FACILITATOR'S MANUAL

CLASS 1

MATHS

2026-27

CONTENTS

Guideline For Using The Teacher's Manual

Teachers' Manual for Fun With Maths Grade 1 is thoroughly planned and designed to serve as a complete guiding resource for teaching Mathematics to Grade 1 students. Methodologies that are included here are precisely chosen to meet the requirements of National Curriculum Framework (NCF) 2005 and maintains the standards as specified in Continuous and Comprehensive Evaluation (CCE). Teachers' Manual contains the following sections meant to help the educators in the ways as mentioned below:

Complete Table of Lessons

The table is given in the beginning to provide a consolidated overview of the sequence of chapters that are present in the Fun With Maths Grade 1 (A set of 4 books) together with the key concepts covered in each chapter.

Lesson Plan

This section carries the detailed processes/methods that the teachers are to follow to train the class. A lesson plan for each chapter is chalked out taking proper care to explain the topics in a class with different types of learners (Visual, Auditory and Kinaesthetic: VAK; Multiple intelligences) in simple and graspable manner. Adequate Teacher's Tips and Activities are furnished to help the teachers in instructing and acquiring the desired Learning Outcome from the students of aforesaid intelligence types. There are icons used in the Teacher's Tips to denote the suggested teaching methods for elaborating a particular topic. Importance is given in incorporating these teaching methods in such a way so that teachers can present the topic in the class in an interesting and encouraging way. Teachers are suggested to keep in mind the mentioned objective while they impart the specified method. The used icons are given below:

Explain	Demonstrate	Interact	Motivate/Revise	Board Book	Linked Activitty
Describe and calls tudent's attention to the important point(s)	Properly show the important point(s) as mentioned and check student's response	Make a face-to-face connection With the class and gather student's ideas on the important point(s)	Encourage students to think themselves (individually or collectively)/ Recapitulate on already discussed points	Clearly show the important point(s) graphically/textually and check student's response	Conduct the related hands-on activity and check student's level of perception on the important point(s)

Answer Keys

Solutions to unsolved problems are provided in this section to serve the purpose Of evaluating student's answers correctly and easily. Sufficient number Of unsolved problems of different types/diffculty levels are provided in Fun With Maths Grade 1 that are thoughtfully placed in suitable places of respective chapters for student's enrichment and assessment. Exercises are meant to serve the following objectives:

- **Before we start**: Short introductory recapitulation on the concepts already learnt-
- **Try This**: Conceptual practices to check student's understanding and aptitude.

- **Master This**: Higher order practices to enhance student's insight over the concept.
- **If you have finished**: Brain teaser for fast finishers.
- **Activity**: Quick check on student's observation/application of a new concept.
- **Now I Know**: Consolidation of all the concepts leamt.
- **Read, Trace, Write, Find, Circle**: practice on math vocabulary.
- **Practice book**: A supplementary book containing richly developed conceptual problems.

Chapter

1 Addition

Explain Demonstrate Interact Motivate/Revise Board Work Linked Activity

Note: Provide real life examples and help the class to understand how addition is used to find the toatal of objects or make new numbers. help students to increase their counting speed and quick addition. Help them explore different types of addition methods. Let them make same addition using more than one method.

Pg No. 5-7

Topic: Addition, My Maths Vocabulary, Cousins Came Visiting

TLM: objects like pencils, books, water bottles, crayons, etc. that students carry to school

Learning Outcome: Understand addition through a poem
Count and find how many objects are there altogether

TEACHER TIPS	STUDENT ACTIVITY
Before reading the poem given on **page 5**, tell the class that by 'adding' we mean 'putting together things' or 'combining things'. As you read the poem on **page 5**, show the members of the family with fingers of one hand. As you complete the poem, ask the class to count and say how many people are there altogether. Let them sing along as you read. Randomly ask the learners to count the mangoes on the trees. Elicit verbal responses about which tree Parth should climb to pluck the mangoes for his family and why. Read aloud the math vocabulary on **page 6** and ask them to write the words at home. As you read the text of **page 7**, show the members of the family with fingers of one hand and cousins with fingers of another hand	**Activity:** 1. Call two students to come in front with their pencil boxes. 2. Ask them to take out their pencils and show the class. 3. Ask the class to count and say the number of pencils that each student is showing. 4. Next, ask them to give their pencils to you. Hold all the pencils in one hand and ask the class to count the number of pencils. 5. Demonstrate the class by showing the pencils you're holding how the number of pencils increases when you 'added' or 'put together' pencils from the two standing students. **Note**: Repeat the activity for the students to practice using other objects like books, water bottles, crayons, etc. **CW:** pg 5-7 of TM

Ask the class to count and say how many people are there altogether. Let them write the numbers and number names in words.	

Pg No. 7-8

Topic: Understanding More, Draw Some More

Learning Outcome: Count and find how many objects are there altogether
Find the sum by adding 1 with a number from 1–8

TEACHER TIPS	STUDENT ACTIVITY
Tell the class that when objects join a set of objects, we say 'objects are added' in that set. Explain this with the help of the picture of blocks given on **page 7**. Let the class count, write and say aloud the number of blocks. Ask the class to point block tower one by one starting from 2 and say aloud with you, '1 more to 1 is 2.', '1 more to 2 is 3.' and so on. Ask the class to count and then draw objects on **page 8**.	**CW:** pg 7,8 of TM **HW:** pg 6,7 (Q1-4) of Math practice book

Pg No. 9-10

Topic: Add by Counting **TLM**: chalks/marker pens (5)

Learning Outcome: Add numbers in different ways to make numbers 2–9

TEACHER TIPS	STUDENT ACTIVITY
Ask the class to say aloud the addition showing their own fingers along with you as you show the addition with your fingers as given on **page 9**. Repeat the activity showing some more examples other than what are given on **page 9**. Tell the class that number moves one-step more when 1 is added and number moves two-steps more when 2 is added and so on.	**Activity:** Conduct an oral Question-Answer round. 1. Show a number from 1–9 with your fingers and say aloud 'add 1' or 'add 2' or 'add 3' and so on. 2. Ask the class to give their answers raising fingers to show the answer and say aloud the number. **Note**: Repeat the activity for the students to practice.

Increase your speed of asking questions to improve the calculation speed of the students. **Refer to** . In the beginning, recall how the class has obtained a new number when they added two numbers. You may use chalks/marker pens (at most 5). Take 3 in one hand and 2 in another hand and ask students to say how many objects are there in each of your hands. Then, take all the objects you are using in one hand and show the class. Say the number of objects in your hand (here, it is '5') and say aloud, '3 and 2 make 5.'	**CW:** pg 9, 10 of TM **HW:** pg 7,8 (Adding and Making 5) in Math practice book

Pg No. 11-13

Topic: Addition-Across and Vertical

Learning Outcome:
- Recognise '+' as the sign of addition
- Read and write additions using '+' sign
- Add single digit numbers across and vertical

TEACHER TIPS	STUDENT ACTIVITY
Before asking the class to complete the practice given on **page 11**, give examples using the chalks/marker pens and help the class understand that you can add two numbers in many ways to make a number. For example, show 1 chalk/marker pen in one hand and 4 in another hand and say aloud, '1 and 4 make 5.' Tell them that numbers are placed side by side in across addition. And in vertical addition numbers are arranged vertically that is one below the other. Refer to . For vertical addition, use objects such as notebooks or books. Place them one below the other (four books) and speak aloud the total. Show the example given on **page 12** by drawing two sets of dots	**Activity:** Conduct an oral Question-Answer round. 1. Call three girls and two boys. 2. Make them stand side by side separately. 3. Say aloud 'add 3' and '2' and then make them stand altogether. 4. Ask the class to give their answers raising fingers to show the answer and say aloud the number. 5. Say aloud that the total is '5'. **Note**: Repeat the activity with other sets of students to practice. **CW:** pg 11-13 of TM **HW:** pg 8 (Adding and Making 6) in Math PB

on board with a '+' (plus) sign in between. Put an '=' after and draw dots to show the total. Explain the class that '+' is used to show addition. Help the class to understand that when they add 0 with a number, they will get that number as sum. You may explain once more that zero means 'nothing' or 'a number with no value'. Before asking the class to do the practice given on **page 13**, again explain them the process of vertical addition. You may give an example drawing sticks/ balls on board.	

Pg No. 14-15

Topic: Addition on, Number Line **TLM**: • marker pens/chalks, books, etc. • number cards (1–9)

Learning Outcome: Add numbers on number line

TEACHER TIPS	STUDENT ACTIVITY
Recall the methods of addition that you have shown with the use of fingers and objects. Refer to . Draw a number line on board and show the class how to jump one step forward on number line to make the addition.	**Activity:** Use fingers/sets of objects to show numbers and conduct a recapitulation on addition across/ vertically. **Activity 2**: Game of Number chain 1. Write an addition on board. 2. Call nine students to come in front. Give number cards 1–9 to each of them and ask to stand side by side in ascending order holding the cards in front. In this way, they will form a number chain. 3. Call another student and ask him/her to think the standing students to be a number line. Ask the student to find and stand in front of the student who is holding the first number written on board. Starting from there, tell the student to jump from one student to another as many steps as the second number written on board and then stop. 4. Once the student stops, tell him/ her to say aloud the number that the student is holding. 5. Ask the rest of the class to make the addition written on board and raise their right hand if their addition matches with the number said by the student.

	Note: Repeat the activity for the students to practice. **CW:** pg 14-15 of TM **HW:** pg 9 (Adding and Making 7) and pg 11 (Addition by Counting on the Number Line) in Math PB

Pg No. 16-18

Topic: Making Numbers 8 and 9

TLM: objects like, pencils, books, water bottles, crayons, etc. that students carry to school

Learning Outcome: Add numbers in different ways to make 8 and 9

TEACHER TIPS	STUDENT ACTIVITY
Show the class different ways of making 8 by adding objects like books, bottles, pencils, etc. Help students to understand that different objects can be added in the same way to make the set of objects same in number. For example, make 8 books adding 4 + 4 books. Again, make 9 bottles adding 6 + 3 bottles.	**CW:** pg 16-18 of TM **HW:** pg 9,10 (Adding and Making 8, Adding and Making 9) and pg 12,13 (Q2-5) in Math PB

Pg No. 19-21

Topic: Story Sums, Draw and Add **TLM**: chalks/marker pens

Learning Outcome: Find the sum by adding numbers from 1–9
Find the sum by drawing

TEACHER TIPS	STUDENT ACTIVITY
Explain the stories given on **page 19**. Let them observe the objects in the pictures and come up with the answer. Give examples using the chalks/marker pens. Help the class understand each instruction, before asking the class to complete the practice given on page 20 and 21.	**CW:** pg 19-21 of TM **HW:** pg 13, 14 (Story Sums and Read and find the answers) of Math PB

Pg No. 22-23

Topic: Math About Me

Learning Outcome: Relate math with self
Find the sum by adding numbers vertically and across

TEACHER TIPS	STUDENT ACTIVITY
Let the students relate with self to find the answers. Encourage them to solve the addition sums, both across and vertically, on their own.	

Website Links:

For teachers:

- http://www.k51eaming.com/free-math-worksheets/first-grade-1/addition
- https://wwweducation.com/activity/first-grade/additon/

For students:

- https://mvw.mathworksheets4kids.com/picture-additon.php
- http://www_abcya.com/addition_htm

Note: Extra questions for each of the Math concepts are given in the TinkerMath Practice Book which can be answered by the students anytime during the week/weekend the concept is discussed in class or as per their convenience. Parents or any adult of the family may supervise their work as there is some cutting work involved. Parents/adults may also check the responses given by their wards to assess their understanding.

Answer Keys

Chapter
2 Subtraction

Explain | Demonstrate | Interact | Motivate/Revise | Board Work | Linked Activity

Note: Help students to explore the concept of subtraction using real life examples. Use various kinds of visual representations to make them identify the difference between addition and subtraction. Provide references from day-to-day life to explain the class the cases when they get a 0 in subtraction.

Pg No. 26-29

Topic: Subtraction, My Maths Vocabulary, 1 less

TLM: objects like pencils, books, crayons, etc. that students carry to school

Learning Outcome: Understand subtraction through a poem
Count and write the remaining objects

TEACHER TIPS	STUDENT ACTIVITY
Ask a student of the class to count and say how many people stay in his/her home. Then, ask him/her who remains in the house when he/she comes to school. Arrange five marker pens in standing position before reading the poem given on **page 26**. Read the poem and show the number of butterflies leaving the door by laying down a pen. Repeat this while reading each stanza of the poem and arranging pens as per the numbers mentioned in the stanzas. Help students to understand that objects become less when we remove object one by one. The Maths vocabulary can be read aloud in class and the students may do the writing part at home. Connect the students with the Cheena and her gifts and make them understand the instruction. Use your fingers to show and reinforce the concept.	**Activity:** 1. Call a student in front. 2. Give him/her a pile of six notebooks. 3. Tell that student to give three notebooks to another student. 4. Now tell the first student to count how many notebooks are left. **Note**: Repeat the activity for the students to practice using other objects like books, pencils, crayons, etc.

Refer to . Use in the block pictures given on **page 28** and help students to understand that blocks become less when we remove them one by one. Ask the class to point the block one by one and say aloud with you, '1 less from 9 is 8.', '1 less from 8 is 7.' They may draw the bricks as instructed on **page 29**.	**CW:** pg 26-29 of TM

Pg No. 30-31

Topic: Understanding Subtraction, Subtract

TLM: different real life objects like books, bottles, fruits, cups, spoons, pencil boxes, etc. (at least 3 different types of objects each 9 in number)

Learning Outcome: Count the objects left after some objects are taken away from a set of objects
- Identify '-' as subtraction sign

TEACHER TIPS	STUDENT ACTIVITY
Give examples from real life how the number of objects decreases when some objects are taken away. For example, when you take out biscuits from a jar/take out books from bag/ take out fruits from a bunch, etc. Refer to . Explain that subtraction means to take away things from a collection. Tell the class that we use subtraction when we want to find the number of objects that are left when some objects are taken away. Show them how to write a subtraction sentence using '-' sign. You may recall the addition sign '+' (plus) and ask the class to spot the difference with the '-' (minus) sign. Ask the class to count and then draw objects on **page 8**.	**Activity:** 1. Arrange some objects on table and call a student to come in front. 2. Ask him/her to take away some objects. 3. Ask the rest of the class to count and say aloud the remaining objects. **Note**: Repeat the activity with other set of objects. Ask the students to say how many objects are taken away. **CW:** pg 30-31 of TM

Pg No. 32-34

Topic: Subtraction by Striking Off **TLM**: chalks/marker pens (5)

Learning Outcome: • Add numbers in different ways to make numbers 2–9
• Subtract across and vertically

TEACHER TIPS	STUDENT ACTIVITY
Help the class to remember the position of numbers in a subtraction sentence on **page 32** (both across/vertical). You may write the subtraction sentence on board making the greater number big in size than the smaller number. Students work independently on solving problems on **page 33** and **page 34**. Assist them if needed.	**Activity:** Conduct an oral Question-Answer round. 1. Show a number from 1–9 with your fingers and say aloud 'add 1' or 'add 2' or 'add 3' and so on. 2. Ask the class to give their answers raising fingers to show the answer and say aloud the number. **Note**: Repeat the activity for the students to practice. **CW:** pg 32-34 of TM **HW:** pg 15,16 (Understanding Subtraction by Striking Off and Subtraction by Reduction) of Math PB

Pg No. 35

Topic: Subtraction by Using Fingers

Learning Outcome: • Subtract one digit numbers by using fingers

TEACHER TIPS	STUDENT ACTIVITY
Show your nine fingers using both your hands and then fold four fingers. Ask them to tell the numbers of remaining fingers. Before asking the class to complete the practice given on **page 35**, invite a student or two to perform the same activity. Refer to .	**Activity:** Conduct an oral Question-Answer round. 1. Randomly invite a student in front. 2. Speak aloud a number from 1-9 and ask him/her to show that many fingers. 3. Speak aloud another number and ask the student to fold that many fingers. 4. Students in class can give out the answer. **Note**: Repeat the activity with other students to practice. **CW:** pg 35 of TM

Pg No. 36-37

Topic: Subtraction Using, Number Line **TLM**: number cards (1–9)

Learning Outcome: Subtract numbers counting backward on number line

TEACHER TIPS	STUDENT ACTIVITY
Recall the methods of subtraction that you have shown with the use of fingers and striking off. Draw a number line on board and help the class to understand how to jump one step backward on number line to make the subtraction. Refer to . Prompt students with questions about the context of the problem. For example, "How many children come to play with you in the evening?" "How many go back home early?" "How many are left behind?" Ask students to work independently on solving problems.	**Activity: Number Line of Students** 1. Call nine students in front. 2. Give number cards 1–9 to each of them and ask to stand side by side in ascending order holding the cards in front. In this way, they will form a number chain. 3. Call another student and speak aloud a larger number. 4. Ask him/her to go to the called out number on the students number line. 5. Speak aloud a smaller number that has to be subtracted and ask the student to hop back that many numbers 4. Once the student stops, tell him/her to say aloud the number on the student number line. 5. Ask the rest of the class to speak aloud the answer. **Note**: Repeat the activity for the students to practice. **CW:** pg 36-37 of TM **HW:** pg 16 (Use the number line to subtract) of Math PB

Pg No. 38-39

Topic: Fact Families

TLM: different real life objects like books, bottles, fruits, cups, spoons, pencil boxes, etc. (at least 3 different types of objects each 9 in number), sheet of paper, pencil.

Note: Collect them before starting the activity. Arrange objects of one type (number of objects may vary from 5–9 in a row and start the activity. Repeat the activity by replacing the objects with another set of objects).

Learning Outcome: Identify and make matching addition and subtraction facts

TEACHER TIPS	STUDENT ACTIVITY
Ask the class to write the fact families given on **page 38** (both addition and subtraction) vertically and find the addition and subtraction drawing dots/sticks.	**Activity: Match Addition And Subtraction Facts** *Play in pairs.* 1. Arrange a set of objects (any number 5–9) in a line on the table and ask the students to count the objects.
Explain the class that in addition fact, two small numbers are added together to make a big number. When we write a matching subtraction fact, we subtract any one small number from that big number and obtain the other small number. Show examples of matching addition and subtraction facts with numbers other than 9 (from 1–9).	2. Tell the class that one student of each pair will write an addition fact using the number. Other student of the pair will write a subtraction fact with the number. 3. Then, students will show the facts to one another in each pair. 4. Declare the matching addition and subtraction facts as 'GOOD PAIRS'. **Note**: Repeat the activity for the students to practice. **CW:** pg 38-39 of TM

Pg No. 40-46

Topic: Add and Subtract, Story Sums **TLM**: chalks/marker pens

Learning Outcome: Add and subtract numbers from 1–9
Solve story sums

TEACHER TIPS	STUDENT ACTIVITY
Encourage students solve the given problems on **page 40**. Interact with different students for each problem on **page 42**, **43**, **44** and elicit answers. Describe steps to solve them using visuals and partner support. Students should be able to effectively add and subtract by the end of the second chapter. Provide assistance wherever required.	**Activity 1:** At first, demonstrate the activity given on **page 41**. Show more than one example of subtraction with your fingers and ask the class to show numbers in the same way as you are showing and say aloud the subtraction along with you. Let them enjoy colouring while solving the problems. **CW:** pg 40-46 of TM **HW:** pg 17,18,19 of Math PB

Website Links:

For teachers:

- hap://www.softschools.com/grades/lst_grade/math/
- http://wwwnath4chiIdren.com/GradeI/quizzes/

For students:

- http://www.mathplavground.com/grade_l_games.html
- hap://www.thegreatmar%nicompanv.com/Math-Quick-Quiz/subtradon-quizhtml

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Answer Keys

Chapter

3 Shapes

Explain | Demonstrate | Interact | Motivate/Revise | Board Work | Linked Activity

Note: Give students enough opportunity to explore different types of real life objects, identify and describe their shapes. Help them to identify 2D and 3D objects. Help them to sort different types of objects and recognise how they move on a plane surface.

Pg No. 49-52

Topic: Shapes, My Maths Vocabulary, Introducing Shapes

TLM: **Circle**- bangle, CD disc, coin, etc. **Square**-chess/ludo board, etc. **Rectangle**- photograph, A4 paper, greetings card, etc. **Triangle**- set square, streamer, etc.

Learning Outcome:
- Identify and show simple shapes
- Draw shapes using straight and curved lines
- Describe what is a rectangle, a square, a triangle, a pentagon and a circle

TEACHER TIPS	STUDENT ACTIVITY
Arrange the four shapes mentioned in the poem. Read the poem on **page 49** and show the shapes while simultaneously while reciting it. Show similar objects as you read the stanza where that object is described. Let students repeat each stanza of the poem. Use real life objects to show the terms 'round', 'side', 'corner', 'point'. The Maths vocabulary can be done later once all shapes have been introduced. Help students understand the side and corners of the shapes. They can count them and respond in the book. Tell the class that there are two types of lines– straight and curved that are used to draw different types of shapes. Use a paper strip and hold it straight to show what is a straight line. Bend it to show a curved line.	**Activity**: 1. Call a student in front. 2. Point to an object in the classroom that has a square/ circle/ triangle / rectangle shape. 3. Ask that student to name the shape. **Note**: Repeat the activity for the students to practice using different objects. **Activity 2**: Show the shapes that are described in the poem on **page 49** using fingers/ hands at random and ask the class to identify the shapes that you are showing. You may call students to come in front and show the terms 'corner', 'point', 'side' by touching the parts of the shape that you are showing with your hands.

Refer to .	**Note**: Find reference illustrations of the shapes formed with fingers/ hands given at the end**. **CW:** pg 49-52 of TM **HW:** pg 21,22 of Math PB

Pg No. 53-54

Topic: Shapes **TLM**: origami sheet

Learning Outcome: Do paper folding activity to make different shapes

TEACHER TIPS	STUDENT ACTIVITY
You may ask the class to draw some shapes with straight and curved lines. You may write some English letters and ask the class to name the letters that have only straight lines, only curved line and straight/curved lines. Ask students to think of objects that has a specific shape such as a door has a rectangle shape, a clock has circle shape, and so on. Involve as many students as you can. Refer to .	**Activity**: Arrange 6–9 objects (objects of types cube, cuboid, cylinder, cone and sphere) in a line on the table. Touch an object at random and ask the class to name an object that looks similar to that object. Ask the students to say how they look. **Note**: Repeat the activity for the students to practice. **Activity 2**: Students will do the activity given on **page 54**. You may explain the method and assist if required. CW: pg 53-54 of TM **HW:** pg 20 of Math PB

Pg No. 55-57

Topic: Roll and Slide **TLM**: **Objects**- ball, bottle, coin, marker pen, duster, paper cup, dice, box, paper plate, etc. and a cardboard sheet (plane surface)

Learning Outcome: Identify the objects that slide and those that roll

TEACHER TIPS	STUDENT ACTIVITY
In the beginning, help the class to understand which objects slide and which can roll. Show sliding and rolling using real life objects.	**Activity**: *Play in group of 5.* 1. Make a circle on ground and keep 10–15 objects of different kinds inside the circle.

Use both 2D and 3D objects to show rolling and sliding. You may show what happens when you drop an object to ground. Explain the class that the objects that are round can roll while objects with flat sides can slide.	2. Call a group to come and stand around the circle with objects. Ask each student of the group to quickly pick one object with the sound of a clap that you will make.
Explain the class that the objects that are round can roll while objects with flat sides can slide.	3. Once done, the group will sort the rolling and sliding objects in two sets. You may ask the students of the group to describe the objects that they have picked. **CW:** pg 55-57 of TM **HW:** pg 23 of Math PB

Pg No. 58-59

Topic: Sorting and Naming Objects

TLM: board duster, plastic jar (cylindrical), birthday cap (conical), paper roll, rubik's cube, chalk box, candle, orange, alphabet block, tiffin box, etc.

Learning Outcome: Sort and name objects as per their shape

TEACHER TIPS	STUDENT ACTIVITY
Use common names like cube, brick, ball, cone and pipe to help the students identify the respective shapes. You may ask the class to draw some objects by their own and put their names under them. You may show similar objects (For example, plastic jar and paper roll) with different size and help the class to understand that similar objects can differ in size. Refer to . For page 58, ask students to name objects given on that page. Ask them which of them can roll and which can slide. While students complete the practice given on pages 59-60, make assessment of their understanding.	**Activity**: *Play in group of 5.* Arrange 6–9 objects (objects of types cube, cuboid, cylinder, cone and sphere) in a line on the table. Touch an object at random and ask the class to name an object that looks similar to that object. Ask the students to say how they look. **Note**: Repeat the activity for the students to practice. **CW:** pg 58, 59 of TM

Website Links:

For teachers:

- https://www.mathworksheets4kids.c0m/solid-shapes.php
- http://www.teachingideas.co.uk/subjects/2d-shape
- http://nrich.maths.org/8287

For students:

- http://www.abcya.com/shapes_geometry_game.htm
- http://www.topmarks.co.uk/maths-games/S-7-years/shapes

Refference of shapes using fingers:

Triangle

Rectangle

Square

Circle

Note: Extra questions for each of the Math concepts are given in the TinkerMath Practice Book which can be answered by the students anytime during the week/weekend the concept is discussed in class or as per their convenience. Parents/ adults may also check the responses given by their wards to assess their understanding.

Answer Keys

Chapter

4 Numbers 10-20

Explain Demonstrate Interact Motivate/Revise Board Work Linked Activity

Note: Help students count objects by making groups of 10. Introduce the place value table and abacus to let the students have an undestanding of representing numbers 10-20 in tens and ones. Motivate the students to think beyond the numbers they know. Use both visual and numeric modes to stimulate the quick counting and calculation skill in students.

Pg No. 62-63

Topic: Fox and the grapes, Learn Numbers 10-20 **TLM**: ball, 10 sheets of paper

Learning Outcome:
- Identify objects more than 9
- Count, read and write numbers 10–20

TEACHER TIPS	STUDENT ACTIVITY
In the beginning, read the story given on **page 62**. As you read, ask the class to look at the bunches of grapes. Make the story as interactive as possible by asking questions (e.g. what colors there are, the names of different objects, etc.) and getting students to speculate what is going to happen next in the story. Let them colour the bunches of grapes as per the instruction. Explain the class with the help of 10 frame how counting of numbers from 10 onwards becomes easy when we make groups of 10. Introduce numbers 11-20. Refer to .	**Activity: Play "Pass the Parcel Numbers 11-20"** You are going to play a version of "Pass the Parcel" to introduce the numbers 11-20. Before class get 10 sheets of A4 paper and write a number (11-20) on each sheet. Shuffle the papers up so they are ordered randomly. Now make your parcel – roll one sheet of paper onto a ball (with the number on the inside) and then wrap the next sheet (number inside) around the ball. Keep wrapping the sheets around the ball until all are used up and you have a parcel. 1. In class, get everybody to sit in a circle. 2. Play some music and have everybody pass the parcel around the circle until you stop the music. The person holding the parcel when you stop the music can unwrap the first layer. Ask for that sheet of paper and stick it on the board with the number showing. At this point there is no need to teach the number. 3. Start the music again and then stop it after the parcel has been passed around a while. The student holding the parcel can unwrap

	the next sheet and look at the number. S/He should then stick it on the board either to the left or right of the number already there, depending on if it comes before or after that number (e.g. if the first number was 15 and the second one is 19, then it should be placed after the 15). Keep playing "Pass the Parcel" until all the numbers are stuck on the board in the correct order 11-20.

Pg No. 63-66

Topic: Numbers 10-20 **TLM**: Marker pens, crayons. **Note**: Number of objects should be 20

• **For the activity**: Packet of 20 counters (sufficient to give each pair one packet), sheet of paper, pencil

Learning Outcome: Show numbers 10–20 in 10's frame

TEACHER TIPS	STUDENT ACTIVITY
Students should be able to understand that until they can make two groups of 10 (in 20), numbers that are added to 10 are all placed in ones place. For example, to make 11, we put 1 in tens place (to show one group of 10) and one 1 (the 1 that is added to 10) is placed in ones place. Show the class how to draw beads in an abacus to make numbers (10–20). Refer to . Assist the students while they work on number frames.	**Activity**: Work in pairs. 1. Give one packet of 20 counters to each pair. 2. In each pair, one student will pick some counters from the packet and count them. If they are less than 10, he/she will put them back in the packet and give the other student to pick. If the number of counters is equal or more than 10, the student will keep 10 counters with him/her and give the rest to the other student. Other student will count the counters given to him/her. (In case, a student picks 10 counters, he/she will not give any counters to the other student.) 3. The student who has kept 10 counters will make a place value table, fill the tens place and pass the sheet to the other student to fill the ones place. 4. After they both complete, they will count the counters again and check if the number that they have made is correct or not. **CW:** pg 63-66 of TM **HW:** pg 24 of Math PB

Pg No. 67-69

Topic: Numbers 10-20 **Learning Outcome**: Write the number names 10–20 in words

TEACHER TIPS	STUDENT ACTIVITY
Refer to the activity on **page 67** to begin the session and to recapitulate the concept. Ask the class to see the dots in the frames of 20 given on **page 68** and match them with the numbers.	**Activity**: Students will do the activity given on **page 67**. **CW:** pg 67-68 of TM **HW:** pg 25 of Math PB

Pg No. 70-72-73

Topic: Fun with Abacus **Learning Outcome**: Show numbers 10–20 in place value table and abacus
Make group of 10 and count objects

TEACHER TIPS	STUDENT ACTIVITY
Students should be able to understand that until they can make two groups of 10 (in 20), numbers that are added to 10 are all placed in ones place. For example, to make 11, we put 1 in tens place (to show one group of 10) and one 1 (the 1 that is added to 10) is placed in ones place. Show the class how to draw beads in an abacus to make numbers (10–20). Ask the class to see the group of fruits and vegetables given on **page 72** and make place value table and 10 frame for each number.	**CW:** pg 70-73 of TM **HW:** pg 26 of Math PB

Pg No. 74-79

Topic: Forward counting and backward counting **Learning Outcome**: Make forward and backward counting with numbers 0–20

TEACHER TIPS	STUDENT ACTIVITY
At first, recall the forward counting and backward counting done for 1–9. You may say a number from 1–9 and ask the class to count forward and backward from that number.	

Then move to forward counting and backward counting from 0-20. Let the students call out the forward counting and backward counting looking at the steps in the stairs. Thereafter, they may fill in missing numbers in the boxes.	**CW:** pg 74-79 of TM **HW:** pg 27 (Forward and Backward Counting) of Math PB

Pg No. 80-82

Topic: Comparing Numbers

Learning Outcome: Compare numbers from 0–20 as small and large

TEACHER TIPS	STUDENT ACTIVITY
Use 10 frame to make the students understand the smaller and larger number given on **page 80** and explain that the number where more dots are added to the group of 10 is greater than the number with less dots added with the group of 10. Students should be able to understand it clearly that when numbers have equal groups of 10, they have to compare the digits of ones place. You may ask the students to count and say how many more dots are there in the greater number. Help students to understand how numbers from 10–20 increase or decrease depending on the value of the digit in ones place. Write some numbers on board (0-20) and ask students to identify the greatest and smallest numbers. Ask students to pick any three numbers from board and compare them.	**CW:** pg 80-82 of TM **HW:** pg 27,28 (Comparing Numbers Q1) of Math PB

Pg No. 83-86

Topic: Increasing and Decreasing Order, Ordering Numbers 1-20

Learning Outcome: Read and write numbers in increasing and decreasing orders

TEACHER TIPS	STUDENT ACTIVITY
You may say aloud different sets of numbers (from 10–20) and let the class to quickly identify the orders of numbers. Refer to .	**Activity**: Say aloud some numbers from 10–20 in random order (For example,

	13, 16, 12, 10, 11, 14, 15) and ask the class to write them in their notebook. Then, ask random questions like, 'Tell the greatest and smallest numbers.', '12 is greater than 16. Am I correct?', 'How many numbers are more in 14 than in 10?', '13 comes before or after 15?' and so on. **CW:** pg 83-86 of TM **HW:** pg 28 (Q2,3) of Math PB

Pg No. 87-88

Topic: Addition Using Number Line **Learning Outcome**: Add numbers up to 20 by forward counting on the number line

TEACHER TIPS	STUDENT ACTIVITY
In the beginning, arrange two sets of objects on the table and let the students count and say how many objects are there altogether. Then keep adding more objects and ask them the total number of objects. Give 2–3 such examples. Show the sum on number line, in case students make mistakes in forward counting. Help the class to remember numbers and make oral forward counting quickly and correctly. Refer to .	**Activity**: 1. Say aloud a number. 2. Then, say another number (the sum of the two numbers should be within 20). 3. Ask the class to silently to start from the first number and forward steps equal to the second number and remember the number where they reached. 4. Call a student to come in front and say aloud the number he/ she has reached. Other students will raise their right hand if their number is same as the number told by the student. **Note**: Repeat the activity. **CW:** pg 87-88 of TM **HW:** pg 29, 30 (Q1, 2) of Math PB

Pg No. 89-90

Topic: Making 10 **TLC**: crayons, erasers, pencils, sharpeners, etc. Note: number of objects should be 10

Learning Outcome: Make 10 by adding Two numbers

TEACHER TIPS	STUDENT ACTIVITY
Use pink and blue dots in the tens frame given on **page 89** to show different ways of making number 10. You may call a student and ask him/her to make a set of 10 objects adding two sets. Ask the students to make 10 by counting dots of 2 colours in 10 frame on their own. Assist them while students solve the problems on **page 90**.	**CW:** pg 89-90 of TM **HW:** pg 30 (Adding and Making 10) of Math PB

Pg No. 91-92

Topic: Addition by grouping of tens **TLC**: packets of 20 counters (sufficient to give each pair one packet), sheet of paper, pencil

Learning Outcome: Add numbers vertically and horizontally (up to 20) by making group of 10

TEACHER TIPS	STUDENT ACTIVITY
Tell the class to see carefully how each grouping of 10 is done on **page 91**. Help students to understand how to make group of 10 in the greater number taking numbers from the smaller number. Encourage students to find the sum by adding both vertically and horizontally. Assist them wherever required.	**Activity**: *Work in pairs.* 1. Give a packet of 20 counters to each pair. Ask one student of each pair to take out some counters from the packet and divide between the two. 2. Each student will count the counters they have and discuss how they are going to make group of 10. One student will make group of 10 counters using his/her counters. He/she can ask for counters from the other student if needed. Else, he/she will give extra counters to the other student. Other student will count the counters with him/ her. 3. Once done, the students will draw 10 frames and show the addition of counters by making group of 10. **CW:** pg 91-92 of TM **HW:** pg 31 (Vertical Addition) of Math PB

Pg No. 93-94

Topic: Subtraction **Learning Outcome**: Subtract numbers (up to 20) by crossing out

TEACHER TIPS	STUDENT ACTIVITY
In the beginning, make a quick recapitulation of subtraction done by crossing with numbers 1–9. Explain subtraction by crossing out with the help of the examples on **page 93**. Let them count the total and the crossed out objects in the exercises and write the answers on their own.	**CW:** pg 93-94 of TM

Pg No. 95-96

Topic: Subtraction Using Number Line

Learning Outcome: Subtract numbers (up to 20) by backward counting

TEACHER TIPS	STUDENT ACTIVITY
As Students have done this before, they should be able to understand that if they take away the number of steps they have jumped back from the first number, they get the number where they stopped. Help them to write the subtraction difference for the backward counting they made on the number line.	**Activity**: 1. Say aloud a number (1–20) and ask the class to make backward counting starting from that number and stop counting when you say aloud 'STOP'. 2. As they stop, ask the students to count and say how many steps they have counted backward. **Note**: Repeat the activity. **CW:** pg 95-96 of TM **HW:** pg 32 of Math PB

Pg No. 97-98

Topic: Subtract Without Making Lines

Learning Outcome: Subtract numbers (up to 20) vertically

TEACHER TIPS	STUDENT ACTIVITY
Tell them once how to draw and cross out the sticks to subtract vertically and then let them solve the problems on **pg 97** and **pg 98**.	**Activity**: 1. Say aloud a number (1–20) and ask the class to make backward counting starting from that number and stop counting when you say aloud 'STOP'.

	2. As they stop, ask the students to count and say how many steps they have counted backward. **Note**: Repeat the activity.

Pg No. 98-101

Topic: Add or Subtract, Draw and Answer

Learning Outcome: Add and subtract numbers up to 20
Using addition and subtraction signs for the problems sentences

TEACHER TIPS	STUDENT ACTIVITY
Motivate students to add and subtract in the exercise given on **page 98** while you monitor their work. Help them understand each problem and randomly ask students if it an addition problem or subtraction problem. Thereafter they may be told to write '+' and '-' signs for the problems sentences.	**Activity**: Let the students enjoy drawing and colouring the objects for each given problem on **page 100** and **101**. **CW:** pg 98-101 of TM **HW:** pg 33(Q2), pg33(Vertical Subtraction), and pg 34 of Math PB

Pg No. 102-104

Topic: Read and Find the Answer **Learning Outcome**: Read and understand the problems sentences and write the

TEACHER TIPS	STUDENT ACTIVITY
Explain what they have to do with the help of given example on **page 102** and solve it on board. Encourage them to read the problem and understand and come up with the solution verbally. Validate their answers and then ask them to respond in the book.	**CW:** pg 102-104 of TM **HW:** pg 35,36 of Math PB

Website Links:

For teachers:

- http://mathwire.com/strategies/teen.html
- http://www.k51earning.com/free-math-worksheets/frst-grade-1/number-charts

- http://missgiraffesclass.blogspot.in/2016/01/making-10-to-add.html
- http://www.mathematicshed.com/maths-story-shed.html

For students:

- https://ww-wsplashmath.com/math-skills/first-grade
- http://www.mathplayground.com/mobile/numbettwins_fullscreen.htm

Note: Extra questions for each of the Math concepts are given in the TinkerMath Practice Book which can be answered by the students anytime during the week/weekend the concept is discussed in class or as per their convenience. Parents/ adults may also check the responses given by their wards to assess their understanding.

Answer Keys

Chapter

5 Time

 Explain  Demonstrate  Interact  Motivate/Revise  Board Work  Linked Activity

Note: Make students aware of how they can represent different parts of a day using time. provide examples such as daily activities, class timetable, etc. to help them remember a particular time. Give basic idea of a clock and the way it shows time. Students should be aware of the terms 'hour' and 'minute' and how they are shown on a clock with the help of two hands.

Pg No. 107-108

Topic: Day and Night Song, Before We Start, My Maths Vocabulary

Learning Outcome: Identify day and night activities through a poem

TEACHER TIPS	STUDENT ACTIVITY
 Read the poem given on page 107 and ask the students to tell what activities they do during the night and day as described in the poem.  Explain that we can get an idea of time if we remember our regular daily activities done in a particular time of a day.  Encourage them to match the activities given on **pages 108** and talk about them. Read aloud the Maths vocabulary and ask them to write the words at home.	**CW:** pg 107-108 of TM

Pg No. 109-111

Topic: Time of the Day **Learning Outcome**: Identify hours of a day in terms of morning, noon, afternoon, evening and night

TEACHER TIPS	STUDENT ACTIVITY
 Make students quickly identify a particular part of the day (morning, noon, afternoon, evening, night) by remembering the regular activity that they do during that time.	 **Activity**: Ask the class to match the activities given on pages 108 and talk about them.

Refer to . Discuss if they do similar activities during the time of the day they have mentioned.	**CW:** pg 109-111 of TM

Pg No. 112-113

Topic: Measuring Time

Learning Outcome: Understand about the types of clocks and how to read time by looking at the clock hands
* Identify clock hands and read the time when minute hand is pointing 12

TEACHER TIPS	STUDENT ACTIVITY
Connect the students with the terms (morning, noon, afternoon, night) that you explained while teaching **pages 110-111**. Tell the class that a clock is a machine that helps to tell the exact time of these hours. Use the description of a clock given on **page 112** to show how a clock looks. Ask the class to observe the pictures of clocks given on **pages 112**. Explain that there are many types of clocks. Tell them about digital clock in which no hands are there. Use the examples of times given on **page 112-113** and explain how to read the time on clock by looking the position of hour hand and minute hand. Refer to .	**Activity**: Ask the class to do the activity given on page 113. **Activity 2**: Show the wrist watch you are wearing. Let them see the hour and minute hands in it. **CW:** pg 112-113 of TM **HW:** pg 37, 38 of Math PB

Pg No. 114-115

Topic: Draw Hands of Clocks **TLC**: a round cardboard, thick paper sheet, thumb pin

Learning Outcome: Draw the missing hands of the clocks

TEACHER TIPS	STUDENT ACTIVITY
Recapitulate them about the hour and the minute hand. Ask them to read the time on the clocks on **page 114**.	**Activity**: 1. Arrange a round cardboard, or a paper plate. Write numbers 1-12 to make it a clock.

You may ask the class to draw the missing hour and minute hands of the clocks on page 115 on their own and read aloud the time on the clocks. Refer to .	2. Pierce a hole and put two paper hands, minute and hour hand, with the help of a thumb pin. 3. Invite students in front. 4. Speak aloud a time and ask them to show that time on the clock by rotating the hands. **CW:** pg 114-115 of TM **HW:** pg 39 of Math PB

Pg No. 116-119

Topic: Measuring Time

Learning Outcome: Understand about the types of clocks and how to read time by looking at the clock hands
* Identify clock hands and read the time when minute hand is pointing 12

TEACHER TIPS	STUDENT ACTIVITY
Interact with them if they have a wrist watch. Ask them what kind of watches they have; their colour, size dial, hands and numbers on the watch. Let them rack their brains to decide which activity will take more time given in exercise 5 on **page 116**. Ask them why. Try to elicit answers from most of the students. Refer to . They may be told to write and draw missing numbers and hands in the clock to show 10 o'clock on **page 118**.	**Activity**: Let the class do the activity given on **page 117**. **CW:** pg 116-119 of TM

Website Links:

For teachers:

- https://www-education.com/worksheets/first-grade/time/
- http://www.k51earning.com/free-math-worksheets/first-grade-1/telling-time
- http://nrich.maths.org/6070

For students:

- http://www.abcya.com/telling_time-htm

- http://www.mathplayground.com/puzzle_pics_2/tilesmath_clocks.htm

Note: Extra questions for each of the Math concepts are given in the TinkerMath Practice Book which can be answered by the students anytime during the week/weekend the concept is discussed in class or as per their convenience. Parents or any adult of the family may supervise their work as there is some cutting work involved. Parents/adults may also check the responses given by their wards to assess their understanding.

Answer Keys

Chapter

6 Measurement

Explain Demonstrate Interact Motivate/Revise Board Work Linked Activity

Note: Give plenty of examples to students so that they develop the idea of size, mass and capacity before leaming the use of tools to measure them. Make students aware of the fact that size is not always the criteria of identfication of how heavy or light an object is. Structurize the teaching strategy in a vay so that students understand the distinctive use of the three different measurements discussed in the lesson.

Pg No. 5-7

Topic: Measurement Riddles, My Maths Vocabulary, Tall and Short

TLM: clothes of different sizes such as T-shirt, frock, etc.

Learning Outcome: Understand animals as small, big, tall and heavy
- Describe objects as big, small, tall, short, heavy, light

TEACHER TIPS	STUDENT ACTIVITY
Ask the riddles given on **page 5** and elicit answers from the student. Ask the students to carefully observe the animals shown in the pictures as you read about them. Explain sizes by using simple synonymous words like 'huge', 'fat', 'tiny', 'long', etc. so that students can easily identify and describe variation of sizes. You may write the words 'big', 'small', 'heavy', 'fat', 'little', 'long', 'Tall', 'short' on board and ask the students to think and give examples of objects whose size match with one or more words that you have written. Tell the students that we select the cloth size depending on how big or small a person is. Refer to . Read aloud the Maths vocabulary and ask them to write the words. Ask them to colour the pictures that look tall than the other in each set on **page 7**.	**Activity**: Show them two three real clothes of different age groups and ask the students whom will those clothes fit and why. **CW:** pg 5-7 of TM

Pg No. 8

Topic: Tallest and Shortest **TLM**: bottle, paper, cup, ruler, eraser, pencil, crayon, marker pen, duster, paper roll, book, etc.

Learning Outcome:
- Identify tall and short objects
- Describe different types of heights
- Recognise the size of a person and compare heights

TEACHER TIPS	STUDENT ACTIVITY
Ask them how many family members they have. Ask them who is tall and who is short. Use the pictures given on **pages 7** and show how people differ in height. Explain that objects can differ in height too. Make students identify and describe objects with small height as 'short' and big height as 'tall'. Explain the class that when we compare height of more than one object, we call that object 'tallest' whose height is greatest and one that is smallest in height is called 'shortest'. Let them tick the tallest objects in the exercise on **pages 8**. Refer to .	**Activity**: 1. Show 4–5 real life objects arranged in standing position like bottle, paper cup, pencil, crayon, ruler, eraser, etc. and ask the class to identify the 'Tallest' and 'Shortest' objects. 2. Ask the students to name the object first and then say 'Tallest'/'Shortest'. For example, 'Bottle is tallest and eraser is shortest.' **CW:** pg 8

Pg No. 9-10

Topic: Length, Measure using hand span

Learning Outcome:
- Compare lengths
- Use non-standard methods to measure length
- Give examples of standard units of measuring length

TEACHER TIPS	STUDENT ACTIVITY
At first, recall the term 'tall' and describe it as the measurement of length of an object that is in vertical/standing position. Explain the class with examples with some real life objects that we see a size based on how high or short it is or how far it is spread on a surface. Let them understand 'long' and 'short' in terms of objects	**Activity**: Let students measure book, table, bottle, classroom floor, etc. with the help of handspan, cubit and foot span. Different students can measure the length of different objects using their body parts.

covering space on ground. Tell the class that we use different types of tools to take measurement. Narrate the story of ancient world and say that in old days, people used their body parts to measure length. Call a student to come in front and explain by showing his/her body parts the non-standard length measuring tools that are mentioned on **page 9**. You may show by matching your hand span with that of the student whom you called that hand spans differ from person to person. Help students understand that all other body parts differ in length in similar way. You may match two rulers and show that standard measuring tools never differ from one another. Refer to . Show them the standard units of measuring length such as scale and measuring tape.	**Activity 2**: Ask the class to do the activity given on **page 10**. **CW:** pg 9-10 of TM **HW:** pg 40 of Math PB

Pg No. 11-14

Topic: Heavy and Light **TLM**: paper plate, metal spoon, cotton ball (bigger in size than marble), marble, paper sheet, eraser

Learning Outcome:
- Identify heavy and light objects
- Read weight measurement shown by balance scale

TEACHER TIPS	STUDENT ACTIVITY
Hold your purse in one hand and a marker in other hand. Tell them that the purse is heavy and the marker is light. Refer to . Make the students understand that when they pick a heavy object, it hurts their hand than when they pick a light object. Let them understand the picture on **page 11**. Explain with the help of examples given on **page 11** as well as real life examples. Motivate them to respond on **page 12** on their own.	**Activity 1**: Ask students to hold their school bag in one hand and pencil box in another hand and identify which one is 'heavy' and 'light'. **Activity 2**: Use pairs of objects like paper plate and metal spoon, cotton ball and marble, etc. and ask students to hold them and identify the heavy and light object.

Explain them the tools of measuring weight such as weighing machine and balance scale. Refer to .	**CW:** pg 11-14 of TM **HW:** pg 41, 42 of Math practice book

Pg No. 15-17

Topic: Capacity **TLM**: one plastic cup

Learning Outcome:
- Understand the concept of capacity and compare capacities
- Use a cup to measure capacity

TEACHER TIPS	STUDENT ACTIVITY
Ask the student in which container they drink milk. Ask them to name some containers that are used to store water, oil, milk. Tell them that different containers have different sizes. Some can take more things and some can take less things. Ask them to look at the picture on **page 15** and understand what the boy is doing. Tell them that capacity is used to measure how much liquid a container can hold. Help students understand that they cannot hold and keep water in their hand/balance pan to know how heavy or light it is. That is why, we use containers to measure how much liquid they can hold. Ask students to carefully observe examples given on **page 15-16**. Explain the students that capacity of a small container is less than the capacity of a big container. So, a small container will take more number of times to fill a big container. You may arrange bottles of different sizes and ask the students to compare their capacity. Explain the students that if you fill two different containers using one container, container of small capacity will take less number of times to fill up than the container of larger capacity. Refer to .	**Activity 1**: 1. The student may be told to look at their water bottles. 2. Now show them a plastic cup. Ask the students how many cups of water is in their water bottle. Let them make a guess. You may tell them that their water bottles different capacities. Some can store more cups of water and some can store less cups of water.

Website Links:

For teachers:

- https://www.education.com/worksheets/first-grade/measurement/
- http://www.themeasuredmom.com/math/measuring/

For students:

- http://wvm.mathnook.com/math/mathpupmeasurement.html
- https://eu.ixl.com/math/measurement

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Answer Keys

Chapter

7 Numbers Beyond 20

Explain Demonstrate Interact Motivate/Revise Board Work Linked Activity

Note: Strengthen the number counting sense in students through various methods discussed in the chapter. Provide them adequate scope to apply the already taught operations in the new numbers they are learning. Explain lessons to make students grow their familiarity on place values.

Pg No. 20-22

Topic: Butterfly Story, Counting by Tens, My Maths Vocabulary

Learning Outcome: Use the method of making group of 10 and count numbers beyond 20

TEACHER TIPS	STUDENT ACTIVITY
Read aloud the brief and ask the students to count the caterpillars on each plant given on page 20. Explain that they can easily count the total number if there are objects in groups of 10s. Recall the group of 10 done in chapter 4. After that, ask students to come to the page 21 and count numbers in the grid. Tell them that this table shows all the numbers 1 to 99 and is organized in rows with 10 numbers per row. Ask students how many groups of 10 they have coloured. Read aloud the Maths vocabulary and ask them to write the words.	**CW:** pg 20-22 of TM **HW:** pg 44 of Math PB

Pg No. 23-25

Topic: 10's Family **TLC**: bottle, paper cup, ruler, eraser, pencil, crayon, marker pen, duster, paper roll, book, etc.

Learning Outcome: Count groups of 10s with the help of 10 frame, sticks and blocks

TEACHER TIPS	STUDENT ACTIVITY
Explain them how 10s family can be easily counted as each bundle of sticks given on **pages 23** signifies number 10. Ask them to count, colour and match in exercises groups of ten on **page 24-25**.	**CW:** pg 22-25 of TM

Pg No. 26-29

Topic: Numbers from 21 to 30

Learning Outcome:
- Count, read and write numbers 21–30
- Represent 21–30 with the help of 10 frame, abacus and base 10 blocks

TEACHER TIPS	STUDENT ACTIVITY
Ask the students to carefully observe how numbers 21, 22, 23 are represented on **page 26**. Tell the students that numbers can be represented by making groups of tens and ones using blocks, sticks, abacus and frames. Explain the students that ones are shown by single unit. Group of ten is shown by making a tower/bundle of 10 single units. Tell the students to observe **page 27** too where numbers from 24 to 30 are made using sticks. Ask the class to do the exercises given on **page 28-29** while you assist them.	**CW:** pg 26-29 of TM **HW:** pg 45 (Q2) of Math PB

Pg No. 30-36

Topic: Numbers from 31 to 37, Numbers from 38-40 **TLC**: paper plate, metal spoon, cotton ball (bigger in size than marble), marble, aper sheet, eraser

Learning Outcome:
- Count, read and write numbers 31–39
- Represent 31–39 with the help of 10 frame, abacus and base 10 blocks

TEACHER TIPS	STUDENT ACTIVITY
Ask the students to observe the representation shown on **page 30** and see how 31-37 is formed with three groups of tens. Recall how 10 and 20 are formed. You may ask students to write the numbers as per the instruction on **page 32**. Make the students observe the number making on **page 33** and encourage them to respond on **pages 34-35**. Refer to .	**Activity**: 1. Say aloud a number at random from 0–39. 2. Ask the students to write the number and its name in words. **Note**: Repeat the activity so that students gain their speed of writing numbers and their names. **CW:** pg 30-36 of TM **HW:** pg 45-46 (Q3) of Math PB

Pg No. 37-44

Topic: Numbers from 41 to 50

Learning Outcome:
- Count, read and write numbers 31–39
- Represent 31–39 with the help of 10 frame, abacus and base 10 blocks

TEACHER TIPS	STUDENT ACTIVITY
Ask students to read aloud the numbers 40–50. Help students remember that groups of 10 are increasing after every 10 numbers. Encourage them to respond to the exercises on **pages 38-44** to recapitulate numbers from 31-50 and assess their understanding. Refer to .	**Activity**: Conduct a rapid Question-Answer session. Ask questions like 'How many groups of ten are there in 31?', 'How many ones are there in 45?', 'Which number comes after 39?', 'Which number is before 38?', etc. **Activity 2**: Say aloud a number at random from 0–50. Ask the students to write the number and its name in words. **Note**: Repeat the activity with as many students as you can. **CW:** pg 37-44 of TM **HW:** pg 46-47-48 (Q4, 5) of Math PB

Pg No. 45-47

Topic: Comparing Numbers **Learning Outcome**: Compare numbers 0–50

TEACHER TIPS	STUDENT ACTIVITY
In the beginning, recall the numbers 0 to 50 and let students remember that groups of 10 increase after counting every 10 numbers. At the time of comparing numbers, students need to check both ones and tens places. You may refer numbers 0–9 as 1-digit numbers and the numbers from 10 onwards are made with 2 digits. Explain the example given on **pages 45** and show the students how they will be checking tens place first and then ones place while comparing two numbers. Recall the signs to show 'greater (>)', 'less (>)' and 'equal (=)'. You may conduct a practice on counting numbers in ascending and descending orders before explaining how to compare numbers. Refer to .	**Activity**: Ask the students to do the activity given on **pages 45-46**. **CW:** pg 45-47 of TM **HW:** pg 49-50-51 of Math PB

Pg No. 48-50

Topic: Addition **Learning Outcome**: Make vertical addition using numbers 0–50

TEACHER TIPS	STUDENT ACTIVITY
Recapitulate on vertical addition by making group of 10 done with numbers 0 to 20. Use the examples given on **page 48** and show how to write digits in ones and tens columns and add. Ask students to see the pictorial representations and check the additions. Encourage them to solve the sums given on **pages 49-50** on their own.	**CW:** pg 48-50 of TM **HW:** pg 52 of Math PB

Pg No. 50-53

Topic: Subtraction **Learning Outcome**: Make vertical subtraction using numbers 0–50

TEACHER TIPS	STUDENT ACTIVITY
Recall on how students did vertical subtraction by crossing out with numbers 0 to 20. Use examples given on **page 50** and show how to write digits in ones and tens columns and subtract. Remind them to write greater number on top. Students should check the subtractions done by observing the pictorial representations. Encourage them to solve the sums given on **pages 52-53** on their own.	**CW:** pg 50-53 of TM **HW:** pg 53 of Math PB

Pg No. 54-60

Topic: Addition and Subtraction **Learning Outcome**: Practice the addition and subtraction sums and solve word problems

TEACHER TIPS	STUDENT ACTIVITY
Encourage the students to solve vertical addition and subtraction sums given on **page 54**. Explain the word problems of addition and subtraction given on **page 55**. Explain them the word problems on **pages 56-58** and ask them to solve the problems. Check and validate their answers by reading aloud. Check the students' understanding while they do comparing exercises. Assist them if required and help the struggling students by giving further practice.	**CW:** pg 54-60 of TM **HW:** pg 54, 55 of Math PB

Website Links:

For teachers:

- http://wwwsoftschools.com/grades/lst_grade/math/
- http://www.learnnc.org/lp/pages/783

For students:

- https://www-sheppardsonvare.com/mathgames/menus/comparingnumbers.htm
- http://www.primarygames.com/math/mathmazecount/

Note: Extra questions for each of the Math concepts are given in the TinkerMath Practice Book which can be answered by the students anytime during the week/weekend the concept is discussed in class or as per their convenience. Parents/adults may also check the responses given by their wards to assess their understanding.

Chapter

8 Data Handling and Ordinal Numbers

Explain | Demonstrate | Interact | Motivate/Revise | Board Work | Linked Activity

Note: Introduce the chapter of Data Handling in a way that students should be able to identify and sort the items as needed for data collection. Arrange activities and let the students sort and record real life objects and discuss the accuracy of data collected by them.

Pg No. 64-66

Topic: Data Handling, My Maths Vocabulary

Learning Outcome: Recognise items needed for data handling and count their number

TEACHER TIPS	STUDENT ACTIVITY
Explain the scene shown and ask students to carefully observe the picture given on page 64 and identify different types of items. Ask them to name the items shown in the picture. Help them to point the similar items and let them count them and check with the given record given by boy's mother. Explain what is data handling as given on this page. Help the students to develop their accuracy of spotting and counting similar items needed for data handling. Read aloud the Maths vocabulary and ask them to write the words.	**Colouring Activity**: Ask the class to do colouring as instructed on **page 66**. **CW:** pg 64-66 of TM **HW:** pg 56 of Math PB

Pg No. 67-69

Topic: Data Collection **TLC**: bottle, paper cup, ruler, eraser, pencil, crayon, marker pen, duster, paper roll, book, etc.

Learning Outcome: Answer questions based on collecting data

TEACHER TIPS	STUDENT ACTIVITY
Begin the session with an activity. Refer to .	**Activity**: Ask the class to complete the Activity given on **page 67/68**.

Let students get the idea of how to record data and how to use the recorded data in answering questions. You may give the example of class attendance and explain the class that the daily attendance helps in finding the number of absent students. To solve the question given on page 69, ask them to sort similar items first and then count them. Ask each student to write the number of items he/she has counted in their notebook.	**CW:** pg 67-69 of TM

Pg No. 70-73

Topic: Ordinal Numbers

Learning Outcome: Solve data handling problems based on ordinal numbers

TEACHER TIPS	STUDENT ACTIVITY
Explain that ordinal numbers are used to define the position of objects. Explain by pointing the picture given on **page 70** and show how the position of running track is labelled with ordinal numbers. The activity on **page 70** is ideal to be done on the last working day of any week. If not, then use the previous week's attendance record and guide the students to answer the questions. Refer to . On the basis of their new learning, ask the class to do the exercises given on **pages 71-73** while you assist them.	**Activity**: Ask the class to complete the Activity given on **page 70**. **CW:** pg70-73 of TM **HW:** pg 57 of Math PB

Website Links:

For teachers:

- https://mww.education.com/worksheets/first-grade/graphing/
- http://carlisle.k12.ma.us/Page/647

For students:

- http://www.abcya.com/counting_sorting_comparing.htm
- http://www.topmarks.co.uk/lnteractve.aspx?cat=18

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Chapter
9 Pattern

Explain Demonstrate Interact Motivate/Revise Board Work Linked Activity

Note: Enhance the observation ability in students so that they are able to idenffy and describe the forrnation of patterns. Give sufficient exanvles so that students get the basic idea of various types of patterns.

Pg No. 75-76

Topic: • If you're happy • Patterns

Learning Outcome: • Identify different patterns and make patterns
• Follow pattern rule and make new patterns

TEACHER TIPS	STUDENT ACTIVITY
Ask them to identify the patterns given on **page 75** and also ask where they have seen these patterns. Explain that we see different patterns in nature such as on animals' skin, in leaves of plants and we also see some patterns in designs on bed sheets and clothes. Explain the class how to make a pattern by drawing some simple examples on board (shapes, simple objects, etc.) Make students understand that every pattern follows a particular rule. Help them to identify the rule of a pattern properly. Show the students the examples given on **pages 76**. Ask the students how they are going to extend each pattern. Ask the students to describe the rule for each pattern. Help students to understand that in a pattern, shapes can change in repeated intervals, can increase or decrease in number).	**Activity**: 1. Ask students to clap in the same way as you do. Clap in a particular rhythm. For example, first clap twice, then clap thrice, etc. 2. Make students clap with you 4–5 times. Then, ask them to clap like this by themselves. **CW:** pg 75-76 of TM **HW:** pg 58, 59 (Q 1, 2 and 3) of Math PB

Pg No. 77-78

Topic: Pattern in Numbers **TLC**: cotton bud, round bindis, chart paper, glue

Learning Outcome: Identify different patterns in numbers
• Make number patterns by jumping steps

TEACHER TIPS	STUDENT ACTIVITY
Explain the formation of number patterns given on **page 77**. You may recall the types of patterns that are explained before. For example, repeating patterns, increasing patterns, decreasing patterns, shape changing patterns, etc. so that students get new ideas of making their patterns. Refer to . Draw the number line on board and recall the forward and backward counting already done. You may make a recapitulation to remind the class that in forward and backward counting, one step is jumped ahead or back respectively. Next, show the number line given on **page 77**. Help the students to identify the similar number of steps jumped ahead. Students should be able to identify and describe the dissimilarity in the number of steps jumped in **B**. You may ask the class to think and make a pattern by jumping backward on number line. Encourage the students to respond on **page 78** by identifying the patterns.	**Activity**: 1. Ask each student of the class in advance to bring a pack of cotton buds, round bindis, chart paper and glue. 2. Each students will make different types of patterns using cotton buds and bindis and paste them on the chart paper with the help of glue. 3. Once done, they will exchange the sheet of patterns with one another and discuss the rule used for making the pattern. **CW:** pg 77-78 of TM **HW:** pg 60 of Math PB

Website Links:

For teachers:

- https://www.education.com/worksheets/first-grade/identify-continue-shape-patterns/
- http://nrich.maths.org/6193

For students:

- http://www.abcya.com/patterns.htm
- https://wwwixl.com/math/grade-l/introduction-to-patterns

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Answer Keys

Chapter

10 So Many Numbers

Explain Demonstrate Interact Motivate/Revise Board Work Linked Activity

Note: The chapter is intended to make students quickly read and write higher order numbers keeping in mind the place value of the digits. Likewise, put emphasis on observing a number and identify the position where digits are placed and read it quickly. As you teach the chapter, make students aware that numbers can be beyond the scope of the counting processes that they have already learnt. At this stage, students should be comfortable to identify, compare, add and subtract numbers- Introduce new operations like multiplication and division with the help of real life examples. Give suffcient opportunity where students will be using these operations and gain good pace to solve problems applying these operations in their future days.

Pg No. 79-81

Topic: Numbers from 0-100

Learning Outcome:
- Recapitulate numbers from 0–50
- Identify numbers 51–100
- Count numbers till 100 by step jumping

TEACHER TIPS	STUDENT ACTIVITY
Begin the session with reciting the poem given on 79. Ask them to circle the number names mentioned in the poem. In the beginning, make a rapid recapitulation on the numbers from 0 50. Give students numbers to write them in words. Say aloud a number and let the class to count forward/backward. Recall the counting by making groups of ten for 2-digit numbers. Say aloud a number and ask students to say the groups of ten present in that number. Say aloud some 1-digit numbers to check whether the students remember the difference between 2-digit and 1-digit numbers. Let the students identify and write the numbers in between and number pattern formed by skip counting in 10s on pages 80-81.	**CW:** pg 79-81 of TM **HW:** pg 61, 62 of Math PB

Pg No. 82-83

Topic: Numbers 51 to 100

Learning Outcome:
- Read and write 51–100 in number and words
- Identify hundreds place
- Join groups of 10 and make 100
- Write numbers in tens and ones

TEACHER TIPS	STUDENT ACTIVITY
Recapitulate the concept of less than and greater than and then ask the students to circle the number on the number line as instructed on **page 82**. Recall the concept of writing a number in tens and ones. Give some examples and show how to write a number in this way. Use pictorial representation with base 10 blocks to show the number in terms of tens and ones. Explain the formation of patterns in numbers given on **page 83**.	**CW:** pg 82-83 of TM pg 63 of Math PB

Pg No. 84-85

Topic: Comparing Numbers

Learning Outcome: Compare numbers 0–100

TEACHER TIPS	STUDENT ACTIVITY
Students are already introduced on how to compare numbers. Use blocks/strips to show two numbers and let them identify greater/less number. Ask them to write the numbers and say tens and ones of the greater/less number. You may recall that in order to compare two numbers, students should start from left and compare the digits of tens, then ones. Students should understand that 1-digit numbers are always less than any 2-digit numbers. Recapitulate the signs of less/greater/equal and increasing and decreasing order. Ask them to do the exercises on **page 84/85**.	**CW:** pg 84-85 of TM **HW:** pg 64, 65, 66 of Math PB

Pg No. 86-89

Topic: • Place Value-Tens and Ones • Addition

Learning Outcome: • Identify tens and ones of numbers
• Find the sum adding tens and ones of numbers

TEACHER TIPS	STUDENT ACTIVITY
Recall the place value in tens and ones. Elaborate on it and show how a number can be written in an extended form. Help students understand that when we add numbers, ones and tens can be added separately. Putting together these tens and ones, we get the sum. Tell them to observe the pictures of blocks/sticks given on **pages 87-88** and get the idea of how ones and tens of numbers are put together to obtain the sum. Guide the students to add numbers and show them correctly by drawing blocks/sticks.	**CW:** pg 86-89 of TM **HW:** pg 67 (Q 1, 2) of Math PB

Pg No. 90-95

Topic: *Subtraction *Story Sums

Learning Outcome: Find the difference subtracting tens and ones of numbers

TEACHER TIPS	STUDENT ACTIVITY
Use blocks/strips and show the class that subtraction is the reverse process of addition. Here also, help the students understand that tens and ones can be subtracted separately. The difference is obtained putting together the tens and ones. Remind the class that subtraction is always done from the greater number. Let the students solve addition and subtraction word problems after you explain them.	**CW:** pg 90-95 of TM **HW:** pg 67-70 (Subtraction and Story Sums) of Math PB

Pg No. 96-97

Topic: Skip Counting

Learning Outcome: • Make different types of skip counting

TEACHER TIPS	STUDENT ACTIVITY
You may ask the students to write the numbers from the chart by step jumping in 3s and 4s. Make a recapitulation on the patterns made out of step jumping in chapter 9. Explain the concept of skip counting as the numbers obtained when we count by jumping equal number of steps.	**CW:** pg 96-97 of TM **HW:** pg 70 (skip Counting) of Math PB

Pg No. 98-100

Topic: Multiplication - Repeated Addition **TLC**: books, crayons, bottles, etc.

Learning Outcome: Use repeated addition to solve multiplication

TEACHER TIPS	STUDENT ACTIVITY
Before introducing the concept of multiplication, ask the students how they are going to find the number of hands of four students. Refer to . Show the pictorial example given on **page 98**. Explain that we make repeated addition to find the total number of objects repeating as equal sets. Tell that 'Multiplication' is the operation that is used to solve this type of repeated addition. Use the description given on **page 98** to show how to write a Multiplication Statement.	**Activity 1**: 1. Call four students to come in front. 2. Then, ask the class to count the hands of all these students and check their result. **Activity 2**: You may arrange sets of equal groups with real life objects (books, bottles, crayons, etc.) on the table and ask the class to find total number of objects. **Note**: Make students identify equal groups and understand where they an solve a problem using repeated addition/ multiplication. **CW:** pg 98-100 of TM **HW:** pg 71 of Math PB

Pg No. 101-105

Topic: Divide by Equal Distribution **TLC**: crayons (6)

Learning Outcome: Divide objects in equal distribution

TEACHER TIPS	STUDENT ACTIVITY
Before beginning the explanation, conduct the mentioned activity and discuss on how you distributed things by making equal groups. Use steps of the given activity to help students understand that distribution of things can be different. Refer to . Show the example given on **page 101**. Ask the students how many groups are formed in the given example and how many balls are there in each group. Let the students solve the exercises while you assist and assess their understanding.	**Activity 1**: 1. Call any three students to come in front and distribute six crayons (one by one) equally to each of them. Ask the rest of the students to say how many crayons you have distributed. 2. Take back all the crayons that you gave and ask one student to go ack to his/her seat. Next, distribute the six crayons (one by one) among the two standing students. Now, ask how many crayons are there with each student. 3. Take back the crayons. Call back the student who left to come in front. Now, distribute three crayons (one by one) equally to each of them. Ask the class to say how many crayons are distributed and how many crayons are there with each student. **CW:** pg 101-105 of TM **HW:** pg 72 of Math PB

Website Links:

For teachers:

- http://vrww.waldorfteacherresources.com/index.php?grade=1&page=Math
- http://www.teachingideas.co.uk/subjects/all-four-operations

For students:

- http://www.math4children.com/Grade1/games/index.html
- http://www_mathplayground.corn/WordProblemsWithKatie1_html

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Answer Keys

Chapter

11 Money

Explain Demonstrate Interact Motivate/Revise Board Work Linked Activity

Note: The chapter is included in order to make students of the age group be aware Of the value and use Of money in real life. Teach the chapter showing Indian notes/coins in the class. Give real life examples where students will reading prices of commonly used items (show them price tags, wrappers with price mentioned, etc.). Keep a discussion session to let students say how they are going to use money if they vant to buy these items. Give lots of exercises to let students identify money, compare and make combinations with them.

Pg No. 107-109

Topic: • Coins' Poem • My Maths Vocabulary • Coins and Currency

TLM: Coins: 1, 2, 5, 10 (GD-show rupee sign)

Note: Ask each student one day in advance to bring these coins to the class

Learning Outcome: • Identify some Indian coins by their value
• Explain the facts of Indian currency

TEACHER TIPS	STUDENT ACTIVITY
Collect the coins as mentioned in poem on **page 107**. Read the poem. While you read, pick and show the respective coin. Ask the students to observe carefully those coins while you read the respective stanza. Tell them that in India, we use coins and notes. Ask which coins and rupees have they seen. Explain the students that there are two types of money–Rupees (sign of rupee) and Paise (p). Paise are small while rupees are greater in value. You may ask students to give examples where they have seen the money to be in use. Refer to .	**Activity**: Randomly call students, show them a coin and ask what value does the coin have. **CW:** pg 107-109 of TM **HW:** pg 73 of Math PB

Pg No. 110-111

Topic: • Coins and Currency • Trace the Coin **TLM**: coins, pencil, eraser, paper

Learning Outcome: • Count money and write the amount using Indian currency symbol
• Identify valid Indian coins of different values

TEACHER TIPS	STUDENT ACTIVITY
(Before students begin the practice given on page 110) Explain the class that we add money in the same way as any other number, only difference is we put the symbol of Indian currency before the amount. Ask the students to do the activity after doing the exercise on page 110. Refer to .	**Activity**: Ask the class to do the activity on **page 111**. CW: pg 110-111 of TM

Pg No. 112-115

Topic: •Coins and Notes • Different Ways of Making 10 **TLM**: coins and notes

Learning Outcome: • Count coins and notes to find the total
• Identify valid Indian notes of different values and their equivalent coins
• Add coins/notes and make the amount equal to note/coin of big value
• Identify the money in coins to use for buying things

TEACHER TIPS	STUDENT ACTIVITY
Show the students coins of 50 p, 1 rupee, 2 rupees, 5 rupees, 10 rupees. Tell the class that we use these coins in our day-to-day life. Use the comparison of 1 paisa and 1 rupee to let students have an idea of how much big is a rupee than a paisa. Ask students to say how many groups of 10 they can make with 1 p to make one rupee. Make students aware that small monies add together to make a big money equal to a note/coin. Explain the comparison of money to be same as done with number. Explain them that 10 rupees can be made by different combinations	**Activity 1**: Show real life coins/notes and ask students to identify them. Next, show combinations of notes/coins and let students count and say the sum. **Activity 2**: Show the students real postal stamps to get an idea about them and may even note down the time they take to so this exercise. **CW:** pg 112-115 of TM **HW:** pg 74 of Math PB

of small money. Let them observe the coins and notes on **page 112** that be used for making rupees 10. Refer to . Give real life examples to explain how we compare prices when you go for shopping. Encourage them to match the prices of the objects with coins of the same value on **page 113**. Explain and assist them in solving Quick Maths problems about postal stamps.	

Website Links:

For teachers:

- https://www.education.com/activity/first-grade/money-math/
- http://wwrw.homeschoolmath.net/online/money.php
- http://www.mathwire.com/money/money.html

For students:

- http://www.kidsmathgamesonline.com/money.html

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Answer Keys

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