out on their own. Invite a volunteer to the board and give the class a number. to subtract 10 from. Give the class exactly 30 seconds to try and come up with the right answer and ask them to make note of it in their notebooks. Then ask the volunteer at the board to write the number on the board and keep writing the numbers backward until they have written ten, thereby finding the number ten steps down. So, for example, if the original number was 367, the pupil at the board would write; 366, 365, 364, 363, 362, 361, 360, 359, 358, 357. It would then become clear that the correct answer is 357. Do this until the whole class gets the answer right. If some pupils are struggling, ask them to work in pairs with pupils who are not struggling. Once they are up to speed, introduce a number like 205. Give them a minute to try to find the answer before having the volunteer try it on board. Explain that the value of the hundreds also changes because the value of the tens cannot go lower than 0. Also try a number like 103 that will turn into a 2-digit number.
- Give pupils five sets of five 3-digit numbers on the board and ask the pupil to arrange the sets in ascending and descending order. They should do this individually at their desks, and then swap work so that they can peer review. Instead of giving them the right answers for the review, tell them they can volunteer to write the correct answer on the board. If they do not volunteer, do not force them.
- Write a group of 10 numbers on the board, all 3-digit, and ask the pupils to spot the biggest and the smallest. Repeat these 3 times with different sets of numbers, then tell them, that instead of only identifying the biggest and the smallest, they need to arrange the numbers in ascending order. Explain that this means from smallest to biggest.

Then give them a fresh set and ask them to now arrange these numbers in descending order; meaning from biggest to smallest. Do this a few more times so that they can get the hang of it, alternating between descending and ascending. In the last set, slip in the number 1000. Most pupils will probably realise that it is the largest number given the fact that it has four digits. If none of them ask about it, ask them if there are any numbers on the board that seem unfamiliar. Once they identify the odd one out ask them if they can guess what number comes before 1000. If they do not immediately guess 999, refer to the Let's Pause on page 18. Explain that 1000 is the first 4-digit number.

- If pupils are having trouble writing the 4-digit numbers, meaning that they do not realise that there are larger numbers than three-digit numbers, they may need to revise place value.
- This activity is best done outdoors. Bring two kinds of balls to class. Half of the balls should be small, and the rest should be slightly larger. You use table tennis balls and cricket balls. Tell the pupils that the smaller balls are tens, and that the larger balls are hundreds. Then ask them to pair up and give each pair a basket. Take the class into an open area and ask them to form a circle. Tell them that the goal is to get as many balls into their baskets as possible, so that if they add all the tens and hundreds together, they get a large number. When you say go, they can break out of the circle and start grabbing balls. However, they need to make sure to keep their baskets with them so that they don't get confused for someone else's, and they also should try to stay close to their partner so that they can both put balls in the basket. When you say go, start rolling the balls on the ground in every direction. There should be many more balls than pupils. Make it clear beforehand that they are not allowed to snatch each other's balls, and any pushing or shoving will lead to disqualification. Once all the balls have been picked up, ask them to stop and count. Remind them that the larger balls are equivalent to 100 and that the smaller balls are equivalent to 10. Ask them to compare totals and assign themselves ranks using ordinal numbers. If anyone has a total higher than 1000 then tell them they should stop counting and just declare their total as 1000. This activity pairs with Math Lab page 21.

Exercise Commentary:

Pages 2-10 are revisional exercises from the previous class that cover all sub-topics such as ordinal numbers, comparing and ordering numbers, place values, and some basic addition and subtraction. Page 10 revises 100 as the first three-digit number. Pages 11-14 emphasises on the place value of 3-digit numbers using base blocks and abacus. Similar questions can be divided as classwork and homework, such as Question 1, 3 and 4 can be done as classwork while Question 2 and 5 can be given as homework. Additional worksheets can also be provided to students. Pages 16 and 17 are exercises to write numbers and number names.

Pages 18-25 focus on ordering and comparing numbers. Work with Page 19 along with

the students so it's easier for them to do the activity on Page 18 independently. Page 20-22 deals with comparing 2- and 3-digit numbers. Once students can order numbers, Page 20 which compares 2-digit numbers with 3-digit numbers can be done as homework as well. A crocodile's mouth can be cut out from cardboard to demonstrate in class. Pages 21 and 22 compare two 3-digit numbers.

Review on Page 25-27 which covers all the concepts on the chapter and provides a collection of questions that can be used to assess the knowledge of students at the end of the unit.

Math Lab Tie-In: Math Lab 2, page 2 to 22.

Plenary: Ask pupils if they think it is important to have the numbers go so high. What would they need to count that would need such large numbers? When they come up with some examples, ask them, as a creative exercise, to try to come up with a way to count a large quantity of objects only with numbers up to 100. They may suggest that you could say, if you were trying to count 400 objects, that there were four hundred. Point out that four hundreds is quite close to four hundred. Show pupils that although it can seem like there are so many numbers to remember, once they know how to count to hundred, the rest are quite easy to remember. Then ask them if they enjoyed working with number patterns. Did they find them useful? Were they complicated or easy? Point out that once they are confident with number patterns, addition would become much easier. Let them discuss this for five minutes.



Addition

Students Learning Objective:

- Add ones and ones
- Add ones and 2-digit numbers with carrying
- Add 2-digit numbers and 2-digit numbers with carrying
- Solve real life number stories, involving addition of 2-digit numbers with carrying
- Add 3-digit number and ones without carrying
- Add 3-digit number and 2-digit number without carrying
- Add 3-digit number and 3-digit number without carrying
- Solve real life number stories involving addition of 3-digit numbers without carrying
- Add 3-digit number and 1-digit number with carrying of tens and hundreds
- Add 3-digit number and 2-digit number with carrying of tens and hundreds
- Add 3-digit numbers with 3-digit numbers with carrying of tens and hundreds
- Solve real life number stories involving addition of 3-digit numbers with carrying of tens and hundreds

Suggested Time Frame: 3-4 lessons.

Starter Activity: Previously pupils learnt simpler number operations. Ask them if they ever had a hard time adding or subtracting, and if they think they are good at it. If they say they are, ask them if they think they could be better, and if they say they are not, ask them how they think they could improve. After they have answered, ask the class to add 20 and 20. Then ask them to add 50 and 10. Then, ask them to add 26 and 38. Point out that with the third sum, although the numbers were smaller, it is a little bit trickier to calculate, because here the addition involves carrying. Instead of giving them this reason, simply say that it is a hard question, and that you can teach them a math trick to make it much easier.

Lesson Commentary:

- Tell pupils that you are doing an addition activity. Write sums on the board but use the children as counters to solve them, by having them make groups at the front of the class. So, for instance, if the sum is $3 + 5$, then three children will go in one group, and five will go in the other. The rest of the class will then have to figure out what the total will be when the group is combined. The first three times only use single digit numbers. And as they add the groups together, make note of the working on the board, like so:

$$\begin{array}{r} 3 \\ +5 \\ \hline 8 \end{array}$$

After three sums of one-digit numbers have been done, add a single digit and a double-digit number that involve carrying. For example, 13 plus 8. Make your group of 13 and 8, and then ask the class to help you. Tell them because 13 is a two-digit number, it should demonstrate place value. Arrange the pupils into two lines, one of three and a one of ten. Then explain that the line of 8 is not divided because it is a single-digit number. Explain to the pupils that when adding, one must go by place value. Ask the class to help you as you do this. Follow along on the board as you add the 3 and the 8. As the pupils will know, the answer will be 11. Then point out that since 11 will clearly not fit in the one place the 1 will carry over to the tens. Show this on the board by adding one to the tens but show this practically by moving ten of the pupils from the group of 11 to the group of 10. Make sure they understand that the reason you moved 10 and not 1 is that the one that carried was in the tens. At this point the board will look like this:

$$\begin{array}{r} +1 \\ 13 \\ +8 \\ \hline 21 \end{array}$$

Repeat this up to three times with one single-digit and one double-digit number in each sum, and then three times with only double-digit numbers. This pairs Pages 29-30 and 33-34 of New Countdown Book 2 and with Math Lab page 23.

- Give the pupils a couple of examples of number stories that include carrying and ask them to help you solve them on the board. Only add 2-digit numbers. Then ask them to make up their own number stories based on real-life experiences.

The only rules are that they must include double digits and carrying. As they come up with them, they may present their stories to the class, and the class will make note of the sum. So if the number story is, “Zoha invited 15 people to her birthday party. Her twin brother, Zain invited 17. How many people are coming to the birthday party in total?”, the pupils should write:

$$\begin{array}{r} +1 \\ 17 \\ +18 \\ \hline 32 \end{array}$$

Give them 7 minutes to present as many number stories as possible. *You can conduct this activity while doing Page 34 of New Countdown Book 2 in class.*

- This activity is best done outdoors. Using chalk, or tape create three parallel number lines on the ground, as shown below:

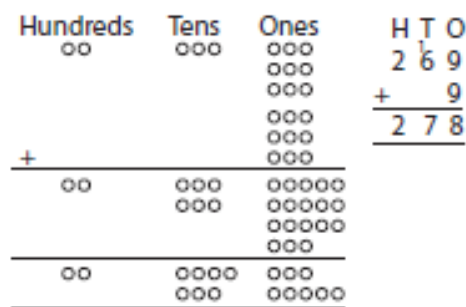
0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9

Explain each line shows one place value, so the left most will portray the hundreds, the middle one the tens, and the right most, the ones. Tell pupils to use this number line to solve the following questions.

- | | | |
|---------------|----------------|----------------|
| a. $300 + 7$ | b. $212 + 14$ | c. $350 + 110$ |
| d. $450 + 5$ | e. $720 + 29$ | f. $100 + 120$ |
| g. $320 + 9$ | h. $540 + 25$ | i. $820 + 100$ |
| j. $950 + 2$ | k. $101 + 80$ | l. $621 + 241$ |
| m. $466 + 11$ | n. $300 + 600$ | o. $356 + 223$ |

Have three pupils volunteer to act as markers on the number line and ask the other pupils to help them figure out how to move. Tell them that they should go one place value at a time, always going from left to right. For instance, to solve $350 + 110$, they should start on 3, 5, 0, respectively. To work out the sum, the pupil on 0 will stay put, the 5 will move up one, and then the three will also move up one. Once the question bank has been solved, present pupils with up to 5 number stories that they must solve using the number lines. Make sure that they number stories involve three-digit numbers and no carrying. Here are some examples of number stories you can tell:

- Lyla goes to a school with 350 children, and her brother goes to a school with 400 children. How many total pupils in both schools?
 - Hassan needs to buy a book for Rs 230. At the store, he remembers he also needs a notepad which costs Rs 225. How much will he pay if he buys both?
 - There are two flights landing at the airport at 6 o' clock. One has 115 passengers, and one has 164. How many passengers in total will land at 6 o' clock?
 - Kamran is planning his wedding. He has 140 family members and friends that he would like to invite, while his wife has 210. How many wedding invitations will Kamran need to have made?
 - Farah is writing a book. She has already written 620 pages but is planning to write 350 more. How many pages will her book have in total?
- Solve the following questions in front of the class. Explain that you will be using counters to represent each place value. For example:



- | | | |
|--------------|---------------|----------------|
| a. $304 + 7$ | b. $260 + 62$ | c. $372 + 422$ |
| d. $798 + 7$ | e. $535 + 82$ | f. $103 + 399$ |

As we can see with the counters, the ones column initially had eighteen, but since there can only be one digit in each place value, we removed ten counters from the ones, and added one to the tens. Repeat this so that the pupils understand why ten counters in the ones column are equal to one in the tens column. Solve the rest of the questions on the board, showing carrying, while also showing the answers with the counters. *This activity pairs with Pages 36-38 of New Countdown Book 2 and Math Lab pages 24 and 25.*

Exercise Commentary:

The unit starts with a revision exercise on Page 28 which contains questions of 2-digit addition without carrying. The concept of carrying over of ones is focused on Page 29 and 30 with support of some questions. You are encouraged to revisit the concept of place value while teaching addition while carrying over. The activity on Page 31 and 32 will lead up to the concept of carrying over when adding two 2-digit numbers, meanwhile, Page 33 and 34 will provide question sums to practice the concept.

Pages 36-37 introduce addition of two 3-digit numbers without carrying. Page 38 is practice for real-life sums involving with and without carrying over. Pages 39-43 lay foundations for carrying over ones and tens in 3-digit numbers. Pages 40, 42 and 43 provide practice sums which can be distributed as classwork and homework.

Math Lab Tie-In: Math Lab 2, Pages 23 to 25.

Plenary: Ask the students about how they use 2 and 3-digit number addition in their daily lives. Speak with them about the importance of knowing place value while carrying out addition sums.

3

Subtraction

Students Learning Objective:

- Subtract 1-digit number from 2-digit numbers with borrowing
- Subtract 2-digit numbers from 2-digit numbers with borrowing
- Solve real life number stories of subtraction of 2-digit numbers with borrowing
- Subtract 1-digit from 3-digit number without borrowing
- Subtract 2-digit number from 3-digit number without borrowing
- Subtract 3-digit numbers from 3-digit numbers without borrowing
- Solve real life number stories of subtraction up to 3 digits without borrowing
- Subtract 1-digit number from 3-digit number with borrowing
- Subtract 2-digit number from 3-digit number with borrowing
- Subtract 3-digit number from 3-digit number with borrowing
- Solve real life number stories of subtraction up to 3 digits with borrowing
- Analyse simple situations identifying correct operation of addition and subtraction with carrying/borrowing in mixed form

Suggested Time Frame: 3-4 lessons.

Starter Activity: Pupils have learnt addition with carrying in the previous chapter. Ask the class to Subtract 20 from 30. Then ask them to subtract 10 from 50. Then, ask them to subtract 38 from 29. Point out that with the third sum, although the numbers were smaller, it is a little bit trickier to calculate, because here the addition involves carrying. Instead of giving them this reason, simply say that it is a hard question, and that you can teach them a math trick to make it much easier. Mention that you have one for subtraction as well. Ask pupils to tell you what they personally find challenging about number operations, and if they have any tricks, mental or on paper, that they could share with the class.

Lesson Commentary:

- Ask pupils if they think that using place value made it easier to add large numbers. If they say yes, ask if they think it would also help with subtraction. Bring up carrying and ask pupils if they can come up with a similar way to subtract numbers on paper. Show them how to solve the first four following, using borrowing on the board:

a. $15 - 9$

b. $52 - 48$

c. $23 - 15$

d. $93 - 37$

e. $76 - 49$

f. $57 - 9$

g. $81 - 39$

h. $42 - 34$

i. $27 - 19$

Give them 20 counters each and ask them to solve the rest preferably in groups, using counters if they need to. This activity pairs with the concepts taught on Pages 45 and 46 of New Countdown Book 2.

- This activity is very similar to activity 3, except the pupils will be learning subtraction without borrowing. Ask three pupils to volunteer as counters, and make a number line, like so:

0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9

Explain to pupils that they will be using the number line to try to solve their subtraction questions by going through the numbers digit by digit. Go through the first three questions with them and have them solve the rest of their own. If there are too many pupils, have multiple number lines. Make sure to do at least fifteen sums, being sure to teach them how to subtract one-digit numbers, two-digit numbers, and three-digit numbers from three-digit numbers. *You may either use questions on Page 49-51 of New Countdown Book 2 along with the following example questions:*

- | | | | |
|---------------|----------------|----------------|---------------|
| a. $345 - 5$ | b. $474 - 104$ | c. $776 - 70$ | d. $782 - 12$ |
| e. $819 - 5$ | f. $691 - 510$ | g. $470 - 370$ | h. $273 - 11$ |
| i. $289 - 7$ | j. $382 - 1$ | k. $649 - 318$ | l. $652 - 31$ |
| m. $828 - 27$ | n. $826 - 4$ | o. $450 - 240$ | |

- Bring pupils back to class and give them up to ten subtraction number stories that do not involve borrowing. Ask them to solve them individually at their desks. Here are some examples of questions you can use:
 - If 360 pupils go to a school and 20 pupils are absent, how many are present?
 - Malaika has 850 rupees. She spends 300. How much money does have now?
 - Ansa wrote a 368 page book, but her editor asked her to remove 7 pages. How many pages will she have left?
 - There are 886 pupils in a school. 450 are in the junior campus, so how many are there in the senior campus?
 - Naima reads the first 56 pages of a 158 page book. How many more pages until she is done?
- Fill a bowl with chits, that each have a subtraction question on them. There must be an equal amount of single digit numbers being subtracted from three-digit numbers, two-digit numbers from three-digit numbers, and three-digit numbers from three-digit numbers. They should all require borrowing. After each pupil has picked a chit, give

them 2 minutes to think. Tell them they must come up with a number story to match their equation. After the 2 minutes are up, ask each of them to read their number story aloud to the class. The first one to raise their hand with the right answer will get a point. This pairs with Math Lab pages 26, to 30, 31. At the end, total the points and name the top three pupils. Here are some examples of equations you can put on the chits:

a. $864 - 806$

b. $965 - 789$

c. $373 - 5$

d. $678 - 9$

e. $672 - 199$

f. $754 - 75$

g. $962 - 479$

h. $574 - 98$

i. $643 - 478$

j. $852 - 66$

k. $524 - 8$

l. $314 - 169$

- The aim of this activity is for the class to connect addition and subtraction to its real-life applications. Arrange the class in a circle. Tell them that you will be going around the circle and everyone will have to share a real-life example where one would need to use addition or subtraction. However, they must not share whether it is an addition example, or a subtraction example. The rest of the class will have to raise their hands to guess. Remind them that it should not take too long to tell. The way the game will work is that once a pupil has shared an example, and guessed the right answer to another pupil's example, they may leave the circle and start on their homework in class, therefore having less homework at the end of the day. The first child to raise their hand will get to answer, but once a pupil has gotten one right, they can't attempt anymore. Start by giving them an example of a question from your life. Here's an example of what it should be like; "If my water bottle had 500 ml of water in it at the start of the day, and 200 ml at the end of the day, how can I figure out how much water I drank?" The correct answer to this would be to subtract 200 from 500. *Pages 53-55 of New Countdown Book 2 emphasises on the concept of addition and subtraction as an inverse operation of one another.*

Exercise Commentary:

The unit starts with a revision exercise on Page 44 which contains questions of 2-digit subtraction without borrowing. The concept of borrowing from tens is focused on Page 45 and 46 with support of some questions. You are encouraged to revisit the concept of place value while teaching subtraction with borrowing. Page 47 contains sums and real-life questions for 2-digit numbers that use borrowing from tens. Subtraction of 3-digit numbers, first, without borrowing and then with borrowing is introduced on Pages 48-50 along with practice sums. The concept of borrowing when subtracting two 3-digit numbers is addressed on Page 51 along with practice sums on Page 52 which can be distributed into classwork and homework.

A review of addition and subtraction, both is given on Pages 53-55, so the students get to revise both the concepts as inverse operations to one another.

Students Learning Objective:

- Recognise multiplication as repeated addition (e.g. $2 + 2 + 2 = 6$ is equivalent to 3 times $2 = 6$ and $3 \times 2 = 6$) and use multiplication symbol ‘ \times ’
- Complete number sequences in steps of 2, 3, 4, 5 and 10 (e.g. in steps of 2 the sequence is expressed as 2, 4, 6...)
- Develop multiplication tables of 2,3,4,5 and 10 till the multiplication of 10×10
- Multiply numbers within multiplication table
- Write number sentence for multiplication from the picture such as $2 \times \underline{\quad} = 6$
- Solve number stories on multiplication up to 1-digit numbers.

Suggested Time Frame: 8-10 lessons

Starter Activity: Show a bag full of a hundred beads to the students. Ask them how we can count all the beads in the bag accurately and in the least amount of time. They will come up with single counting, some will suggest counting in 2s. Show them how that is done, then count the same bag of beads in 5s. Ask the students ‘Does that make counting faster?’ and ‘Can you come up with other ways to count faster?’

Lesson Commentary:

- Draw the multiplication sign “ \times ” on the board and ask the class if they know what multiplication is. Let them discuss what they might know about it for a couple of moments, and then explain the concept of multiplying. Using 2×2 , explain that this simply means two twos, meaning what number do two twos result in when you add them together. Link this to addition explaining that while 2×2 is equivalent to $2 + 2$, 2×3 is equivalent to $2 + 2 + 2$. Tell them at this point that, as a rule, in multiplication, it does not make a difference to the answer if you switch the first and second number. So, 4×2 is the same as 2×4 . Demonstrate this by writing $4 + 4$ and $2 + 2 + 2 + 2$ on the board and asking the class to solve both. Then divide the class into two groups, and give one group the following to solve:

o 6×2

o 4×2

o 5×3

o 6×4

o 3×6

o 6×5

Then give the other group of the class these (inverted versions of the same).

- | | |
|----------------|----------------|
| o 2×6 | o 2×4 |
| o 3×5 | o 4×6 |
| o 6×3 | o 5×6 |

Allow them to compare answers so they can be assured that there is no difference. This activity pairs with Pages 59-63 of New Countdown Book 2 and Math Lab pages 29 to 31.

- Assign 5 children to each of the following numbers: 3, 4, 5, 10. If the class has fewer than twenty pupils some of them will have to do more than one number. Explain the concept of the number sequences using 2 as an example. Write the two times on the board with answers, and go through the answers, pointing out that the pattern in the number sequence is simply to move up two numbers every time, or rather, to just add two. Ask the class to copy the multiplication table for two. Relate multiplication tables to the patterns they learnt in previous classes with shapes. Once they have grasped the concept, invite the five pupils assigned to the number 3. Present them with a bowl of chits. This bowl will contain ten chits that will have multiples of three starting from 3 all the way to 30. Since there are only 5 pupils, only 5 chits will be picked out. The pupils will then have to arrange themselves in ascending order, and with the help of the rest of the class identify the missing numbers, and where they are missing from. Furthermore, each pupil will have to figure out on their own where they fall on the times table. Help them do this by writing what they figure out on the board. Make note of all the numbers present, and what 3 was multiplied by to get them. This will help the class find the missing pieces. Repeat this activity with 4, 5, and 10 spending no more than 6 minutes on each number.
- Ask pupils to write down multiplication tables for 3, 4, 5, and 10, after putting the complete table for 2 on the board as an example (which they should copy down). If they get stuck, or are unable to remember, they need only use what they learnt in the previous activity to figure out what the answers are. Each table up to 10. Give pupils no more than 7 minutes for each table. The students can use Pages 67, 70, 73, and 75 of New Countdown Book 2 to write down and complete the times tables. Once they are written, ask pupils to go over them as homework so that they are more comfortable with them, and can use them as a point of reference to solve multiplication questions.
- Present the pupils with an assorted variety of objects. Place them at the front of the class and show them how to write a multiplication sentence. So, for example, if there are 15 objects, pupils could write $3 \times 5 = 15$. Rearrange the objects three times, making sure the total number of objects is always a multiple from one of the tables already learnt. Ask them each time to come up with as many multiplication sentences as possible, for example 12 would have 2×6 , 3×4 , 4×3 , and 6×2 . Divide the class in two more groups and hand out sheets showing pictures of objects or use a textbook or story book.

Make sure that both groups get different material. Ask pupils to make multiplication sentences for the pictures but to leave them incomplete by replacing a number with a question mark, like so $3 \times ? = 6$. After they have done, ask each pupil to swap their work with a pupil in the other group so they can fill in the blanks in each other's work. Pages 77 and 78 of New Countdown Book 2 can also be used as a reference for this activity.

- Ask pupils to solve up to ten multiplication stories as individual classwork. Page 83 of New Countdown Book 2 provides ample practice questions. Here are some examples of stories you could use to give them as homework:
 - a. If Sophie's two cats had three kittens each, how many kittens would be there?
 - b. Asha is having a party, and her mother says there must be three pieces of candy for every child at the party. If the total number of children at the party is 8, how many pieces of candy should Asha's mother have ready?
 - c. Mikyle stops at a store to buy himself some gum that costs Rs 5. Before he buys it, decides he should buy some extra gum to share with his family. How much will it cost him to buy 5 pieces of gum?
 - d. A teacher needs 4 printouts for each of her pupils. If she has 10 pupils in her class, how many printouts should she get?
 - e. Ali has 5 uncles, and they each have 3 children. How many cousins does Ali have?

Exercise Commentary:

The first three pages of the unit begin with skip counting in 2s and the introduction of even and odd numbers as numbers that can and cannot be paired equally. Pages 59 to 60 address multiplication as repeated addition and a few practice questions to concrete the concept.

Pages 61-64 are exercises that help in developing the times table of 2 and consequently use it for different mathematical questions. Likewise, Pages 65-67 help in developing times table of 4 and so forth.

Pages 76-80 are different practice exercises for multiplication using multiplication tables. Page 81, under the heading of higher thinking skills, introduces the concept of multiplying a number to 0 giving 0 as its product. Pages 82 and 83 are multiplication question that use different concrete methods such as arrays, along with real -life problems to reinforce the concept of multiplying two numbers.

Math Lab Tie-In: Math Lab 2, Pages 37-44

Plenary: Discuss with students how multiplication helps them count faster. Bring up the

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Division

Exercise Commentary:

Page 84 introduces the concept of equal sharing or grouping using pictorial method, while Page 85-86 explains division as successive subtractions where a number is subtracted multiple times until nothing or 0 is left. Pages 87 and 88 further explain how successive subtraction is used to equally group or share something. Multiple examples are given for better understanding. Pages 89-92 shows division using number line along with practice questions for reinforcement of the concept. Real-life sums are also included.

Pages 93 and 94 explain long division method and terms such as dividend, divisor, and quotient along with practice sums.





Fraction

Exercise Commentary:

Page 95 introduces the fractions as equal parts of a whole. The first fraction focused on is half or $\frac{1}{2}$ with a simple activity of folding or cutting a paper in half. The concept is reinforced using questions on Pages 96, 97, and 98. Likewise, on Pages 99 and 100 quarters are explained with mixed exercises on Page 101. Question 1 of Page 101 can be done as classwork and Question 2 can be given as homework. Similar figures can also be made on worksheets for students to practice the concept more.

Similarly, Pages 103 and 104 exhibit higher thinking skills about more fractions including unit and non-unit fractions. You may explain the concepts by giving multiple examples from within books and elsewhere to explain parts of whole as fractions. Also use other shapes such as rectangles and squares to explain the same fractions.

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Measurement

Exercise Commentary:

The chapter starts with measuring the length of different objects using a cm ruler. Page 106 is revision of the concepts taught in previous scale including the identification of centimetre and metre as units of length and measuring and drawing certain lengths. The chapter moves on conversion of centimetres into metres. You are encouraged to repeatedly mention that $1\text{ m} = 100\text{ cm}$ so the students learn it by heart and remember the conversion when practicing the concept Page 112 introduced Kilometres as 1000 metres along with its conversion from kilometre to metre.

Page 113 is the revision of previously taught concepts of comparing non-standard units of mass. Page 114 explains Kilograms as 1000 grams of mass and how for larger objects kilograms are used and to weigh small amounts of objects, grams are used. Pages 116-118 include conversion of kilograms to grams and equivalent mass using standard weights. You may also bring standard mass so students can help understand better. The concept is very similar to the concept of equivalent money taught in the previous grade and involves multiplication. Addition and subtraction of same units of mass along with real-life sums is reinforced on Pages 119-121 which is the same as number operation of 2- and 3-digit numbers. These pages can be split into classwork and homework accordingly.

For capacity, the same pattern as that of length and mass is followed which starts with revision of previously taught concepts, moves to conversion of bigger unit, i.e. litres to millilitres, and then number operations involving units of capacity from Pages 122-128.



Time

Exercise Commentary:

It is advised to keep an analogue clock in the class while teaching this unit. Page 129 and 130 revises the periods of time and how a clock works. Page 130 focuses on the division of hour into 60 minutes. Page 131-134 are basic exercises of reading and telling time in o'clock. The concept of half past an hour is taught on page 135 followed up with exercises of reading and telling time. Page 137 teaches time at a 5-minute interval along with exercises for the reinforcement of the concept. It is advised to have printable worksheets of the topic distributed in class as extra practice. Page 139 provides a good exercise to revise the 5-minute interval concept. Pages 140-141 is based on a.m. and p.m., explaining what both the term mean, their significance, and an exercise to support the concept. Pages 142-148 are based on Solar and Lunar calendar and how to read them. You are encouraged to bring calendars to class so it's easier for the students to grasp the concept. Most of the questions from the exercise can be done in the class as classwork. Mixed operations are also incorporated in one of the exercises as well.





Geometry

Exercise Commentary:

Pages 149-153 are basic revision for students to go back to their previously learnt concepts. On pages 154-159, 3D shapes are explained in terms of their characteristics. Page 160-161 emphasises on straight and curved lines.

