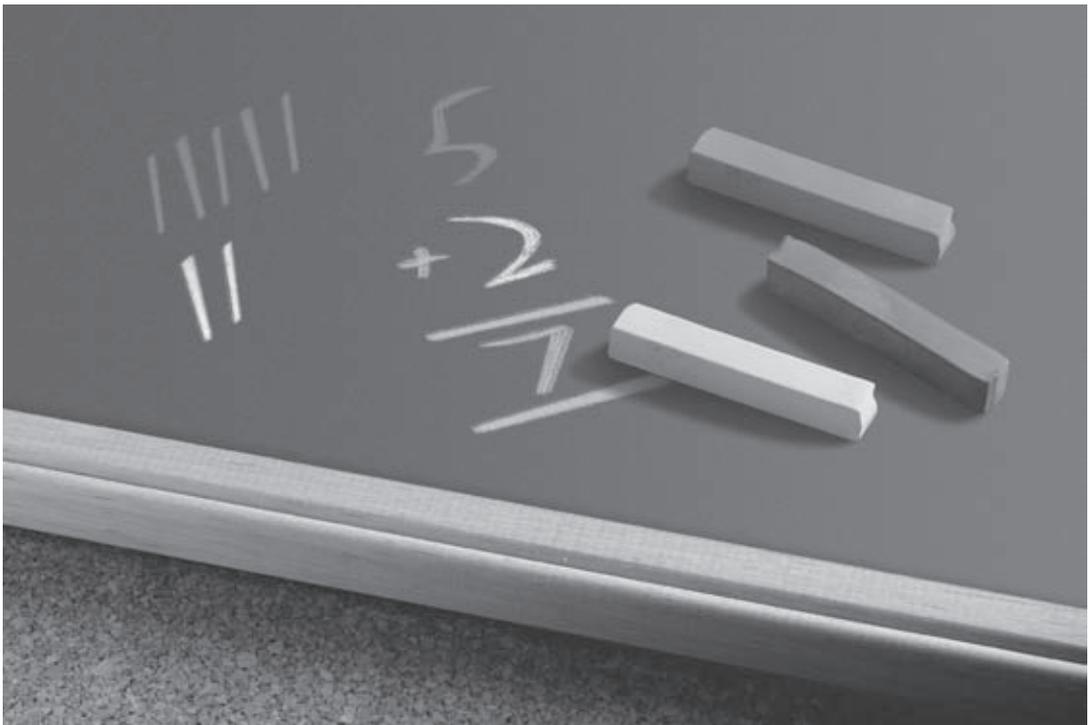


Teaching Guide
Second Edition with lesson plans

1

MATHS WISE



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INTRODUCTION

A. Introduction

Children come into Class 1 after having gone through the friendly, happy, and fun atmosphere of the pre-primary classes with bright inquisitive minds: playful, but ready to learn more. Remember, learning flourishes in a warm and friendly atmosphere.

The next two classes will have a similar cheerful and friendly ambience and with teaching equipment that the children are already familiar with. The books also are an extension of the *Maths Wise* Introductory books. This will make the children feel comfortable and happy, which is very helpful for absorbing and learning new concepts.

The pattern of Teaching Guide 1 continues, too. In fact, it is very strongly recommended that teachers of Classes 1 and 2 should go through the Introductory books and their guide.

All work in the books is preceded by a chat session, a classroom demonstration and work on the board, a visit to a garden, a zoo, a vegetable market or a bank, relevant to the topic of the day. The children then work in their books, followed by worksheets related to the topic for reinforcement.

Each lesson needs to be planned; not only the concept but the outdoor visit and the work in the book as well must all have a focus. For example, a visit to the zoo does not mean looking at all 200 animals. The exercises may involve ‘guessing’ the height of a giraffe (compared to the child’s height—3 times or 4 times), measuring the length and breadth of the cages, with paces converted into metres, as the child may have measured his classroom earlier; guessing the amount of food each animal eats, on an average day. With the help of the zoo warden, children discuss the weight of a cub compared with that of a lion, a human baby, or a human adult.

The zoo warden will be happy to give answers, if he is provided with a question sheet in advance.

A Maths Lab becomes more significant as children grow older. Working with their hands and using more than one or two senses makes their memory more retentive.

B. Maths Laboratory

At the Primary level, a central maths lab with this equipment would be very useful.

- plastic (or wooden) baskets or trays to keep this assortment of items
- bowls of multicoloured beads which can be used for sorting, grouping, and many assorted activities
- some soft-drink bottle caps, strings of 10 bottle caps strung together, and a group of 10 strings knotted together to represent one hundred. Sets of such strings can be used for explaining numbers and concepts of addition and subtraction



- weighing scales of four different types: spring weighing scale, an ordinary balance, a regular scale with a vertical circular dial, and a ground level weighing scale on which children can stand and weigh themselves. Of course, it is fun to show the children weighing scales at the airport and on railway platforms
- tape measures and rulers of different sizes
- shells, beads, and beans (of different sizes) in groups of 10s, 100s, and 1000s, wrapped securely in cloth bags
- several sets of four almost identical objects, one with a very slight difference, can be used to improve the students' powers of observation. For example, four face masks, three identical and one with an extra bunch of hair
- colourful pictures or charts of shops displaying fruits and vegetables and toys, (made in the classroom, to fit the requirement of the class) and a rack of clothes—with price tags
- fabrics or strong paper, to make a simple set of weighing scales
- wooden objects, such as balls (spheres), egg-shapes, dice shapes (cubes), box shapes (cuboids), and cones, set in a tray or in a box
- hollow cubes, cuboids, cylinders, and cones made from thick card, which can be opened out and laid flat
- flat shapes cut out from thick card or wood, such as circles, squares, polygons, and triangles so that the children can feel the flat surface and can count the corners and the edges. It will be useful to have flat shapes which are equal to the size of the solids so that children can find the relationship between, for example, a cube and a square
- rolls of cords and ribbons
- simple Suduko puzzles
- plastic or steel tins, jars, and bowls of different sizes for comparing capacity, placed in a large basket. (It is extremely desirable that bowls made of halves of dried coconut shells or bamboo segments, split in half, are also used where available.)
- pencils and crayons of different colours and lengths
- charts corresponding to every different concept in the book
- stand-alone mirrors, or squares of reflecting surfaces, preferably extra-glossy plastics for viewing symmetry
- a giant number square showing 1 to 100 on the walls and several sheets with blank squares for children to work on
- toy clocks, both analogue and digital, with time cards
- 12 pages (to make up a calendar) with large numbers and the names of the days. Sunshine, rain, and cold weather to be depicted by symbols on each day. Reinforce counting, association of weather with appropriate symbols and clothes which people wear. Seasonal foods can also be a part of the lesson
- geo board (11 x 11)

- links (multicoloured in the shape of gem clips): these help in sequencing and patterns and comparing lengths. These also help in fine motor control, when the child discovers the best way to open clips and join them together
- pegboard with pegs
- magnetic board with letters and numerals
- slates and chalks

Attractive, bright wallcharts and other child-friendly displays on walls go a long way towards making all basic concepts of learning maths very stimulating and exciting for the children.

A soft board covered with chamois and duster cloth is useful, as children can stick numbers or pictures on them and take them off when necessary.

C. Maths Wise Book 1

Book 1 has been written keeping in mind the Pakistan National Curriculum 2006.

The formatting of the book fairly similar to the Introductory Books 1, 2, and 3 and the 'discussion and demonstration' method continues. The pages are pleasing and colourful with child-friendly language and content which makes learning easy and fun. Children continue to be active participants, ask many questions, and learn at their own pace without any pressure to compete with others.

D. Topics covered

Concepts learnt in the pre-primary years at school need to be revised and formalized, with the help of some suggestions laid out in the Teaching Guide 1, so advanced knowledge of concepts now forms the core of the primary books. This Guide will deal with Book 1 unit-wise.

A great deal of classroom work from the books as well as on extra sheets or in class notebooks is necessary for the children to be able to work out exercises given in the book or solve problems mentally.

1. Activities

Activities in Class 1 will further help in:

1. concentration, because they create interest in the subject
2. recognition, e.g. the time taken to do various jobs
3. association, e.g. human beings and birds have two legs;
animals and the food they eat and their homes, finding similar objects or the odd one out
4. logic, e.g. descending order is the reverse of ascending order
5. matching of shapes, e.g. two different types of figures (if they have 3 sides, they are triangles; and if 4 sides, they are rectangles or squares)

6. recognition of fractions, as in half-an-hour
7. recognition of flat shapes e.g. shapes with similar properties
8. use of comparative language, e.g. long, longer, longest
9. recognition of another aspect of 0, as a place holder
10. working with 2Digit numbers, e.g. addition, subtraction
11. identification of shapes and patterns

2. Some useful suggestions

A sequence of activities is suggested in the use of these books.

- a. Each lesson is preceded by a 'discussion and demonstration' accompanied by visits to the market or maybe the bank according to the topic.
- b. It might be interesting to ask one of the more able children to come and work on the board while the teacher explains the subject. A different child each day helps boost everyone's confidence and the teacher is not 'partial' to a few.
- c. By now, children are used to working in their individual books. Independent work and a certain amount of tidiness must be encouraged.
- d. More work, similar to the page, is to be done by children on worksheets prepared by teachers in advance.
- e. Leading statements by the teacher form the basis of a fruitful discussion. And the success of a teacher can be measured by the number of questions the children ask.
- f. Children will always tend to make mistakes. It is suggested that mistakes are discussed and children are helped to arrive at the correct answer.

Every child is unique and special. This is a fact that children, whether 3 or 13 years old, are happiest learning at their own pace. Some children work faster than others. This is always a pleasure and must never be curbed. It is up to the teacher to provide more lateral work for their needs. But if a child is a slow learner, more repetition may be required. Handling such children with patience and encouraging them is the teacher's responsibility. A slow learner is not inferior to the rest and must never be allowed to feel small or inadequate. The teacher simply has to give more attention.

If a certain activity seems beyond most of the children in the group, insistence will only make them frustrated. It is best to leave the topic for a later date, when the children have experienced similar activities and are ready for it.

3. Praise

At the end of the lesson, if some children have done well, some praise and a coloured star or a smiley pasted at the end of the unit goes a long way in reaffirming to the children that they are making good progress. **Green** for **Great**, **Orange** for **OK**, and **Red** for **Redo** or **Revise**. Even those who have not done the work well, get a **RED** star.

Corrective remarks, if any, can be made in a 'sandwich' fashion. Away from the rest of the class, a positive remark is made first, such as, 'I like your clips!, Very smart!' A corrective remark follows, 'You could try and write more neatly next time' or 'Your work today was careless.' or 'Complete your work on each page before going to the next.' And, finally, a positive remark again, 'You are an intelligent child, I am sure you will get a Green star next time.' Positive, negative, positive feedback from the teacher does not let the children feel inadequate; they learn that right and wrong are ways of life and one must learn to correct the wrong.

E. Lessons

It is suggested that the teachers spend 40 minutes per lesson. However the time spent on each lesson is entirely on the teacher's discretion and the ability of the students to grasp the concept.

UNIT 1

NUMBERS

Teaching objectives

- to revise counting from 1 to 10
- to introduce a number line for counting
- to reinforce counting from 1 to 20
- to introduce the value of 0
- to introduce the concept of place values of 1s and 10s
- to introduce the numbers from 1–99 in figures and words
- to count in 10s and simple number sequences
- to introduce counting in ascending and descending order from 0 to 20
- to introduce ordinal numbers
- to reinforce the concepts of more and few
- to introduce counting in 2s

Learning outcomes

Children should be able to:

- use a number line accurately to count from 0 – 20
- write numbers from 0 – 99 in figures and words
- distinguish between sets of ten and those less than ten
- complete numeral sequences of 3 consecutive numbers
- arrange numbers correctly in ascending and descending order
- use ordinal numbers in everyday life and label up to 10 items arranged in a series
- demonstrate an understanding of more and few in everyday situations
- use a number line accurately to count from 0 – 20 in twos

Teaching materials:

- dice
- beads of 4 different colours
- rods to thread beads on
- lengths of string to make bracelets
- packs of straws
- 10 empty boxes

- 10 balls
- blocks with 1 to 20 written on them.
- Thermocol balls
- pencils and pencil boxes
- ping pong balls

Learning activity

Lesson 1: Number Names; Number Pyramid

40 minutes

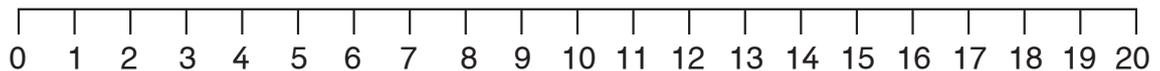
This lesson is a revision of concepts taught earlier. Give the children a lot of practice counting different objects. The children can count individually or in groups.

Task: Children attempt pages 2 and 3.

Lesson 2: Use of the number line; Numbers 1–20

40 minutes

Ask the children to count from 1–20 orally then draw a number line from 0–20 on the floor as shown:

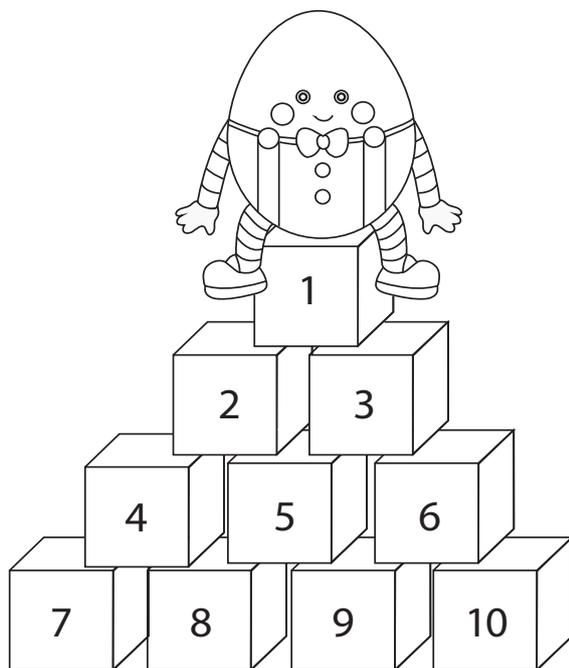


The children can play hopscotch on the number line. Call out instructions like ‘Start from 0 and move 3 steps forward. Which number do you land on?’ They call out their answers and spell out the number names. This will help revise number names and their spellings too.

Play the game ‘You Can Count on the Number Line’. The game will help to recall number names, counting, and addition.

Pair the children and give one of them a dice. The second student should stand on the number line. Ask the first child to roll the dice and call out the number on the dice. The second child moves that many places on the number line. Every time he or she lands on a new number, he or she calls out that number name. Next, they switch places and the exercise is repeated.

Seat the children in groups and give them blocks with 1 to 20 written on them. Ask them to arrange the blocks into a pyramid, first with the largest number on top, and the second time with the smallest number on top. Once they have done this, ask them questions based on the formation. For example, if Humpty Dumpty sat on the top number and fell off to HIS right, which numbers would he bounce off?



Task: Children attempt pages 4 and 5.

Lesson 3: ZERO is a hero. It can do many things; Concept of Ones **40 minutes**

Explain that the value of zero is 'nothing'. Give several examples to make the concept clear. Use a set of beads with large holes and thin rods which will go through the holes in the beads. Put 10 beads on each rod. Use 5 beads of each colour, e.g. 5 red and 5 green.

Ask each student to show 5 beads. He may show any combination of colours, for example, 4 red beads and 1 green bead; 2 red beads and 3 green beads; or 5 reds beads only; or 5 green beads only. The object here is to show 'a total of 5 beads'. Ask, 'How many beads will be left if you take 5 away?' The answer is, '0'. An abacus could also be used.

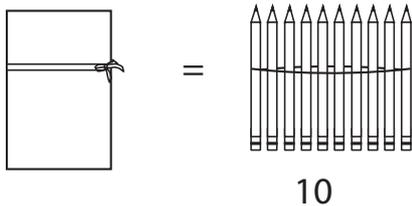
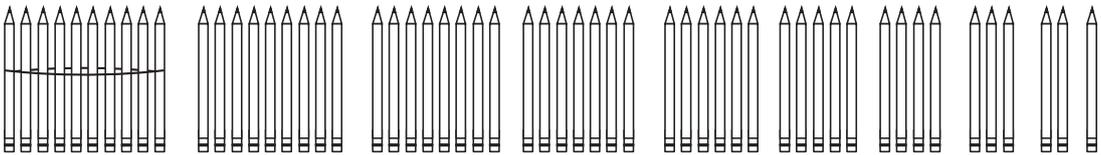
Task: Children attempt page 6.

Lesson 4: 0 as place value; understanding 10 **40 minutes**

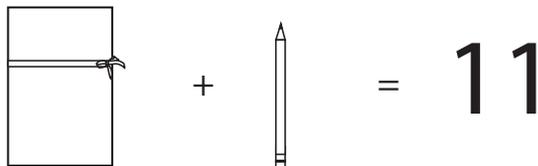
Place value is a crucially important concept introduced at this point, a clear understanding of which is essential in a child's progress in learning mathematics. It is worthwhile allocating plenty of time and activity-based practice to consolidate this concept.

Start this lesson by telling the children that we have 10 fingers to count on and 10 is 1 more than 9, 2 more than 8, 3 more than 7 and so on. Also, 10 take away 3 is 7, or 10 take away 8 is 2....

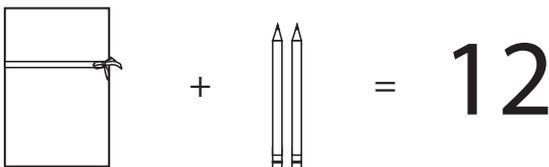
Work with pencils; put 1 pencil in an empty pencil box, then another one, and another, till there are 10 pencils in the box. The box is full; it cannot hold any more pencils. Then, explain that they are looking at 'One box of 10 pencils'.



Talk about the number 11.



11 pencils indicate one full box of 10 pencils and 1 single pencil. Explain that 11 is 1 more than 10. The pencil box is full. **NO MORE PENCILS CAN GO INTO IT**, so the extra pencil has to be placed beside the box. Then, place another pencil near the box.



'What do you have?' The answer will be 12 pencils. Explain that 12 means one group of 10 and 2 single pencils.

In a similar manner, work slowly with the numbers 13, 14

11 = 1 box of 10 ONES + 1 single

12 = 1 box of 10 ONES + 2 singles

13 = 1 box of 10 ONES + 3 singles

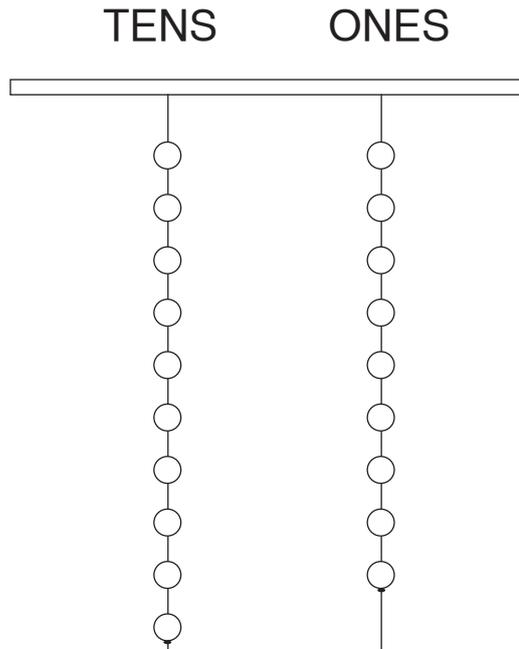
and so on.

Start with numbers from 11 to 19. You may wish to use other simple aids such as flowers in bundles of 10, packets of biscuits with 10 biscuits in each, or 10 beads in a bracelet (knot the thread, so that no more beads can go on to it). Repeat the exercise with all these numbers.

Once this concept is clear, draw a picture of a box, on the board, with '10' written on it and next to it, write 'single pencils'.

Ask the children to call out the number names and put the numbers in the right columns. Once the children are comfortable with the idea, go back to 10, and explain that 10 means 1 ten and NO ones, or ZERO ones.

You can use a rod to thread beads on, with U and T written on it, as shown here:



Give the children thermocol balls or beads. Call out a number and ask them to make bracelets containing that number of balls, with one restriction, no more than 10 balls in a bracelet. Tie a knot on the thread once the 10 beads are threaded. Help the children with tying knots.

Once the children are comfortable with the idea, move on to 20's and 30's, using 2 or 3 full boxes containing 10 pencils each, as necessary.

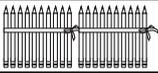
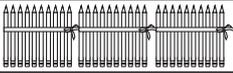
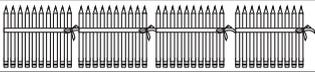
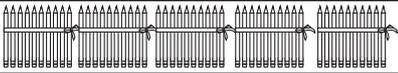
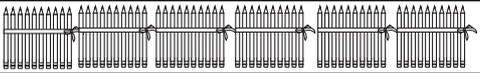
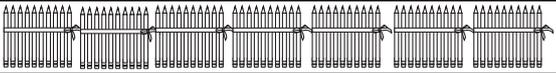
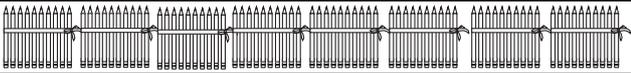
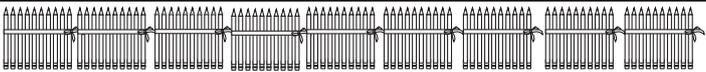
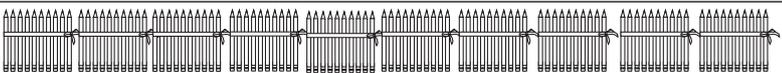
Task: Children attempt pages 9 to 13.

Lesson 5: Write the numbers shown on each abacus.

40 minutes

At this stage, the children already know the number names to twenty. They are also aware of place values and how to read them. Teaching number names can become monotonous. To avoid this, it is always better to include some hands-on activities to make the lesson interesting. The children follow your lead initially; once they know the pattern, they will be able to carry-on, on their own.

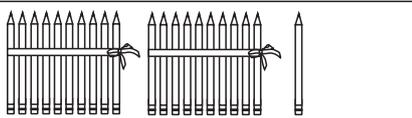
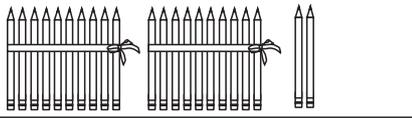
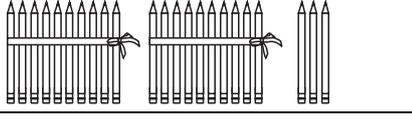
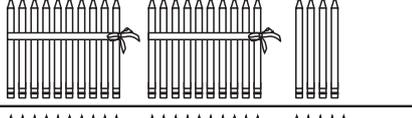
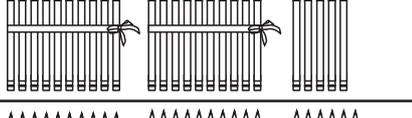
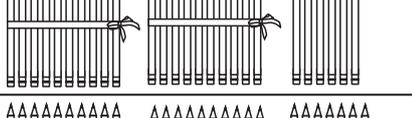
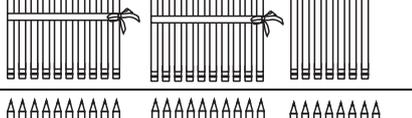
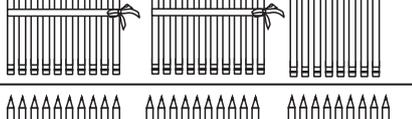
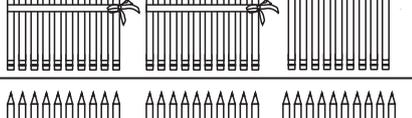
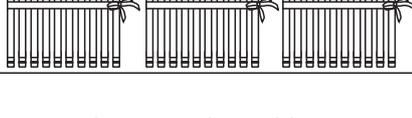
Start the lesson with a revision activity. Put the children in groups and give them some straws. Ask them to tie 10 straws together. Now call out the number names as shown:

	1 group of 10	10	ten
	2 groups of 10	20	twenty
	3 groups of 10	30	thirty
	4 groups of 10	40	forty
	5 groups of 10	50	fifty
	6 groups of 10	60	sixty
	7 groups of 10	70	seventy
	8 groups of 10	80	eighty
	9 groups of 10	90	ninety
	10 groups of 10	100	one hundred

When you get to '10 groups of 10', tie a ribbon around '10 bundles of 10 straws' and write '100 : a hundred' on a tag.

Spend plenty of time on these number names before you move on. Do each group of tens on different days.

Follow the pattern given below:

	2 groups of 10 and 1	21	twenty-one
	2 groups of 10 and 2	22	twenty-two
	2 groups of 10 and 3	23	twenty-three
	2 groups of 10 and 4	24	twenty-four
	2 groups of 10 and 5	25	twenty-five
	2 groups of 10 and 6	26	twenty-six
	2 groups of 10 and 7	27	twenty-seven
	2 groups of 10 and 8	28	twenty-eight
	2 groups of 10 and 9	29	twenty-nine
	3 groups of 10	30	thirty

Repeat the exercise with groups of 30, 40, 50 ... 90.

Task: Children attempt pages 14 to 22.

Lesson 6: Add TENS and ONES.

40 minutes

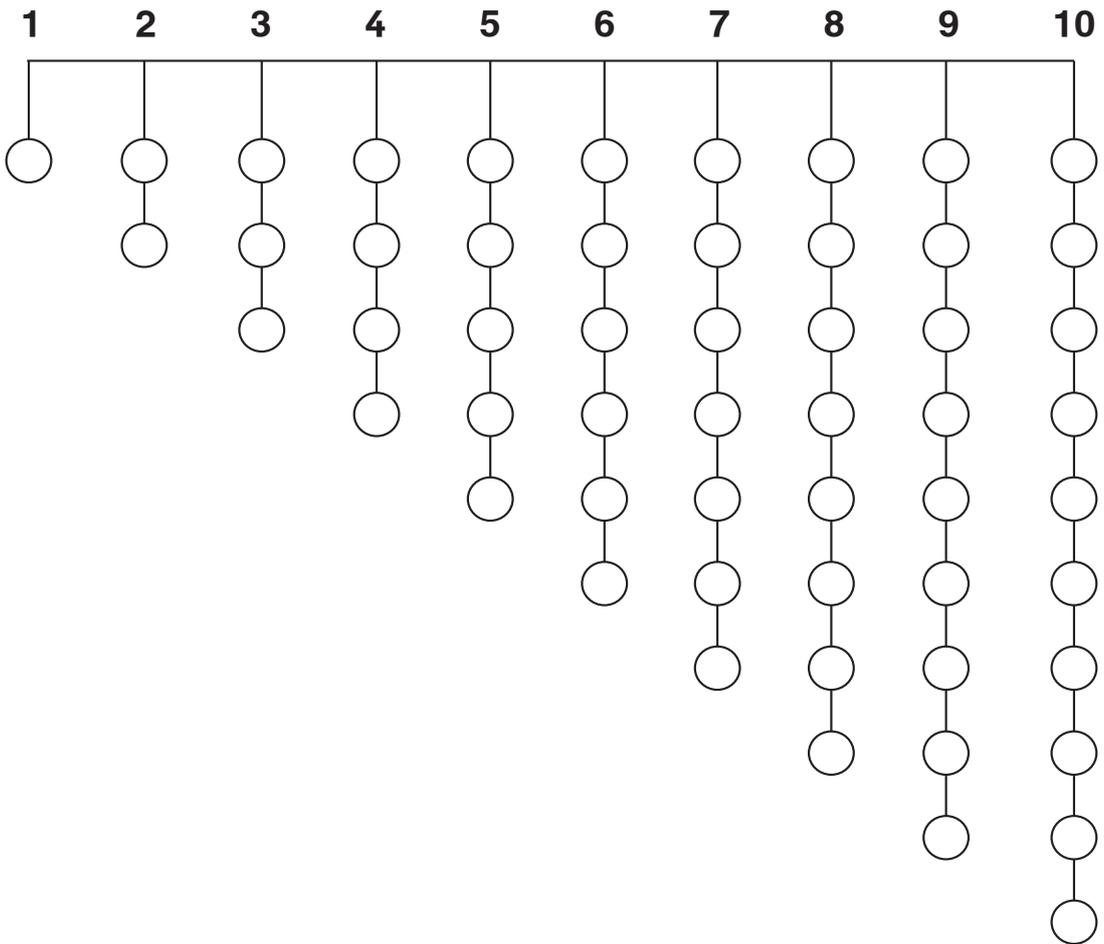
Use an abacus to show different numbers. Ask the children, 'What is the number?' When they call out the number name, ask them to spell it.

Give each child an abacus. Call out a number and ask them to show it on their abacus. Call out numbers such as '2 tens and 3 ones', and many more like this.

Task: Children attempt page 23.

Lesson 7: Use the number line..., Ascending and descending order. **40 minutes**

The children are familiar with the number line; use it to introduce the idea of sequencing. Display a large number line in the classroom. Below each number hang a string of ping pong balls to represent the number. This set-up provides a quick reference to the numbers as well the quantities they signify.



Talk about ascending and descending order. Ask the children to stand in a row in ascending order of height, from the shortest to the tallest; then, in descending order from the tallest to the shortest child.

The number line with balls hanging at each point is of great use in teaching ascending and descending order. Associate this with going up and down the stairs.

Task: Children attempt pages 24 to 31.

Lesson 8: Positions

40 minutes

This is a good point to introduce ordinal numbers. Ask the children to stand in a line, for example,

‘Shiraz first.’

‘Ali second.’

‘Mariam third.’

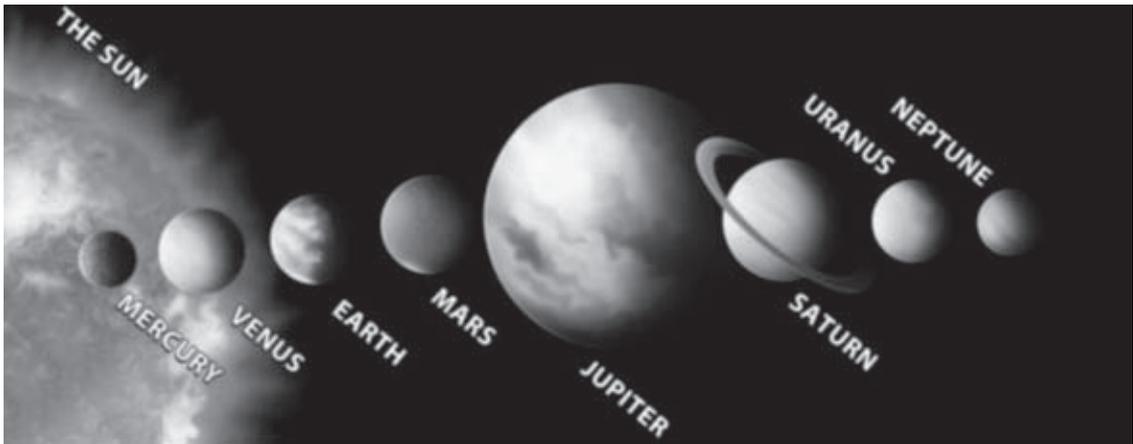
‘Sara fourth.’

Place various toys in rows on the table, counting 1, 2, 3, 4, and 5.

Ask the children questions like: ‘Which toys are in the fourth row?’ and ‘Which toys are in the fifth row?’

Ask questions about the classroom such as, ‘Who is sitting in the first row on the left?’ and other similar questions.

Show the children a picture of the solar system. Ask them questions like, ‘Which planet is second closest to the Sun?’



Looking at a shelf of books in the classroom (or in the library) pose questions like, ‘Which is the fourth book from the left on the second shelf from the top?’ ‘Which is the first book from the right on the second shelf from the bottom?’

Tell the children the story of 'Grandma lost her spectacles.' At the end of the story ask the children to recall where she looked for her glasses first, second, and last. Take the children into the playground and let them have a race. Then ask them to say who came first, who was second, and so on.

In the playground lay out 10 empty boxes in a row; spread some small balls out too. Children take turns to play this game. Instruct them to pick up one ball and put it in the first box, when you blow the whistle. At the second whistle, 2 balls in the second box, and so on.

Children match 1st with FIRST, 2nd with SECOND, and so on. For added interest, spell FIRST as STRIF, SECOND as DONSCE and THIRD as DIRTH ...

first	5 th	thneves
second	4 th	eitigh
third	1 st	thinn
fourth	9 th	dirth
fifth	10 th	thoruf
sixth	8 th	donsce
seventh	3 rd	strif
eighth	7 th	thent
ninth	6 th	thixs
tenth	2 nd	thiff

Task: Children attempt pages 32 and 33.

Lesson 9: More or Few

40 minutes

This concept has already been introduced so the children should be familiar with it. Show them objects in sets and ask them which set has more and which has fewer. Give them plenty of practice before attempting pages 34 and 35.

Task: Children attempt pages 34 and 35.

Lesson 10: Skip counting in twos

40 minutes

Start with a number line in the playground. A child stands on 0 on the number line, skips one number, and puts his or her foot on 2, then 4, 6, and so on. The phrase 'alternate numbers' can be introduced. Another child starts with number 1, and goes on to 3, 5, 7, and so on.

Then, use a number line on the floor of the classroom. Use a soft toy rabbit for the children to practise skip-counting in 2s. Place the toy on 0. Which number does it land on next? Repeat the exercise, starting at different numbers each time.

The children can play a game of Chinese whispers. They sit in a circle. Tell them the way this game is played, and ask them to remember the number which each one whispers. One child whispers a number in the ear of the child sitting next to him. The second child whispers the next 'alternate' number (skip counting by 2) in the ear of the student sitting next to him, and so on. At the end of the first round, the children call out the number each one had called. You will be able to see who was correct

A game of Buzz is fun too, where children count from 0 to 50 and say 'buzz' instead of every second number.

0 BUZZ 2 BUZZ 4 BUZZ 6 BUZZ 8 ...

OR

1 BUZZ 3 BUZZ 5 BUZZ 7 BUZZ 9...

OR

23 BUZZ 25 BUZZ 27 BUZZ 29 BUZZ ...

Number the stairs in a flight from 1 to 10. Children jump on the stairs, skipping a step, and land on the alternate number. They call out the number on the step they land on.

Task: Children attempt pages 36 to 40.

Additional resources

At the end of the guide are additional worksheets 1 and 2. Use them for reinforcement.

UNIT 2

NUMBER OPERATIONS

Teaching objectives

- to introduce the +, -, and = signs
- to explain adding of three or more numbers
- to practice subtraction of simple numbers
- to explain number families
- to use number lines for subtraction of numbers up to 20

Learning outcomes

The children should be able to:

- identify the +, -, = signs and explain what they signify
- add and subtract 1 and 2 digit numbers using a number line, and vertical, and horizontal settings
- recognize members of a number family
- use a number line to add 3 numbers

Teaching materials:

- number line
- beads, wooden blocks, coins, toys, cubes, pyramids
- abacus
- weighing scale (up to 10 kg)

Learning activity

Lesson 1: Add one more.

40 minutes

Hang up cut-outs of the symbols in the class room. Explain/ elicit what the symbols represent, how they work, and what the end results are.

PLUS used to be written as P long ago, and now we use the sign '+'; it means addition.

MINUS used to be written as M long ago, and now the sign is '-', meaning take away, or subtraction.

EQUAL TO is denoted by '='

IMPORTANT: It is important that the children understand that in our natural number series 1, 2, 3, 4, 5, 6 ...

- the number on the right of any two consecutive numbers is always 1 more than the number on its left.
- the number on the left is 1 less than the number on the right.

For example, in 8 and 9,

9 is 1 more than 8

8 is 1 less than 9

Task: Children attempt pages 42, 43, and 44.

Lesson 2: Addition

40 minutes

Work out fun problems in the classroom, for example:.

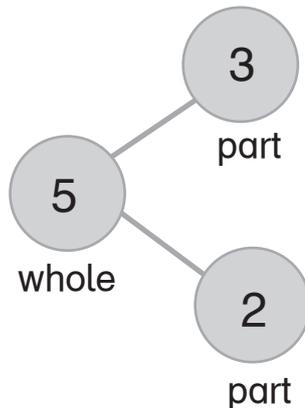
- 4 chinks in the box and we add 3 more: $4 + 3 = 7$.
- A dog has 2 bones on one day, and 1 on the second day. How many bones does he eat?
- Tara wears 2 rings on her thumb and the little finger; then 3 more rings on the three middle fingers. How many rings is she wearing?

Explain these facts:

- 1 If you add (+) two numbers, the answer is ALWAYS more than either of the TWO numbers.
2. If you subtract (-) one number from another, the answer will be smaller than the larger number.
3. Numbers are equal (=) when they represent the same quantity.

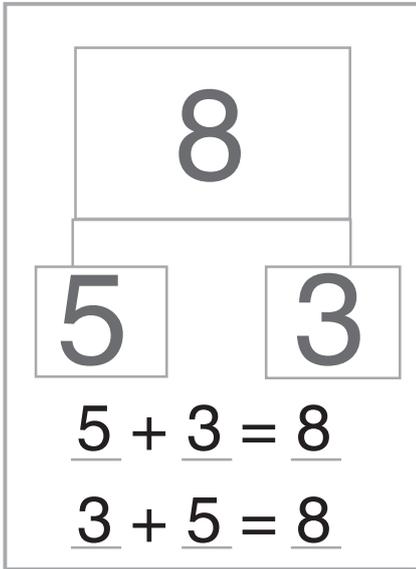
Once again, review the concepts of simple addition and subtraction on the number line and using solid objects. Use beads and an abacus.

Explain, also, that numbers such as 2, 3, and 5 belong to a number family.



This means that $2 + 3 = 3 + 2 = 5$

The class works out and notes down the number family equations (new word) like this, in small boxes in their note books.



Task: Children attempt pages 45 and 46.

Lesson 3: Adding three or more numbers

40 minutes

The children enjoy using their fingers to add or subtract small numbers. Encourage this at the beginning.

You could also play a game of adding the correct symbol. Arrange a few beads as shown below and ask the children to fit in +, −, or =.

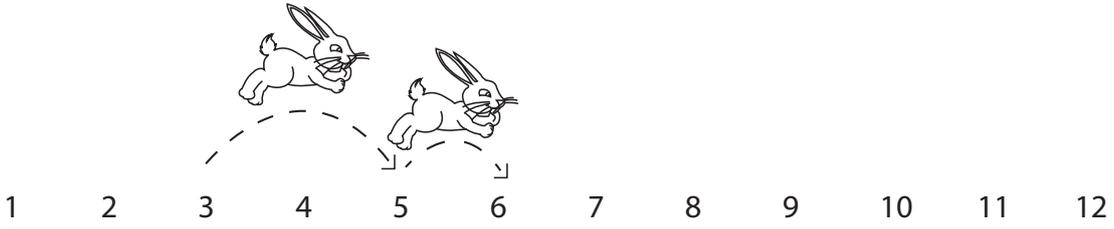
Place '+' or '−' in the box, as per the instructions on the right.

	= ? Answer is more than 3
	= ? Answer is less than 4
	= ? Answer is more than 3

Also, try this: With no instructions, the children can use a '+' sign, a '−' sign or '=' and find different answers

Introduce addition and subtraction of 3 numbers using practical problems and the number line.

This can be easily worked on a number line. A toy rabbit starts at 3, and jumps 2 steps, rests a while and moves 1 jump more. Where does he land?

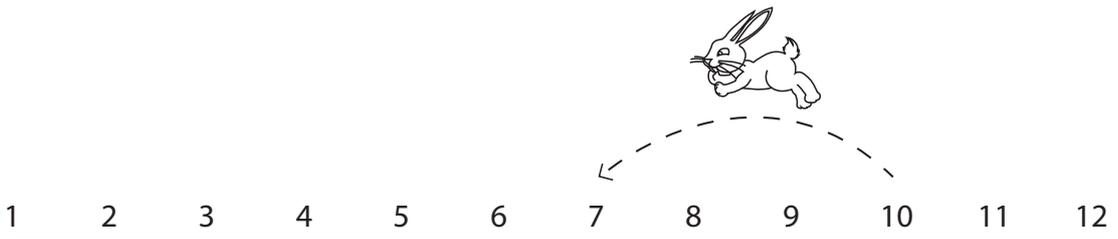


$$3 + 2 = 5; 5 + 1 = 6$$

Task: Children attempt page 47.

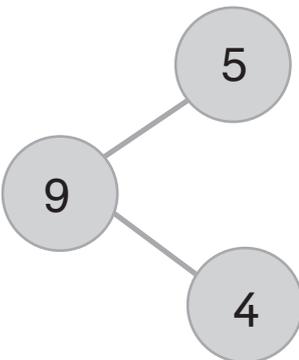
Lesson 4: Subtraction

40 minutes



The number family

Use a number line to explain subtraction as well. Place the toy rabbit (used in addition) on number 10, and move it 3 steps back. He arrives at 7. This can be shown as



$$10 - 7 = 3$$

Now give the children different questions; they move the rabbit to the left, from different points on the number line, and they find the number where the rabbit lands each time.

Work on more practical situations in the classroom. There are 10 pails in the garden, but only 7 spades. How many pails will have no spades? Work this on a number line as well.

5 friends went for a picnic, they had 7 chicken sandwiches. How many sandwiches were left after each one had eaten one?

4, 5, 9
$4 + 5 = 9$
$5 + 4 = 9$
$9 - 4 = 5$
$9 - 5 = 4$

A weighing scale is an ideal way to see actual addition and subtraction happening, automatically. Get books or stones, each weighing 1 kg. Place one stone in the pan at a time, and see how the screen shows 1 kg. Add more stones, one at a time: the addition is shown on the scales. Take away one stone at a time for subtraction.

Two stones show 2 kg; add three more stones: the scales will show 5 kg. There are ten stones in the pan; the screen will show 10 kg. Take away three stones, one at a time, and see the subtraction actually happen.

Task: Children attempt pages 48, 49, 51, 52, and 53.

Lesson 5: Numbers 11 to 20; Numbers on a Dice

40 minutes

Hang a number line on the wall or draw one on the floor. Now tell the children a story:

It was Easter. Winnie the Pooh and his friends Tigger and Eaglet were hunting for Easter eggs. Pooh found three eggs under the old tree. Tigger found two more beside the fence. Eaglet found another four eggs behind the bench. They put all the eggs in a basket. How many eggs did they collect all together?

As you narrate the story place a counter on 3. Then as Tigger finds 2 **MORE** eggs, move the counter 2 places to the right. Explain the significance of MORE. Then, move the counter 4 places to the right when Eaglet finds 4 **MORE** eggs. Then, ask the children to call out the number on which the counter comes to rest. That is the total number of eggs in the basket. Explain the significance of the word **TOTAL**. Is the TOTAL number of eggs more than those Pooh, Tigger, and Eaglet found in the garden?

Put up the words MORE and TOTAL on the soft board.

Repeat the exercise with Eaglet and Tigger, using different coloured counters for each character. Create more characters to give the children some more practice. Now ask the children who collected most eggs? Encourage the children to draw their conclusions by looking at the final positions of the different counters.

A weighing scale, once again, is very useful to show instantly that 9 is more than its components (6 and 3, 5 and 4, or 1 and 8). Similarly, demonstrate subtraction.

You could organize an egg hunt for the children in the garden once they are familiar with the idea of addition.

Organize a shopping spree in the classroom. Identify some objects to be sold and assign a price to each of them. For example: an apple could cost 3 counters and 2 more counters. Give each student a shopping list and some counters. Each student has a turn to go to the shop to buy his/her articles and pay the shopkeeper using the counters. The

student has to call out how much each article costs and how much he spends in total. He should also call out how much he has left. Repeat the game several times to reinforce the concepts of addition and subtraction.

Once the children are confident with addition problems work with further problems of subtraction by saying, for example, 'Pooh has 2 eggs. He breaks 1 egg. How many are left?'

'Ahmed has Rs 10; he buys a chocolate for Rs 6. How much money will the shopkeeper return to Ahmed?'

Ahmed now has Rs 4 left. Is the amount of money Ahmed has now MORE or LESS than he had before he went shopping?

Task: Children attempt pages 54, 55, 57, and 58.

Additional resources

At the end of the guide are additional worksheets 3, 4, and 5. Use them for reinforcement.

UNIT 3

MEASUREMENT: LENGTH AND WEIGHT

Teaching objectives

- to introduce the concepts of measuring height, length, and weight
- to use comparative and superlative forms of adjectives and revise opposites
- to talk about relative sizes

Learning outcomes

Children should be able to:

- use vocabulary correctly to describe relative sizes
- talk about opposites and weight, length, and height

Teaching materials:

- toy rabbit
- small and large objects
- thick and thin objects
- rough and smooth objects
- musical instruments
- pebbles of different sizes

Learning activity

Lesson 1: Opposites

40 minutes

To start off, use a vertical number line on the wall, and show how 'more than' and 'less than' works on a vertical number line (going up and down). The simplest method is to get a long ruler and mark 0, 1, 2, 3 ... starting from the floor. Rabbit can hop 1 up or hop 1 down to find bigger or smaller numbers.

The control panel in a lift is another example. The children can see 4 turning into 5 and then 6, and so on. Or vice versa, 6, 5, 4, 3, 2, 1, 0.

This unit introduces comparison of size, height, and weight using real life examples. Vocabulary for comparison is taken to the superlative degree. The concept of matching according to size is reinforced using everyday experiences.

To introduce opposites, show a small piece of chalk and a large duster. The table is high and the bench is low. The board is big and the exercise book is small. Woollen fabric is thick and rough, and silk is thin and smooth.

Task: Read pages 60 and 61.

Lesson 2: Comparisons

40 minutes

Ask the children what kind of sound the chirping of a bird is, or the sound of a single button when shaken in a closed glass bottle. These are soft sounds. Compare these to the loud sound of a road roller or the whirr of an aero plane engine or a machine.

Compare the sound of a chirping bird to that of flapping of a bird's wings or that of a clock ticking.

A full glass of water and half full glass of water produce different sounds when struck softly. Ask the children to listen carefully and compare the pitch of the sounds. Let them play the jaltarang and compare the pitch of the sound with the water level in each glass.

They can also compare the sounds of different musical instruments.

Task: Children attempt pages 63 and 64.

Lesson 3: Comparisons (contd.)

40 minutes

Compare the sizes of trees and bushes in the playground. Collect a basket full of pebbles. Ask the children to sort these according to size, and arrange them in order of size from small to big.

Talk about familiar objects in the classroom. Use comparative terms to describe them: a brick is heavier than a pencil box. A pin is lighter than a pencil box. Let the children feel the weight of each of the articles as you compare them.

Again, activity with a weighing scale is useful to explain the terms 'heavy and heavier'. A stone is heavy; put it on the scale: it weighs 1 kg. A bigger stone is heavier; put it on the scale: it weighs 2 kg. (Don't use fractions of weights yet: choose books and stones with weights of 1 kg or 2 kg)

Compare lengths: a short eraser, a long pencil; a short eraser, a longer cane, and the bamboo pole is the longest. Ask the children to stand in a line according to their heights. Now use the comparative words to compare the heights of different children.

Compare sizes: a cat is small, a mouse is smaller than a cat, and a snail is the smallest of the three. Again, an ant is smaller than a snail. An elephant is big, a dog is smaller, and a mouse is smaller than a dog. An elephant is the biggest of the three, and the mouse is the smallest of the three. An elephant is big, but a dinosaur is bigger than an elephant.

Task: Children attempt pages 65 and 66.

Additional resources

At the end of the guide are additional worksheets 6 and 7. Use them for reinforcement.

UNIT 4

MONEY

Teaching objectives

- to explain the concept of barter
- to introduce currency
- to explain that every item has a value
- to add notes and coins

Learning outcomes

Children should be able to:

- identify all notes and coins of Pakistani currency
- add the values of coins and notes accurately
- demonstrate an understanding of 'enough' by comparing amounts of money with a given value

Teaching materials:

- notes and coins of Pakistani currency
- notes and coins of other currencies
- different objects with price tags on them

Learning Activity

Lesson 1: Coins have been used...

40 minutes

It is important that the children are confident in using numbers, counting up to 100, and addition and subtraction of smaller numbers.

Ask if they have used notes and coins to buy ice cream and toys when shopping with adults. Explain that in exchange for coins and notes, they can buy various items of their choice. They should handle paper notes and plastic coins and see what is written on both sides. Discuss the writing and the pictures which have been depicted on the notes and coins of Pakistani currency.

For further practice, set up a small shop in the classroom.

Barter Shop: Talk to the children about the barter system. Since there was no form of money in the olden days, people exchanged goods. For example, a man with cows could exchange milk for eggs; or someone who needed a lamb, might give eggs and milk to his friend for a few days.

At this shop, they can exchange goods. For example, a student gives 4 pencils in return for a pen; he or she exchanges a crayon box for 3 erasers; 1 puzzle box for 1 doll; 2 bracelets for 5 clips; 2 toy cars for a cricket, a Ludo and a pen for a scrabble board; and similar items which would be used by a 6/7 year olds.

Talk, in simple terms, about the problems that might have arisen with the barter system, and the need for a standardized monetary system.

Task: Children attempt pages 69, 70, and 71.

Lesson 2: Coins have been used... (contd.)

40 minutes

A General Store: Lay out on a table various items of everyday use, each with a price tag. Show the children real coins and currency notes that are in daily use. Explain what each is called, and its value. They could draw or trace each coin to get the feel of the edges. Give them photocopied worksheets of the outlines of the notes and coins to colour and add detail.

Give each child some coins and notes. Ask them to use their money to buy an article from the table.

Talk about the value of each denomination with respect to what it can buy. Will Rs 5 be enough to buy two balloons? Will Rs 10 be enough to buy a box of colour pencils?

Also ask, 'Is this enough money to buy this article?'

Some children may have trouble handling notes and coins. Hold his or her hand initially if counting notes is a problem.

Task: Children attempt pages 72 and 73.

Lesson 3: Coins have been used... (contd.)

40 minutes

Revise the values of notes and coins by asking children to identify different notes and coins. Ask them to suggest what each could buy.

In a craft class, the children might enjoy designing their own currency notes, with a picture of their favourite sporting personality or a cartoon figure. Display their work in the classroom.

CURRENCY	WHAT YOU CAN BUY WITH IT
1 rupee coin	1 sticker
5 rupee coin	a pencil
5 rupee coin	An eraser

10 rupee note	a ruler
20 rupee note	a box of crayons
50 rupee note	a toy truck
100 rupee note	a story book
500 rupee note	a dress or a pair of shoes

Task: Children attempt pages 74, 75, and 76.

Lesson 4: Shopping

40 minutes

Refer to lesson 2 for the shopping activity which could be repeated here.

Make a special board game for the children. Each student is given his or her share of money in different denominations of domestic currency. The children take turns to play. Each child rolls the dice and moves his counter according to the number he rolled. He has to perform the action suggested in the box he lands on. For example, if he lands on a square that says, 'Buy a doll for Rs 45.', he then has to use his money to pay Rs 45 to the general store to buy a doll.

Task: Children attempt pages 77 and 78.

Additional resources

At the end of the guide is an additional worksheet 8. Use it for reinforcement.

UNIT 5

TIME AND DATE

Teaching objectives

- to introduce the concept of measuring time
- to explain analogue time
- to explain digital time
- to teach division of time into days, weeks, months, and years
- to teach the names of the days and month

Learning outcomes

Children should be able to:

- read time on the clock
- read, write, and sequence the days of the week
- read, write, and sequence the months of the year

Teaching materials:

- analogue clock with movable hands
- different types of clocks
- calendar
- pictures of different seasons
- cardboard circles, lollipop sticks, split pins

Learning activity

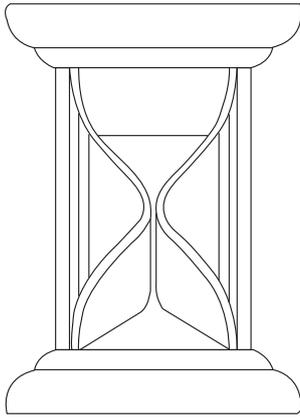
Lesson 1: Analogue Time

40 minutes

Although analogue time as a concept might be difficult for the children to understand, they will have played with clock faces in the introductory level. They still need to differentiate it from the digital time. Illustrations of both analogue and digital clocks are given in the book.

At this stage the idea is not to teach the children to read time in hours, minutes, and seconds: it is more useful to introduce the units of time: a year, an hour, a week, a day, a minute, and a second.

Before clocks were invented, time was told by looking at a sundial, an hourglass, a candle clock, a water clock, or an incense clock. The word clock comes from 'clocca', meaning a bell. Other time telling devices are called 'timepieces'.



hourglass

A story of how man told the time of day when the Sun was his only guide can be told. Man observed the shadows at sunrise, sunset, and throughout the day to work out the time.

Task: Children attempt pages 80 and 81.

Lesson 2: Make a clock face.

40 minutes

Talk about how people told the time before they had clocks. Discuss particular times of a year such as New Year's Day, and refer to months (birthdays), days (regular daily activities such as clubs), hours (school timetable): minutes and seconds can be observed on a clock with a second hand, or counted.

Telling the time will come gradually and naturally since time is such an essential part of our lives.

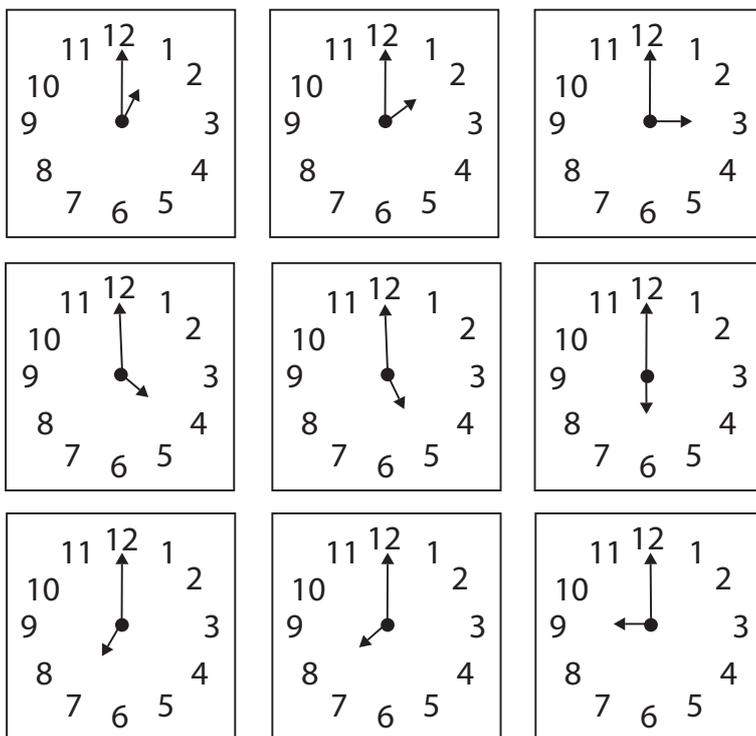
Why do we need to tell the time? Observation of daily activities is a valuable learning tool. Children often refer to times

- to wake up
- to leave for school
- to eat lunch
- to play
- to have dinner
- to go to bed.

In Maths Wise 1, the lesson starts with hours, but it is a good idea to give the children a practical concept of 1 second, 1 minute, and an hour. Someone says, 'I will be back in a minute.' Does he really come back in a minute? Let them observe this on a clock with hour and minute hands. Each tick or movement of the second hand indicates 1 second. This concept can also be demonstrated on electronic clocks which show hours, minutes, and seconds to give the children a concept of 1 second and 1 minute. Ask children to clap their hands to 1 second, 5 seconds; and keep quiet for 1 minute.

Give each child a cardboard circle, 1 short and 1 longer lollipop stick, and a split pin. Show them how to make their own clock and how to mark the numbers on the face of the clock. Explain that the small hand of the clock shows the number of hours, and the longer one indicates the minutes.

Task: Children attempt pages 82, 83, and 84.



Lesson 3: Digital Time

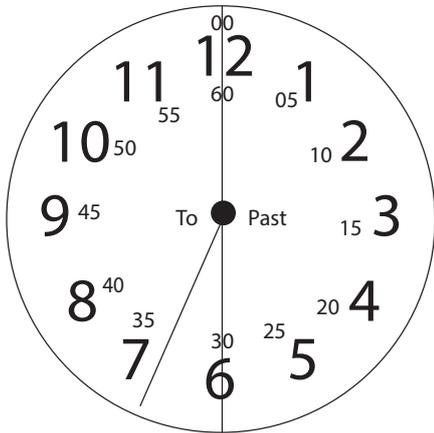
40 minutes

Talk about periods of time: ask if doing homework takes 20 minutes or one hour? How long does the journey to and from school take? How long is father or mother out of the house when they go to work? How many minutes does it take to fry an egg or make a toast? Only a very basic introduction is necessary at this level.

Start with a simple exercise. Ask the children to count slowly from 1 to 10. Now ask them to count and clap their hands once between each number. Ask which exercise took more time. Then, ask them to count from 1 to 10 as 1 Mississippi, 2 Mississippi. Explain that it took about 10 seconds to do that.

How long will counting to 60 in this manner take? Explain that it will take 'one minute'. Now ask them what other activity they can do in a minute. List their suggestions: wash their hands, dial a number on the mobile phone, write numbers 1 to 10 or turn 10 pages of a book, walk up to the board and back to their seat. Let them judge for themselves. Divide the children into 2 groups. As one group counts to 60, the other group tries out the activities they suggested.

Show the children different instruments (or pictures of them) that measure time such as a sun dial, sand clock, wall clock, wrist watch and digital display clocks. Show them how



each instrument measures the same span of time in different ways. Show them the times when some daily activities take.

Introduce a rhyme to help them remember:

60 seconds make a minute,

60 minutes make an hour;

24 hours make a day,

Enjoy every second, be happy all day.... Hooray!

7 days make a week,

30 days a month,

12 months in a whole year,

Spend them well, my dear.

Task: Children attempt page 85.

Lesson 4: Days of the week

40 minutes

Explain the fact that a birthday, Christmas, New Year, and all National Days happen only once a year.

The names of the days of the week usually come naturally to children. Introduce them to the days of the week with simple sentences:

Mother Teaches Waheeda The Fancy Sewing Stitch OR

Mom Trains Wendy To Fry Sweet Slices

Ask children to make their own sentences.

Talk about their activities in school or after school on different days of the week. Help them draw up a timetable. You can introduce a fictitious character, Chirpy Charlie, and ask them to create a routine for him for all seven days of the week.

Task: Children attempt pages 86, 87, 88, and 89.

Lesson 5: The months of the year

40 minutes

Introduce the months of the year by asking the children to look at a paper calendar or a calendar on a computer screen. An interesting exercise would be to make a chart of their birth months. Also encourage them talk about the season at the time of their birthdays.

Task: Children attempt pages 90 and 91.

Lesson 6: The names of the months

40 minutes

Ask the children to do 'a months of the year' puzzle. The names of the months are written in order, 1 to 12. Fill in the full name of the month. Join the number which stands for the month to the name of the month.

J _ _ _ _ R _	8
F _ B _ _ _ _ _	10
M _ _ C _	12
A _ _ I _	1
M _ _	2
J _ N _	9
J U _ _	11
A _ G _ _ _	6
S _ _ _ _ M _ _ _	7
O _ _ _ B _ _	3
N _ V _ _ _ _	4
D _ _ _ M _ _ _	5

Every day, write the date on the board in big, bold numerals; by copying this, the children will learn to write the dates accurately in their books.

Task: Children attempt pages 92, 93, and 94.

Additional resources

At the end of the guide is an additional worksheet 9. Use it for reinforcement.

UNIT 6

GEOMETRY: SHAPES, PATTERNS, POSITION

Teaching objectives

- to explain basic 2D and 3D shapes
- to explain simple patterns and sequences
- to familiarize children with relative positions in everyday life, such as inside or outside, left or right, before or after, and up or down

Learning outcomes

Children should be able to:

- identify and name familiar 2D and 3D shapes
- complete sequences of shapes
- draw circles, squares, and rectangles of different sizes
- recognize the relative positions of 2 objects

Teaching materials:

- nets of shapes
- pair of scissors
- glue
- objects of different shapes
- an assortment of segments of circles in assorted shapes and sizes
- paint
- beads, strings
- wooden stick
- different lengths of rope

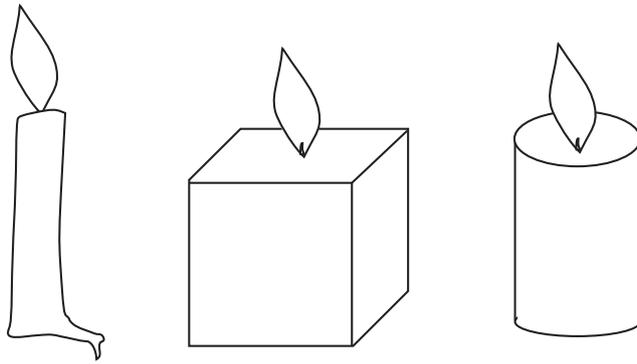
Learning Activity

Lesson 1: Shapes

40 minutes

This can be a very exciting lesson since children encounter so many objects of different shapes, in everyday life. Where did these shapes come from? Do they exist in nature? Spheres, circles, cones (a cone of light or some flower buds), and ovals appear in nature.

Candles and chocolates come in all shapes and sizes... spherical, cylindrical, conical, pyramid shaped, and others.



The children play with solid 3D shapes in the class. Talk about 2D and 3D shapes and how they are different. A 2D shape is a flat surface; you can feel it with your palm but you cannot put your hands round it as with a cube of sugar or a cell phone. It is important to explain that the surface of the paper is a 2D shape, not the paper itself.

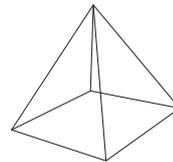
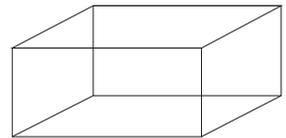
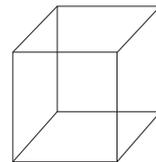
The children learn to count the faces, edges, and corners of a cube or a cuboid, as they play with these solid objects.

Now ask them to draw the shapes in their exercise books, in different sizes with actual objects or a ruler and a pencil. Once they are comfortable with drawing a square and a rectangle, encourage them to make different patterns with them.

Collect various wooden blocks in different shapes. Keep them on your table.

Put another set into a bag. Each student comes up to the desk, and is asked put his or her hand in the bag and take out a particular shape. For example, if Hasina takes out a prism, she must name it and match it to the one on the desk.

A similar exercise with 2D shapes is also useful.



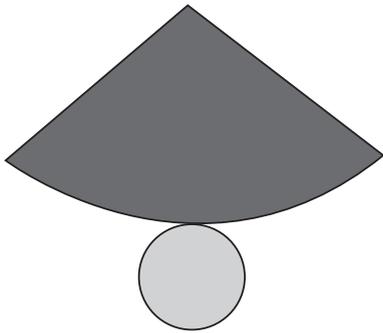
Task: Children attempt pages 96 and 97.

Lesson 2: Shapes: a cone

40 minutes

Put together ice cream cones, party hats, conical straw hats, tops of well sharpened pencils, lampshades, candles, and paper cones. Pictures of inverted cones such as mountain tops, pine trees, and traffic cones are also useful.

The children paint the surface of a small paper cone, and roll it on a piece of paper. They observe the shape of the painted area. It should be a part of a circle.



Then they dip base of the cone in paint ... an impression is formed on paper: it is a circle. The pointed end of the cone is dipped in paint, and an impression is formed on the same paper. The children see a point.

Working in reverse, prepare an assortment of segments of circles in assorted shapes and sizes. The children fold them into cones and stick the edges with strong glue. Then they cut circles to fit the open end of the cone. They fill the cones with some pebbles, fit the cap into the top; and take the cone home to show to their siblings.

Task: Children attempt page 98.

Lesson 3: Shapes: a pyramid

40 minutes

Start the lesson by showing the children various types of boxes in the shape of a cube, a cuboid, pyramid, and a prism.

Some chocolates are prism shaped.

Give them square and rectangular pieces of paper and ask them to associate them with different objects and shapes that they see in 3D objects around them such as a duster, a desk (without its legs), a chalk box, a cylindrical bottle, a conical glass, a can of juice, a tetra pak of buttermilk, a book.

Give them paper squares, rectangles, and triangles to fold in different ways. Ask questions such as: How can you make a square from a rectangle? Can you make 2 squares from a rectangle? Can you make 2 triangles out of a square or a rectangle?

Tessellation sheets with triangles, squares, and cuboids can be worked on.

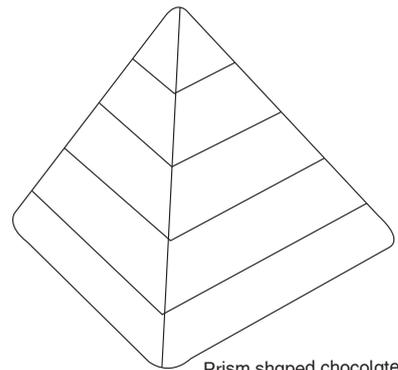
Task: Children attempt page 99.

Lesson 4: Shapes: a cylinder

40 minutes

Make a collection of cylindrical shapes, (TUBE may be an easier word to remember.) such as candles, cylindrical glasses, vases, bottles, juice cans, lampshades, pencils, crayons, a length of garden hose, and drinking straws.

Paint the curved surface of any of these objects. Carefully roll it on a sheet of paper. What shape do you get? Yes, you get a rectangle.



Prism shaped chocolate

Dip the two ends in paint and make impressions on the paper. What shapes do you get? You get two circles of the same size. Repeat the exercise with a different cylinder.

Discuss how a cylinder could be covered with coloured paper. After some discussion, the conclusion will be: one rectangle and two circles.



Lesson 5: Shapes: circles

40 minutes

Ovoid and sphere: The children should be familiar with spherical and ovoid objects such as balls, eggs of different sizes, assorted balloons and an assorted collection of beads. They should feel the curved surfaces of these.

Each student makes a sphere and an ovoid (roughly resembling an egg) from play dough. Ask them to flatten these shapes out to see what 2D shapes they get. A sphere will flatten into a circle, and an ovoid will flatten in the shape of an elongated circle.

Give the children beads of the above shapes and some string. Show them a pattern of shapes on the board ... 3 balls and 2 ovoids, or 4 ovoids and 1 ball ... and ask them to string the beads in that order on their individual strings.

This activity may also be turned into a fun game. Divide the children into 2 groups and they create different patterns for beaded strings.

The children are familiar with circles, pupils of our eyes and the eyes of all animals, rings on the finger, bangles, rims of cups, glasses, bottles and caps of bottles, tyres, a steering wheel in a car, a bus or a lorry, and the shape that the fan appears to make when it is rotating fast.

Fix a wooden stick in the centre of the garden, or in a large bucket of sand. Tie one end of a rope to the stick and tie the other end loosely around the waist of a volunteer. He or she walks away from the stick until the string is pulled tight, without pulling the stick out of the ground. The student stands at a point, which may be marked with a flowerpot, and starts walking around the stick, till he or she comes back to the original point. As the student walks, mark the path with a chalk. What shape is the path? It is a circle. Repeat the exercise with another volunteer and a different length of rope.

Stick a drawing pin in a soft board on the wall and tie a short length of string around it. Tie the other end around a pencil, and move the pencil around the pin. What shape do you get? It is useful to discuss the shape of a bangle or a tyre ... it has one 'round' edge, therefore, it can roll on the ground.

Discuss points such as:

- Is the Sun a circle? Is the Moon a circle? They are 'balls', but from a long distance, they appear to be circles.
- Place various spheres under a ceiling light: the shadows appear to be circular.
- Why are tyres circular? (Tell them an interesting story about how early man saw the trunk of a tree roll downhill, before he invented the wheel.)
- The cap of a bottle is always circular; can it be a square? Can a wheel be a square?
- Can you make a circle from matchsticks?
- How many sides does a circle have?
- Find circles and triangles in the letters of the English alphabet and the numerals.

Encourage them to feel the flat surfaces of cubes and cuboids, which are different from the curved SINGLE surface of a ball.

Task: Children attempt page 101.

Lesson 6: Shapes

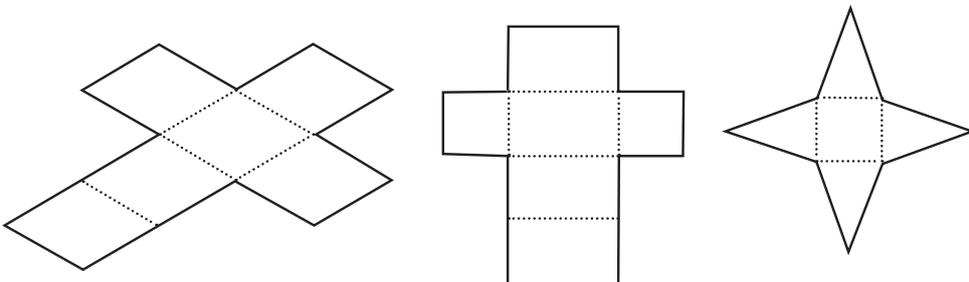
40 minutes

Ask the children to separate the objects in a basket of variously shaped 3D solid blocks into different groups of spheres (balls), cubes, cuboids, prisms, and pyramids.

It will be useful to show on a screen pictures of objects of the various shapes, such as the Pyramids in Egypt and the Louvre pyramid in Paris, or make colourful charts.

Make a collection of hollow 3D shapes, such as boxes of all kinds. Open up the sides of the boxes and lay them flat on a table to show what 2D shapes have gone into making the 3D shapes. Ask the children questions.

How many flat shapes do the following have?



Lesson 7: Patterns

40 minutes

Ask the children how many patterns can they make with 2 squares? 2 triangles? Let them colour the patterns and display them in the classroom. Give them different numbers of squares and triangles to make patterns.

Task: Children attempt pages 102, 103, and 104.

Lesson 8: Positions

40 minutes

Organize a treasure hunt with the children in the playground. Lay out some 3D shapes at different places. Blindfold a volunteer and ask the other children to call out instructions to the blindfolded child to help him find the shapes.

Place the shapes so that the children have to use the prepositions inside and outside (a bin), on or under (a bench), or to the left or right of (a pillar).

This exercise covers two concepts: comparative locations, and names of solid objects.

An assorted basket of wooden 2D shapes which the class works with, counting the number of sides and vertices.

Put a few questions to the class about digital numbers and ask them to

- 1) Write a number with
 - a) a triangle (4)
 - b) an oval (0)
 - c) one circle (6, 9)
 - d) two circles (8)
- 2) Write a capital letter of the alphabet with
 - a) a triangle (A)
 - b) an oval or a part of an oval (C, D, G, O, Q)
 - c) parallel lines (E, H, M, N, U, Z) (for later)

Task: Children attempt pages 105 and 106.

Additional resources

At the end of the guide is an additional worksheet 10. Use it for reinforcement.

UNIT 7

REVIEW AND ASSESS

Teaching Objectives

- to revise the concepts learnt throughout the year

Learning outcomes

Children should be able to:

- use number lines
- understand place value
- add tens and ones
- write numbers in ascending and descending order
- use ordinal numbers correctly
- identify number operations and their signs
- compare lengths and weights
- identify local currency and be familiar with its value
- demonstrate an understanding of time using clocks and calendars
- identify basic shapes and their properties

Teaching materials:

- additional worksheets

Learning Activity

Lesson:

The review and assessment can take place over a couple of days. If required, several lessons can be spent on revision. Worksheets and interactive games can be used for assessment.

Do the worksheets to review the concepts taught throughout the year.

Task: Ask the children to attempt pages 108 and 113.

Additional resources

At the end of the guide are additional worksheets 11 to 15. Use them for reinforcement.

Worksheet 1

Count and write the missing numbers.

1

3

6

8

9

11

14

16

17

19

22

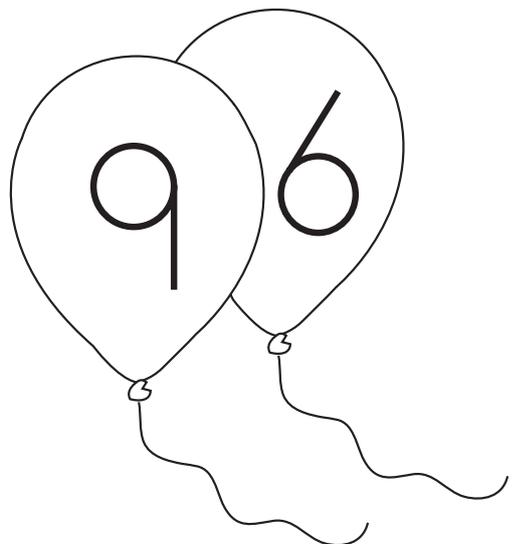
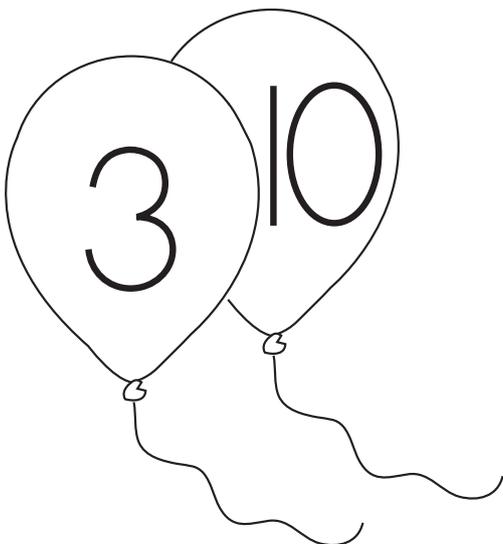
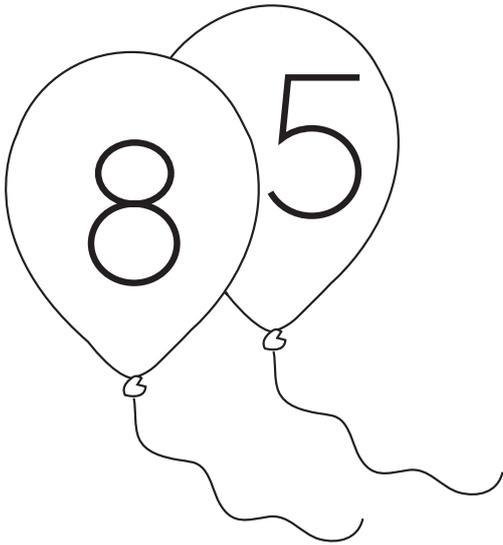
24

25

27

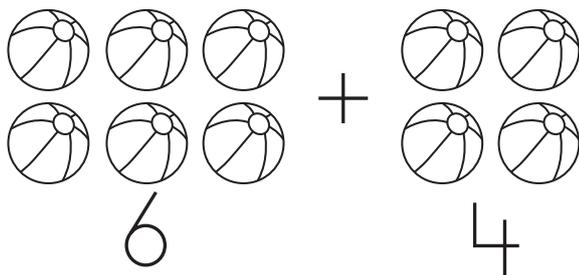
Worksheet 2

Colour the balloon with the larger number.

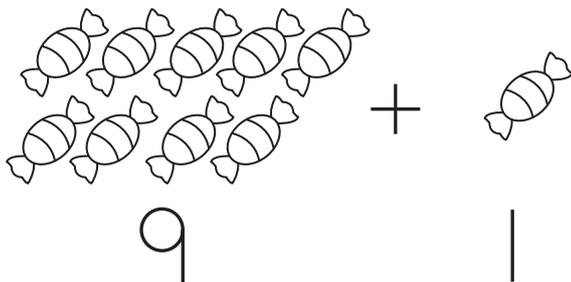


Worksheet 3

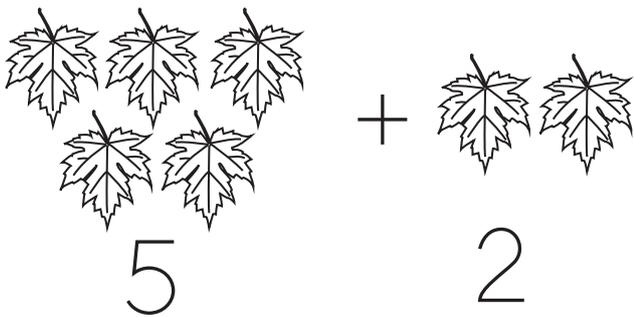
Addition



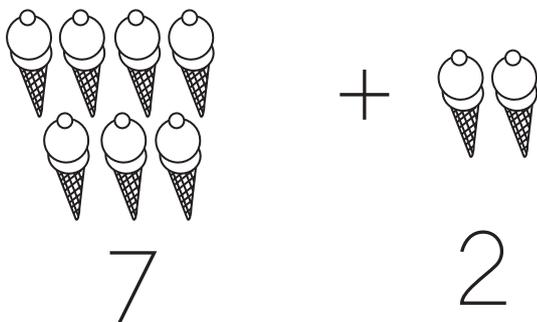
$$\begin{array}{r} 6 \\ + 4 \\ \hline \\ \hline \end{array}$$



$$\begin{array}{r} 9 \\ + 1 \\ \hline \\ \hline \end{array}$$



$$\begin{array}{r} 5 \\ + 2 \\ \hline \\ \hline \end{array}$$

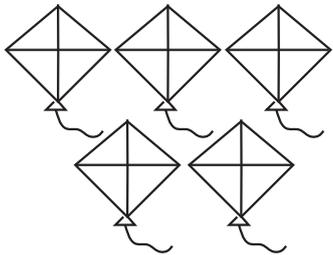
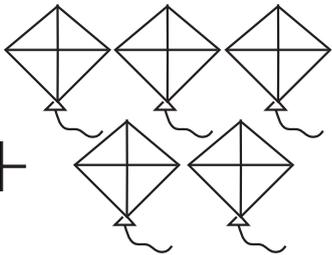


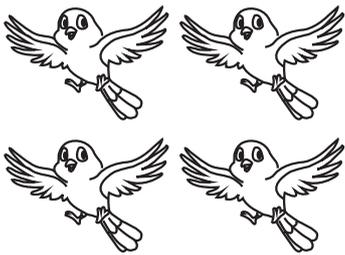
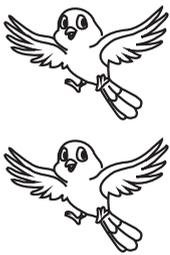
$$\begin{array}{r} 7 \\ + 2 \\ \hline \\ \hline \end{array}$$

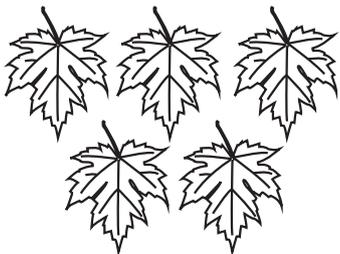
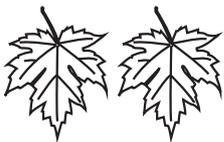
Worksheet 4

Addition

Circle the correct answer.

 $+$  $=$ 10 12 14

 $+$  $=$ 5 6 7

 $+$  $=$ 5 6 7

 $+$  $=$ 10 11 12

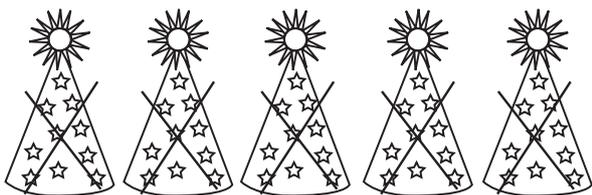
Worksheet 5

Subtraction



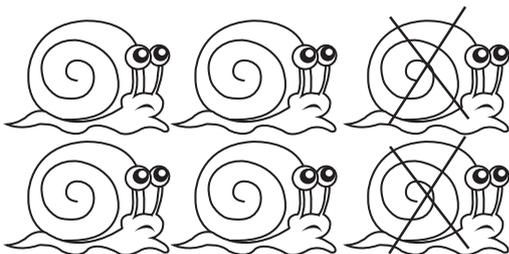
$$7 - 2$$

$$\begin{array}{r} 7 \\ - 2 \\ \hline \end{array}$$



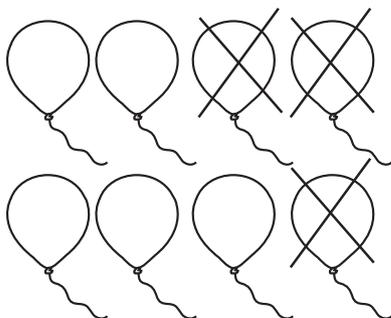
$$5 - 5$$

$$\begin{array}{r} 5 \\ - 5 \\ \hline \end{array}$$



$$6 - 2$$

$$\begin{array}{r} 6 \\ - 2 \\ \hline \end{array}$$

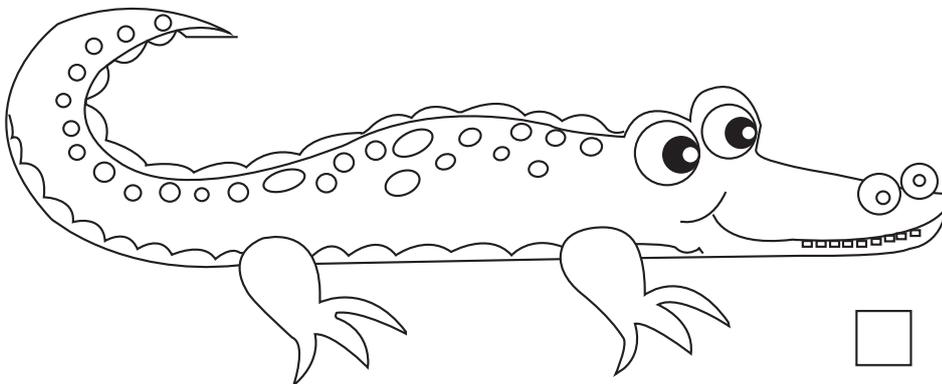
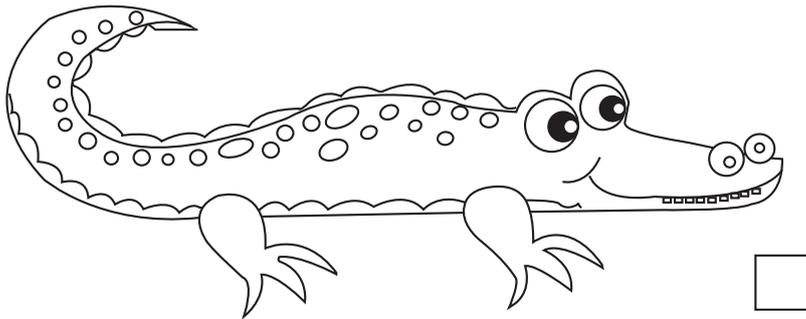
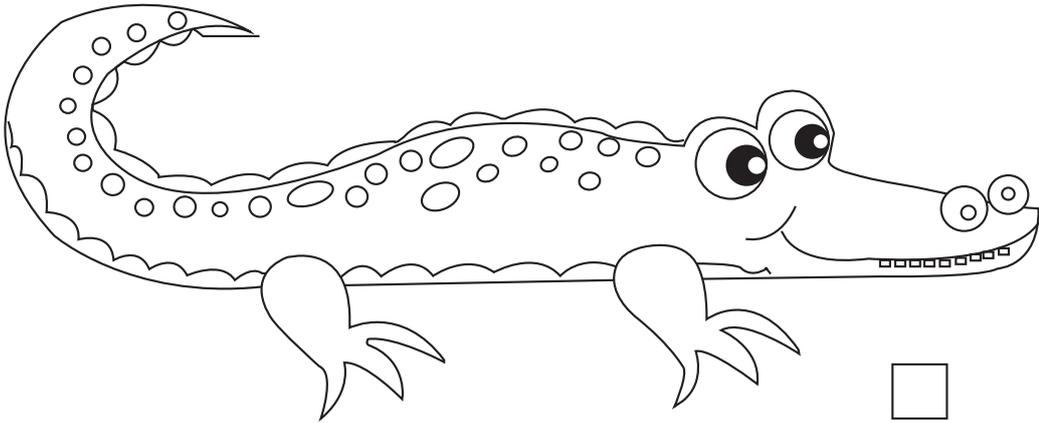


$$8 - 3$$

$$\begin{array}{r} 8 \\ - 3 \\ \hline \end{array}$$

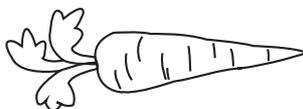
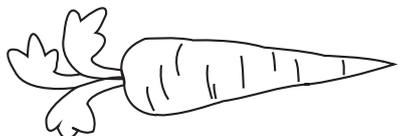
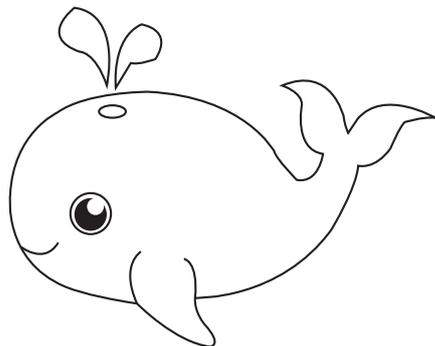
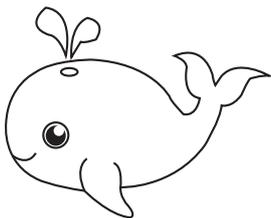
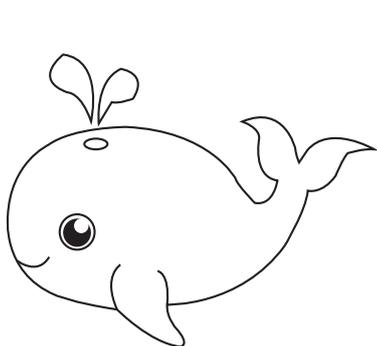
Worksheet 6

Tick ✓ the longest.



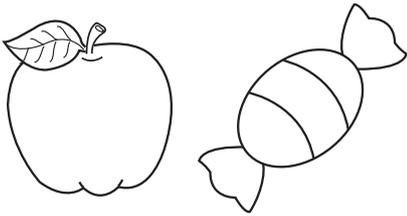
Worksheet 7

Number the pictures from the smallest to the largest.

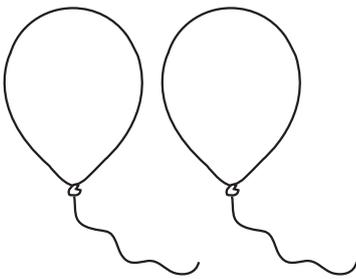


Worksheet 8

Match the prices to the correct amount.



40 20 10



30 20 10



50 25 35

Worksheet 9

What time is it?

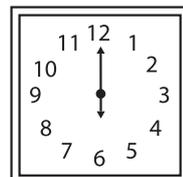
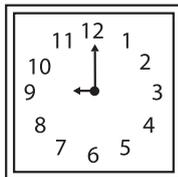
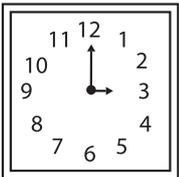
Which of these clocks show the time as 11 o'clock?



Which of these clocks show the time as 8 o'clock?



Which of these clocks show the time as 6 o'clock?

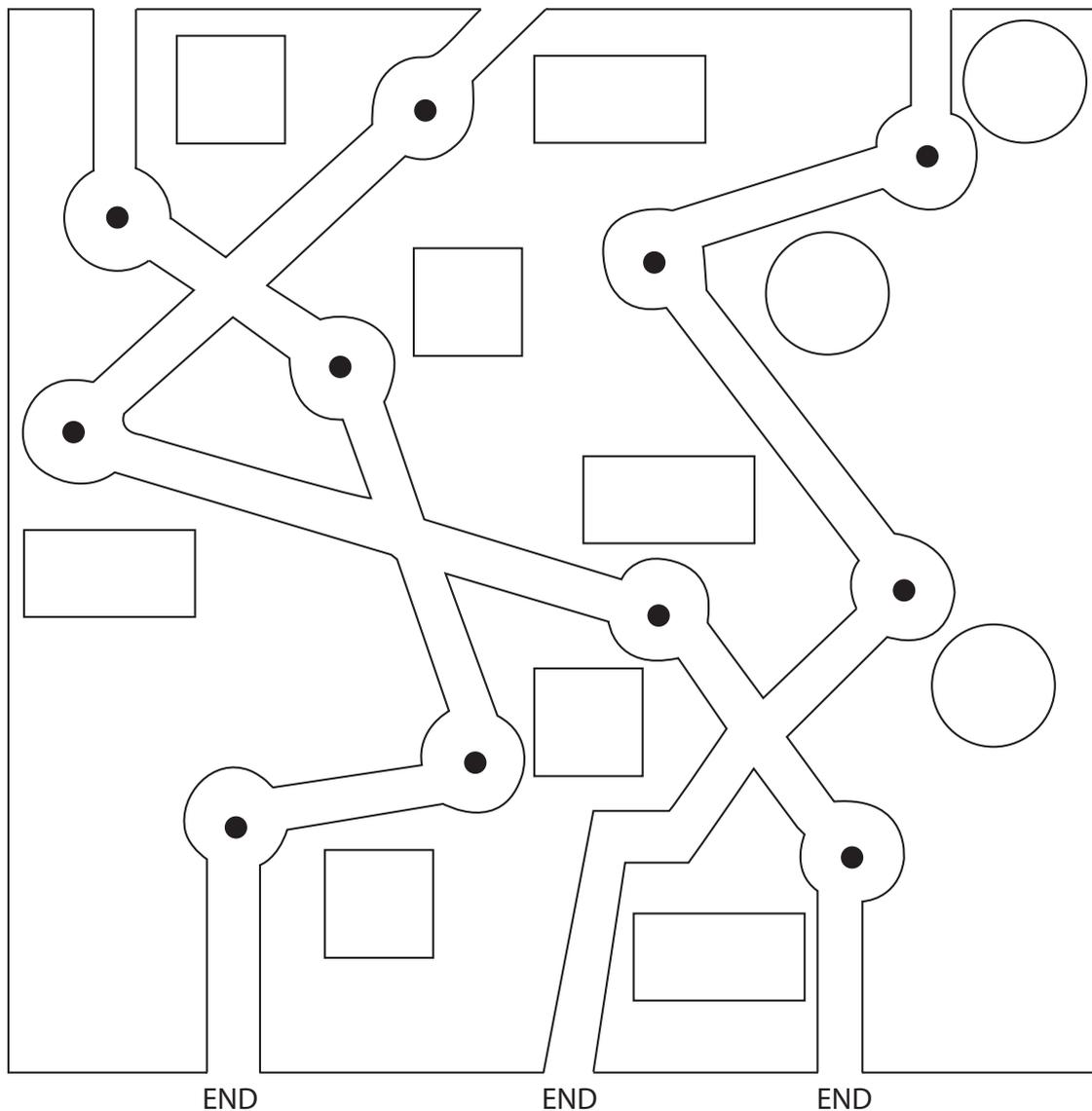


Which of these clocks show the time as 10 o'clock?



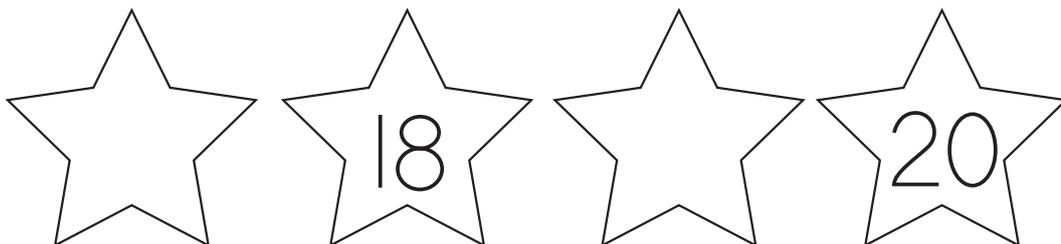
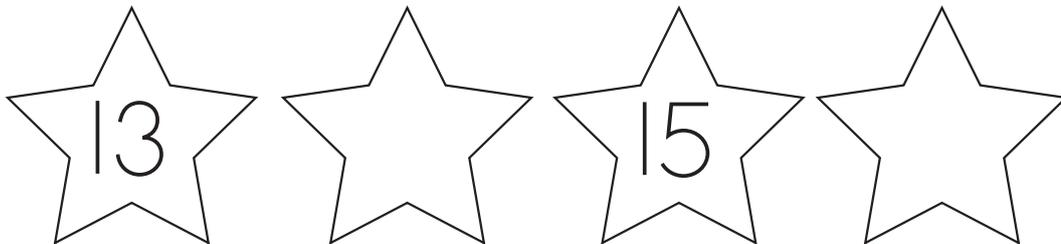
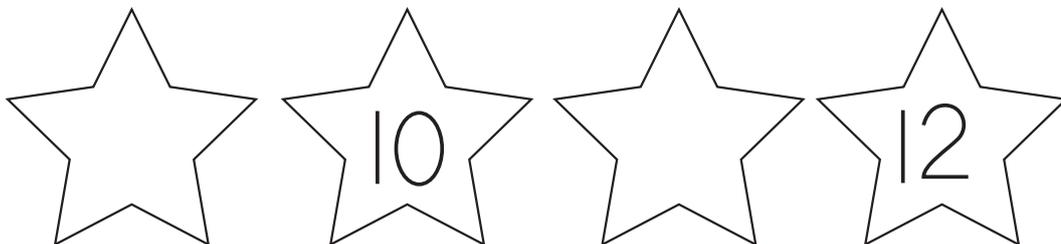
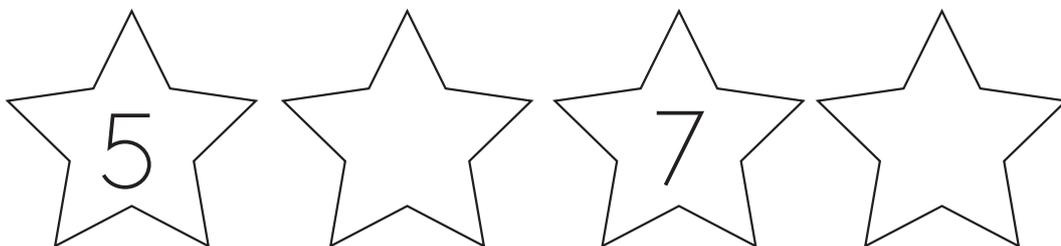
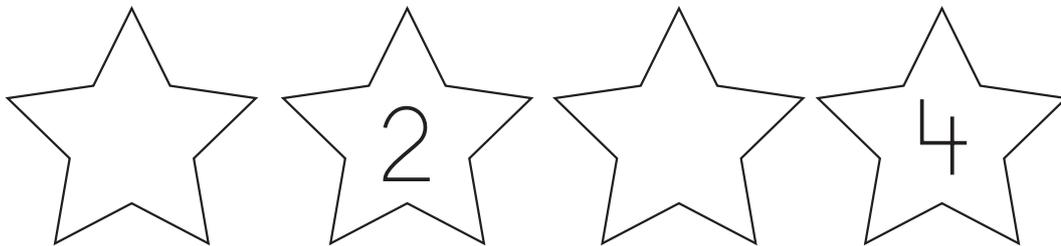
Worksheet 10

Trace the paths that connect similar shapes.



Worksheet 11

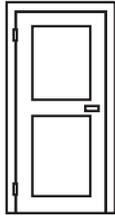
Write the missing numbers.



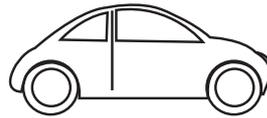
Worksheet 12

Estimating Length

Estimate the length of each object. Tick (✓) the option that gives the best estimate.



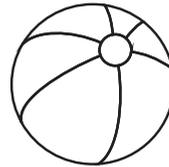
7 feet / 7 inches



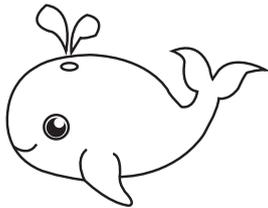
10 feet / 4 inches



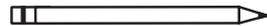
4 inches / 1 inches



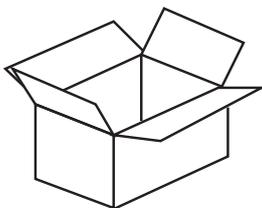
5 feet / 3 inches



50 feet / 3 inches



6 inches / 1 foot



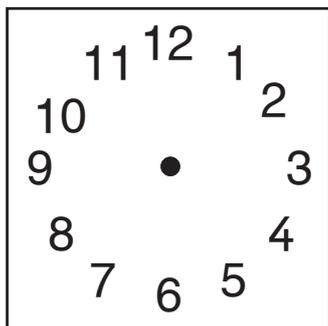
6 feet / 6 inches



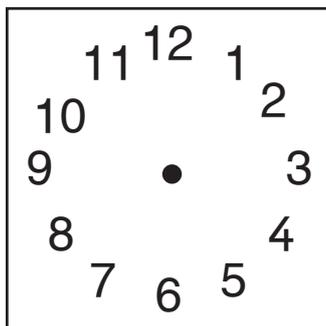
1 foot / 6 inches

Worksheet 13

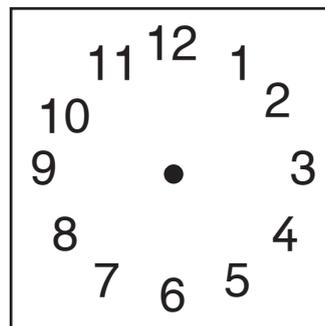
Draw the hands.



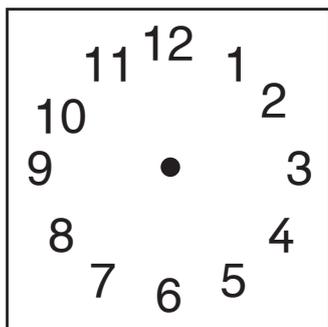
It's four o' clock



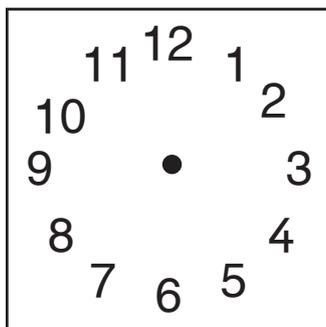
It's nine o' clock



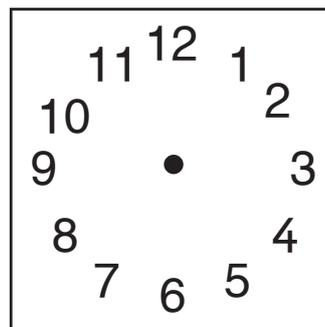
It's twelve o' clock



It's six o' clock



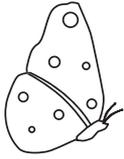
It's ten o' clock



It's three o' clock

Worksheet 14

Write the name of the day that comes before:



_____ Saturday



_____ Wednesday

_____ Friday

_____ Sunday

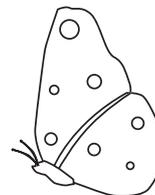
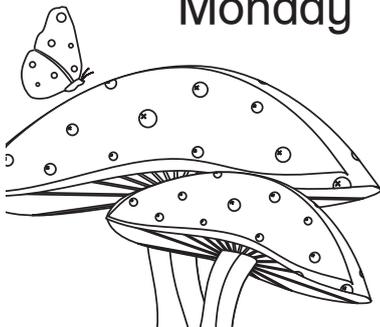
Write the name of the day that comes after:

Tuesday _____

Saturday _____

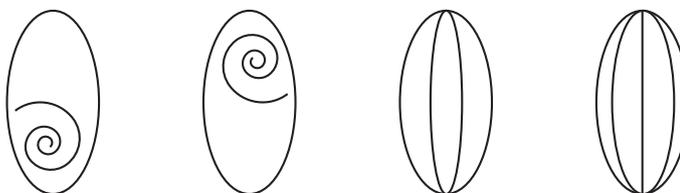
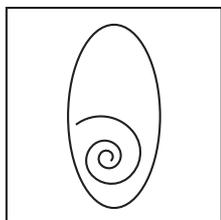
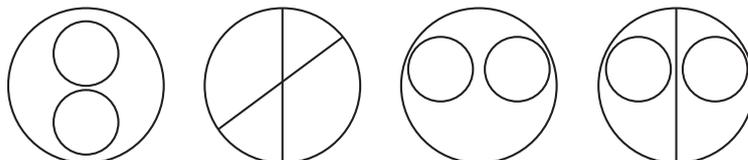
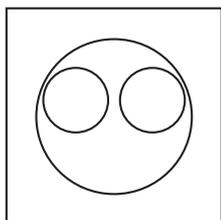
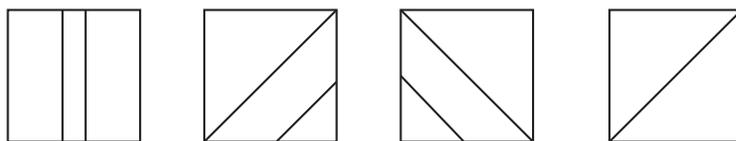
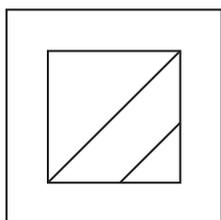
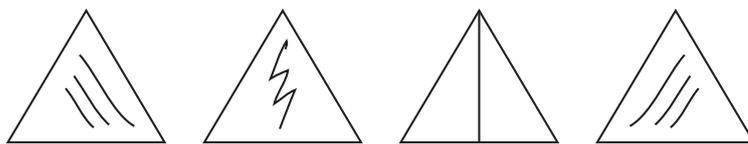
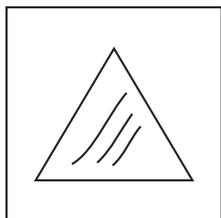
Thursday _____

Monday _____



Worksheet 15

Circle the pattern that is most similar to the one in the box.



Answers to Unit 1

Page 3

Numbers missing on the Number pyramid: 3, 4, 6, 8, 9, 10

Page 4

Number of cherries: 2, 4, 6, 8, 10

Numbers to circle: 2, 4, 6, 8, 10

Page 5

1st activity

Missing numbers: 3, 5, 6, 8, 9, 11, 13, 15, 18

2, 3, 5, 6, 7, 8, 10, 11, 12, 13, 15, 16, 17, 18, 19

2nd activity

Missing numbers: 3, 4, 6, 9

12, 13, 15, 16, 19

Number pyramid 1: 2, 5, 7, 10

Number pyramid 2: 13, 14, 15, 18, 20

Page 24

1st column: 6, 9, 1, 5, 4, 7, 8

2nd column: 7, 10; 2, 4; 0, 2; 4, 6; 5, 7; 7, 9; 6, 8

Page 25

1st column: 7, 8; 9, 10; 2, 3; 6, 7; 8, 9; 3, 4

2nd column: 8, 9; 5, 6; 0, 1; 3, 4; 6, 7; 4, 5; 2, 3

Page 27

Ascending order: 1, 4, 5, 6, 8, 9; 1, 3, 4, 7, 8, 9; 2, 3, 5, 6, 9, 10

Page 28

Descending order: 6, 5, 4, 3, 2, 0; 10, 9, 8, 5, 4, 2; 10, 8, 6, 5, 4, 3

Page 29

Increasing order: 2, 3, 5, 9, 10; 1, 2, 4, 7, 8; 3, 5, 6, 7, 8

Decreasing order: 8, 6, 4, 1, 0; 10, 9, 6, 5, 3; 8, 7, 4, 2, 1

Page 30

Ascending order: 12, 13, 14, 15, 16; 56, 57, 58, 59, 60, 61, 62
32, 33, 34, 35, 36, 37, 38; 78, 79, 80, 81, 82, 83, 84

Page 31

Descending order: 21, 20, 19, 18, 17, 16, 15
74, 73, 72, 71, 70, 69, 68
43, 42, 41, 40, 39, 38, 37
95, 94, 93, 92, 91, 90, 89

Page 33

Positions of hats: 1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th, 9th, 10th
Positions of faces: 1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th, 9th, 10th

Page 34

- | | | |
|--------------------|--------------------|------------------|
| 1. Burgers: 2 | 2. Eggs: 5 | 3. Bananas: 3 |
| Cupcakes: 3 | 3. Bread slices: 4 | Pears: 4 |
| 4. Strawberries: 7 | 5. Choco bar: 1 | 6. Lollipops: 10 |
| Oranges: 6 | Sweets: 8 | Apples: 5 |

Page 35

Rod A: 8 Tree A has 9 stars. Tree A: 4
Rod B: 8 Tree B has 5 stars. Tree B: 4

Page 36

Numbers to fill in the blanks: 4, 6, 8, 10

Page 38

Numbers to fill in the blanks: 3, 5, 7, 9

Answers to Unit 2

Page 43

8, 8; 9, 9; 6, 6

Page 44

3, 3; 2, 2

Page 45

10, 10, 7, 9, 9

Page 46

14, 18, 11, 5

Page 48

5, 5, 4, 5, 0

Page 49

7, 1, 5, 3

Page 51

10, 10, 3, 7

10, 10, 4, 6

10, 10, 1, 9

10, 5

Page 52

6	8	8	5	9	9
$\frac{+2}{8}$	$\frac{-6}{2}$	$\frac{-2}{6}$	$\frac{+4}{9}$	$\frac{-4}{5}$	$\frac{-5}{4}$

1	6	6	2	6	6
$\frac{+5}{6}$	$\frac{-1}{5}$	$\frac{-5}{1}$	$\frac{+4}{6}$	$\frac{-2}{4}$	$\frac{-4}{2}$

Page 53

7, 6, 3, 9

Page 57

9, 3, 8, 12, 7, 0

0, 7, 4, 9, 3, 9

10, 17, 11, 10, 90, 12

59, 10, 29, 26, 2, 33

Page 58

2, 8, 20, 10, 9, 12, 19, 16, 20

Answers to Unit 4

Page 69

40 chicks would be given for two cows.

Page 70

1, 1; 4, 1; 4, 2; 8, 10; 2, 8

Page 71

Re 1, Rs 2, Rs 10

Rs 20, Rs 50, Rs 100,

Rs 500

Page 72

two; ten

five; one, two, one

one, five; one, one, three

four, two; three, four

two, six; one, eight

Pages 74 and 75

The notepad price matches the 2nd set of currency.

The toothbrush price matches the 1st set of currency.

The choc-bar price matches the 1st set of currency.

The burger price matches the 2nd set of currency.

The bucket price matches the 2nd set of currency.

The cake price matches the 2nd set of currency.

Page 76

Children tick: no, yes, no, yes

Page 77

Rs 75, Rs 25

Rs 99, Re 1

Rs 90, Rs 10

Rs 80, Rs 20

Rs 84, Rs16

Rs 54, Rs 56 (Nadir will not be able to buy these as the sum is more than Rs 100.)

Page 78

Ahmed has Rs 20 in all. Ahad has Rs 15 in all.

Ahmed has more money than Ahad.

Zeba has Rs 18 in all. Zara has Rs 17 in all.

Zeba has more money than Zara.

Babar has Rs 30 in all. Bina has Rs 31 in all.

Bina has more money than Babar.

Answers to Unit 5

Page 83

2, 7, 12, 60

Page 84

7 o'clock, 8 o'clock

10 o'clock, 11 o'clock, 2 o'clock

1 o'clock, 5 o'clock, 4 o'clock

Pages 86 and 87

1st, 2nd, 3rd, 4th, 5th, 6th, 7th

Page 88

Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday

Page 89

Saturday, Thursday, Sunday, Tuesday

Friday, Sunday, Wednesday

Page 92

February, November, December

January, October

March, April

May

June, July

August

September

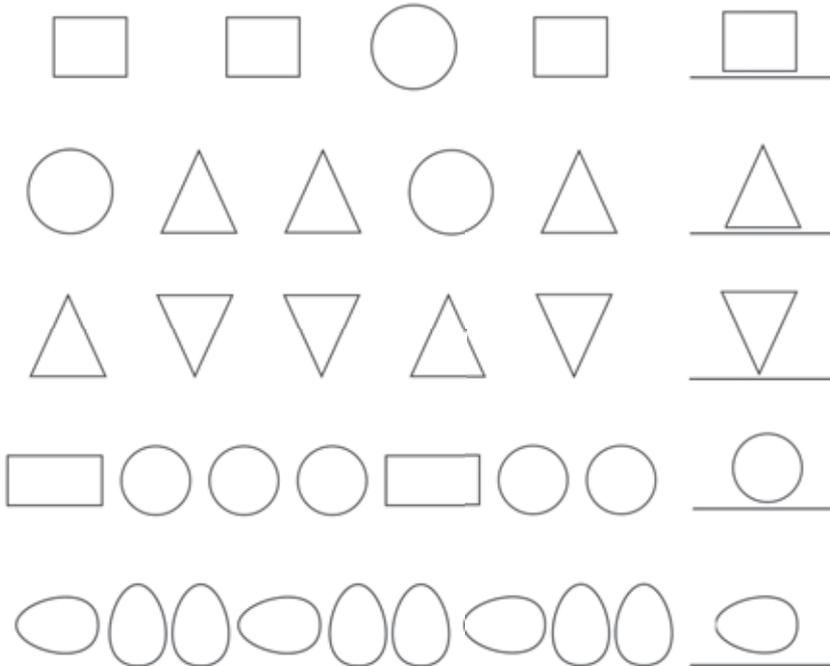
Page 94

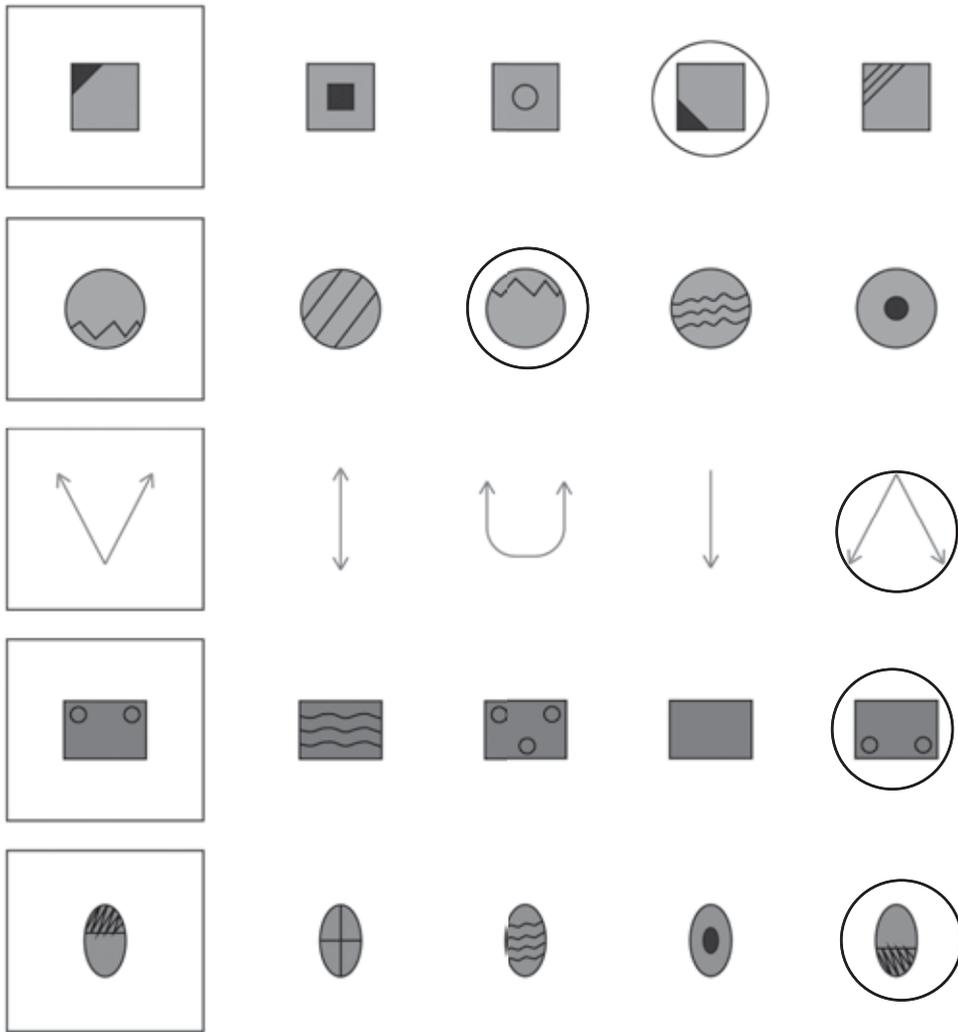
April, August; February, May, March; November, October,

September; January, June, July; December

Answers to Unit 6

Page 102





1st exercise

Children write the numbers according to those on a wall clock.

2nd exercise

1, 7 4, 10

2, 8 5, 11

3, 9 6, 12

Page 105

inside outside

on under

right

the parrot is to be circled

the tortoise is to be ticked; the snail is to be crossed

Page 106

circle; triangle; rectangle; square

Answers to Unit 7

Page 108

2, 3 10, 11

5, 6 7, 8

14, 15 8, 9

9, 10 18, 19

18, 19 12, 13

6, 7 13, 14

19, 20 6, 7

1, 2 9, 10

Page 109

12 5

13 8

6 7

9 14

19 13

Page 110

- | | | | |
|------------|------------|------------|---------------|
| 1. stars | 2. hands | 3. turned | 4. polka dots |
| 5. down | 6. back | 7. longest | 8. one |
| 9. Sitting | 10. Flower | | |

