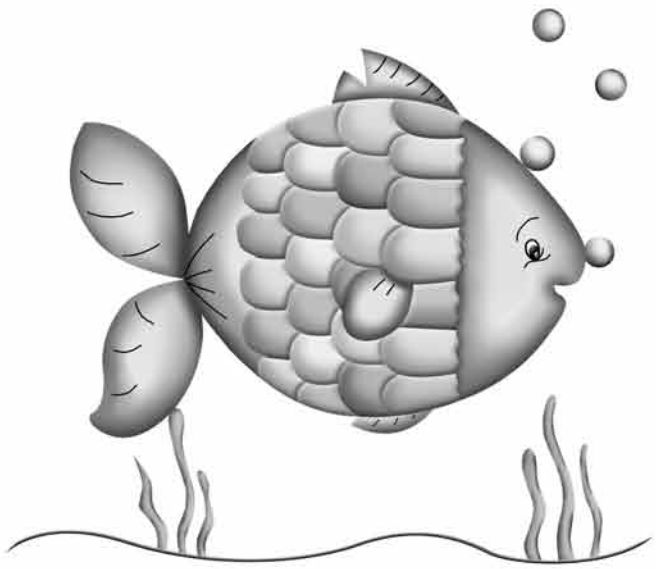
Introductory Book **One**

MATHS WISE

Teaching Guide

Second Edition with lesson plans



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Introduction

A. The *Maths Wise* series

When human beings lived in caves, their only teacher was nature. Man discovered various aspects of counting and of working with numbers from his own body, plants, and animals in his environment. Knowledge of shapes, and modes of travel were also guided by nature. This knowledge, along with other values, remained with man and was later formalized and termed 'education.'

Three-year olds come to their new school surroundings from the warmth of their homes, unsure of what to expect. Everything is new—class fellows, the teacher, the books, the sounds, the ringing of the school bell, and all need a lot of getting used to. The main objective of *Maths Wise*, therefore, is to develop a sense of security by making use of objects that children are already familiar with such as plastic or cloth soft toys, and plastic dishes.

If the teacher presents the lessons in an interesting, practical, and fun manner, learning becomes a game. New concepts should be introduced in a warm, cheerful, and friendly manner. Children who have difficulty learning through memory initially can enjoy learning through games. As the children discovers new concepts, their memory becomes active and constantly feeds their retentive memory. Simple facts and figures will remain with them all their lives and will be instantly recallable.

Maths Wise and the accompanying Teaching Guides have been written to appeal to and support teachers who may or may not have undergone a teacher training programme. It is hoped that, with the help of the Teachers' Notes and Teaching Guides, they will be able to adapt their practice to meet the learning requirements of pre-primary and primary school children.

Some of the important concepts that the *Maths Wise* series is based on are outlined below.

1. Children learn through discovery

Motivation is the one important factor which helps little children learn easily and with enjoyment. We see at home that children learn every minute they are awake; they want to learn and know more. With the help of this series, teachers will be able to give children the right direction and encourage them as they actively learn new things, in the school as well

It will be satisfying to know that:

- the children are happy.
- each learning experience is fun.
- concepts learned at any given stage will remain with them throughout their lives.

- Most children assimilate each topic in such a way that they can analyze situations and apply their knowledge at the appropriate time. For example, learning addition is applied to 'number families' of addition and subtraction. They recognize the addition pattern in multiplication tables, and apply knowledge of addition to daily life situations such as adding up a bill at a restaurant or finding out how much is left after paying a certain amount.

Lessons are often preceded by practical classroom or outdoor activities so that the children learn through discovery at every step. They are also encouraged to ask questions about everything. In a happy, carefree environment, children are more confident to ask; the more questions they ask, the better they learn.

2. Children use all the 5 senses

It is a known fact that the more senses used in the learning process, the better the understanding and retention. This is why the use of at least three senses in the classroom is recommended: touch, sight, and hearing. How a toy feels, (soft or hard), remembering and recognizing the shape of a toy, listening to what others have to say about it, and asking questions related to it, all contribute to learning. Sense of taste and smell are also used, whenever necessary.

Fun-filled classroom or outdoor activities will encourage children to use their senses fully and promote quicker learning and longer retention. By routinely engaging the children in these activities, their instincts, creativity, imagination, motor skills, and visual perception will develop. Classroom activities can be either preceded, or followed by a visit to a zoo, a garden, a market, a sweet shop, a welfare home for children,0 or even a bank, according to the topic being covered.

A sense of showing can also be developed by inviting children from welfare schools, and making them a part of an afternoon picnic.

3. Freedom in learning

The most important thing to provide in any classroom is the freedom for the children to learn at their own pace without undue pressure. Some children work faster than others: this must never be curbed. It is useful if teachers provide supplementary tasks to meet their needs so that they are not bored.

If a child is a slow learner, more practical work or repetition may be required. This must be provide in a patient, an encouraging, and a positive manner. A child should never be made to feel inadequate. Statements such as, 'Will you never learn?' or 'You are so slow!' are very hurtful, and must never be voiced. Every child is unique and special. The reward of seeing the progress made by a slow learner is no less valuable than that of observing the quick wit of a bright child. This is the most important principle of teaching.

If, on occasion, an activity seems to be beyond the understanding of most of the children in the group, insistence will only lead to frustration. It is prudent to leave the topic for a

later date when the children have been better prepared for the activity and are ready to absorb it. Demonstration is always the best form of explanation; a live object is better than an illustration.

4. Teachers praise/commend good work

Words of praise encourage children and ensure further good work. To illustrate this a 'smiley' can be stuck or drawn on a relevant page. It is a good idea to have blank smiley or WoW stickers as teaching aids. Interestingly, WoW stickers placed upside-down read 'MoM' which is always encouraging for children.

Smileys can also be stuck or drawn on each page in advance, and the children can then colour them—green for good and orange for improved work. Wow stickers can be used for the top achievers. Suggestions should always be given to indicate how poor work could be improved; it is discouraging to write 'Poor' or to show a crying 'smiley'.

Excellent

Good

Can do better

B. Use of the *Maths Wise* series

1. Maths Laboratory

A maths laboratory is highly recommended at all levels of school and becomes mandatory as children enter primary and secondary classes.

Teachers using *Maths Wise* will find it useful to look through the three Introductory Books in advance and to assemble a variety of materials suited to the topics taught at this level.

Children could be asked to bring toys, empty plastic bottles and bottle caps, beads, buttons, shells, and colourful pictures of animals and plants, the Sun, the Moon and stars, aeroplanes, cars, buses, beaches, trees—almost anything they are likely to encounter in daily life. How teachers display and use these thematically can be worked out as teaching and learning progress.

A set of shelves or a solid trunk is useful storage for these items until they are needed. If the lab is large enough, children can work there in groups; otherwise the materials could be brought to the classroom as required.

At the pre-primary level, a central maths lab will need all kinds of objects that the children are familiar with:

- toys, both soft and hard, made from 'safe' materials (i.e. no detachable bobbles or beads and no sharp edges)
- shells and beads (large, so that the children cannot swallow them)
- several sets of three objects, such as hats, two identical and one slightly different
- colourful pictures or charts to display on the walls of the classroom (eg. animals, cars, buses, flowers)
- fabric or card (plain or with straight or curved lines)
- solid 3-D wooden shapes such as cubes, ovoids, cuboids, pyramids, and cones
- flat shapes such as circles, squares, and triangles cut out of thick cardboard or wood, so the children can feel the flat surface and can count the corners and edges
- different lengths of twigs, ropes, and ribbons
- jars and tins of different sizes
- a handful each of large buttons; dried melon seeds, and dried watermelon seeds
- pencils and crayons of different colours and lengths
- wall charts relating to different concepts in the book
- identical halves of different flat shapes (such as pictures of butterflies and solids)
- squares of reflecting surfaces, preferably plastic
- 2-piece (or 3-piece) jigsaw cards with a number and corresponding picture for number concepts; similar cards for addition/subtraction sums
- non-identical halves of play dough or wooden toys for example, a bus cut into half
- a giant number line, either drawn on the floor of the classroom or in the playground
- cardboard cut-outs of the numbers 1 to 9
- number trays for number recognition
- sheets of paper with square and hexagonal grids
- number jigsaw pieces
- number tabs
- abacus sets
- number fact cards for +, –, × and ÷
- a rod with 1 to 10 hanging beads for number recognition
- plastic (or wooden) baskets or trays to contain the items
- plastic (or steel) bottles, glasses, and bowls
- a sandpit (outside)
- a patch of garden with different shrubs and pets (such as rabbits, white mice, tortoises)
- a fish aquarium and an aviary are all very useful for making comparisons

It should be mentioned that you will be working with very small children so a great deal of care should be exercised when selecting objects for the maths lab. All items should have rounded edges and must not be small enough for children to put in their mouths, noses, or ears. Supervision is very strongly recommended.

2. Wall charts and a maths table in the classroom

It is useful to have a maths table in each classroom. A selection of objects from the maths lab can be brought in as and when necessary. Changing wall displays frequently can go a long way towards making the learning of basic concepts of maths stimulating and exciting.

Wall charts and a maths table will help children to:

a. take interest in the subject and consequently improve concentration.

b. be aware of numbers in everyday life such as: 1 Sun, 1 tail of an animal, 1 nose, 1 mouth, 2 eyes, 2 legs of a bird; some animals have 3-toes on each foot (3-toed sloth); 4 legs of animals; 5 fingers and toes of humans; 6 legs of a spider (a hexapus has 6 legs); 7 colours of the rainbow, 7 leaflets in a leaf of the *saptaparni* tree also—known as the Devil's tree; 8 legs of a spider or an octopus; 9 planets, (there were 9 planets in the solar system, till Pluto was found to be a non-planet in 2006), and 10 fingers and toes. (Star constellations can be found with 7, 8, 9… 101 stars.)

c. associate animals with their homes and food. Big animals have big homes while small animals need small homes. For example, a lion lives in a den, a dog in a kennel, a rabbit in a hutch, a mouse in a hole, and an earthworm in a tiny hole in the ground. Similarly, a lion eats several kilogrammes of meat at a time, while a dog eats up to one kilogramme of meat a day.

d. identify similar objects, or the odd one out, in a group.

e. apply logic. Animals with four long legs run fast; birds, although they hop on two legs, cannot walk fast, and so have feathers to fly.

f. observe colours. Tomatoes and some roses are red; identify all the colours of the rainbow (and more) in flowers, fruits, and vegetables.

g. observe shapes in real-life. A carrot is a cone, as is a wigwam; there are many examples of spheres and ovals (egg shapes, aubergine). Bees build beehives with hexagons (6 sided polygon).

h. recognize fractions: two halves of any object are equal, be it a walnut, an apple, or a cake.

i. learn to do mental addition: 2 white mice and 1 more makes 3. This leads to multiplication: 2 hands plus 2 hands plus 2 hands makes 6, or 3 lots of 2 = 6

j. recognize sets: a set of vegetables, a set of toys, a tea set, a set of jewellery.

k. observe similarities and opposites:
   i) big elephant and small mouse
   ii) a mango and an apricot each have 1 seed, but an apple and a cucumber each have many seeds.
   iii) the seeds are always INSIDE a fruit while the skin is on the OUTSIDE.
   iv) an aubergine and a tomato have SMOOTH skin, but a bitter gourd has a ROUGH skin. Many more such examples can be found.

l. count—bring me 1 apple please, eat 2 cherries, a tricycle has 3 wheels.

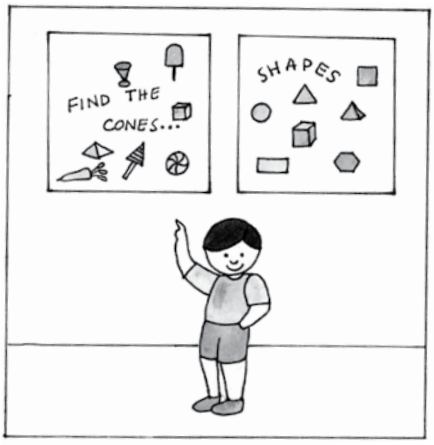
m. associate numerals with sets of objects.

n. improve motor control as children hold objects, colour pictures, count on their fingers, draw curved and straight lines, and write letters or numbers.

o. develop vocabulary as new terms are introduced, e.g. a pair of hands, a pair of eyes, a tricycle, a quadruped, heavier than, longest of ….

3. Theme weeks and wall charts

Theme weeks add a zing to the topic at hand. The topics can vary from pets, to flowers, to neighbouring countries, to water transport. Pictures or wall charts related to a particular theme should be collected in advance (often with the help of the class), taped onto soft boards and brought to the lesson. They can be displayed for a few days, or as long as required.



Large, colourful pictures can often be found in newspapers and magazines. Many theme related picture books can be bought from second hand bookshops. It is also very easy to find appropriate pictures on the Internet and print them on paper or clear plastic sheets.

a. *A Week on Flowers*

A week on flowers can be planned for the flowering season, February/March, when most gardens are in full bloom. Activities could include a visit to a garden, with a display of pots of fresh flowers; display of paper flowers from a 'birthday party' store or pictures from magazines; making simple paper flowers; 'Wear a flowery dress/shirt day'; …a week is too short for all these ideas! But planned well, it can work.

What do the children learn?

Counting the petals on a flower, or the flowers in a pot; the different types of flowers in the park; different *colours* (any matching vegetables?) and their various shades; *shapes* or velvety of leaves; *textures* of petals or leaves (rough or smooth or velvety) or associating a fragrance with a particular flower). The list is endless.

There are, for example, many different shapes of leaves. Some are oval, some are elongated, while others spread out like a fan. Some leaves have little 'leaflets', like the leaves of the tamarind tree or flame of the forest. Some leaves have smooth edges, others are serrated (*vocabulary*).

Shapes of flower beds or sequences in a flower bed can be observed: the curved edge of a flower bed; shorter plants, such as petunias, are planted in the front, taller ones like marigolds behind them, and the tallest ones such as dahlias, right at the back.

b. *A Week at the Farm*

'A week at the farm' can be held in the school playground if it is spread out, or in a neighbouring area or a farmhouse with animals (such as a horse, a cow, some sheep, some hens and ducks, and white mice).

Birds and animals: Caterpillars may look like big earthworms, but butterflies emerge from caterpillars, not earthworms (similarities and differences). Frogs croak while crickets twitter. If the visit is in the early evening, maybe fireflies could offer a variety of information. (Some birds use fireflies in their nests to provide light.)

A Pets Day can be organized as part of this week. Children who own pets can bring them to school. They can be introduced to friendly dogs, cats, rabbits, and birds, observing textures of fur and food habits. They can bring different fish in a suitable container. Discussion about babies is always exciting: a baby dog is a puppy, a duckling is a baby duck, a baby lion is a cub, and so on. And above all, children learn to handle pets and treat animals with affection.

Trees can contribute a great deal to learning: a beehive on one tree, a woodpecker pecking at the trunk of another, or peeling off the rough bark, or a squirrel scurrying up and down (feathers and fur).

Association of one to one... 1 dog in a kennel, 2 birds in a nest, 3 eggs being hatched or 4 fish in a pond. (please treat these merely as suggesting, to be developed as conveinent for the teachers)

c. *Protection of the Environment*

- Before preparing for an outdoor visit, each child must have *an extra napkin*.
- Children learn *not to pluck* flowers, and to care for plants.
- Children learn *not to throw* sweet wrappers or any other rubbish on the ground.
- Children *not be allowed eat chewing gum* or *spit it out.*
- Use of plastic MUST be discouraged.

  The teacher can lead the conversation to the importance of planting trees (*helps purify air and reduce pollution*).
- Children must learn to *wipe their shoes on a doormat* when going home after school.

- Children must be taught that hands gather dust all the time, especially after a farm visit. They must *not wipe their hands on their clothes.* They should *wash their hands properly and wipe them on clean napkins*

All this leads to *observation* (comparisons, similarities), *association* (grass is green and a cricket is green too), *logic and recognition* (this creature has two pairs of wings, which are not so colourful; so it is not a butterfly, but a moth). A hen lays big eggs, but an ostrich lays an egg equal in size to 24 hen's eggs! What about a pigeon's eggs, a frog's eggs and a mosquito's eggs?

d. *Vegetable and Fruit Day*

Encourage children to eat more vegetables and fruit because they are good for their health. A vegetable patch can be cultivated in the playground. They can bring, for example, 2 or 3 oranges, bananas, cucumbers, apples, carrots, guavas, and *chikoos*. A market is held, where each vegetable is priced at Rs 10 or Rs 20. Children are given pretend money to buy vegetables and fruit from the market. At lunch time, the teacher could make fruit *chaat* for everyone to share... it is a good way to introduce receipes...

Make a chart showing pictures of common fruits and vegetables. Record the names of the children who eat these during one week. It is essential to explain that eating fruit and vegetables is healthy. For example, a banana, an apple, some grapes, cucumber, and tomato (a combination of green, yellow and purple foods) or pomegranate, *lady fingers*, radishes, carrots, and capsicums (red, green, white, orange, and yellow) are readily available fruits and vegetables.

Have a competition: ask the children to draw the fruits and the vegetables that they have eaten during the week. Compare their lists, and award prizes to those who have eaten the most fruits and vegetables during a week.

Theme activities may appear non-mathematical, but for 3 to 6 year olds, all learning is integrated. Most of the language used daily contains mathematical terms or references. A variety of experiences will lead to improved motor control, reasoning, (a frog cannot lay a big egg), and creativity, and develop observation, association, recognition, retention, and logic skills.

4. Games and mazes

The books contain plenty of interesting games and mazes that help maintain the children' interest in maths. Most of these are based on the concepts taught in the books, so working with these helps revise and reinforce the concepts.

New mazes can be created by the teacher. These can be:

i) Pick up the fruits and the vegetables along the way, and not the pizzas and hot dogs.

ii) Pick up waste paper and put it in the dustbin.

iii) Pick (not PLUCK) all the pink flowers and put them in a vase.

5. Worksheets

The pages in the introductory books are designed as worksheets. Based on each of these, the teacher can make additional worksheets for extra practice.

For example, *Introductory Book 1, page 3* shows halves of a butterfly and an ice cream. Additional worksheets may show halves of a flower, a bird, a chair, a bottle, or a tennis racquet. There are two ways to halve a circular or square cake, but 3 ways to halve a triangular cake.

Worksheets with grids forming squares, triangles, and hexagons lend themselves to drawing different patterns.

Worksheets showing animals and their homes, other than those shown on page 5 of *Introductory Book 1* can be designed.

There can be more examples of IN and OUT (*Introductory Book* page 22) e.g. a boy going inside a house, and another one coming out, a rabbit in or outside a hutch, a seed in or outside a fruit.

For sequencing, design more patterns like those shown in *Introductory Books 2 and 3.* The children could be engaged in designing these worksheets; they will happily draw different patterns.

Based on the units on shapes, help the children make additional worksheets using pictures of the shapes being taught as on page 17 of *Introductory Book 3.*

C. Assessing the children's learning

Review and assess sections in all the three *Introductory Books* helps the teacher to assess the children' learning, retention, and understanding of concepts after a year.

End of term or annual tests are not recommended at this level. Use of words such as 'test' or 'examination' tends to create a sense of discomfort, or even fear, amongst children at this level; these terms are best avoided. If testing is necessary, it should be flexible and open-ended, with emphasis on assessing their retention, and their ability to understand and learn new concepts. Assessment throughout the term using worksheets or activities is a good alternative to testing.

Assessments may be conducted on the following lines:

1. Muscle control (Does the child sit upright? Can the child write letters/numbers? Does the child hold a pencil, spoon, or ruler in the correct manner? Can the child tie shoe laces?)
2. Memory (Is the child good at memory games? Does he/she remember to say please or thank you? Does he/she remember names of shapes?)
3. Recognition (Can the child recognize shapes, or find objects/numbers/letters hidden in pictures?)

4. Association (Does the child associate brown shoes and brown clips with a brown T-shirt? Can the child group sets of objects according to numbers, shapes, colours, or any other characteristics?)
5. Observation (Can the child identify missing features in an incomplete picture of an animal? Can he/she place things in a prescribed sequence, e.g. ascending or descending order?)
6. Logic and decision making, memory, association, recognition, and observation tasks develop reasoning and decision making skills. For example:
   a) 'The teacher has asked us to stand in a line in ascending order of height, starting in the front. I am the tallest. I must stand at the end of the line.'
   b) Squares are flat shapes, and wooden cubes are solids. To gift wrap a box, flat paper is needed.

D. The three introductory years

The first year in school

A child's first association is with the parents and then with the other members of the family. They learn at home by seeing, hearing, feeling, smelling, and tasting.

At home, everything and everybody is warm and every corner is comfortable. The child leaves this comfortable atmosphere and comes to a new environment where new faces and things greet him/her. A bond of love, trust, and security must develop between the teacher and the child before learning-through-play can begin.

Affectionate gestures need to be transferred to school: a little touch on the hand, a little pat on the back, a hug. All these go towards creating a friendly environment for the child in school. The responsibility for this, and for forming friendly bonds with the children lies squarely on the shoulders of the teacher. A relaxed, easy posture, a soft voice, encouraging words, a friendly touch, and a caring attitude, must be demonstrated before any learning can start. All children in such an environment will always be happy, and grow up as happy youngsters.

UNIT 1
RECOGNITION

Teaching objectives

- help children to recognize living and non-living things in their surroundings
- help children to identify these objects by their characteristic features such as shape, size, use, identical pair, half, or outline
- help children correlate and associate living creatures with their respective offspring, habitat or food

Learning outcomes

Children should be able to:

- identify objects in their surroundings by referring to their type, use, and colour
- match an object with its identical pair, half, or outline
- match each living creature with its young, its habitat, its food, or its use
- identify the odd one in any group, based on the above criteria

Teaching materials:

- a selection of different toys
- some items of clothing
- picture flash cards of items of clothing
- a few food items
- paint and paper
- pictures/charts of animals
- pictures of various daily activities and places of interest

Learning activity

Lesson 1: Toys

Bring a selection of toys to the lesson. Toys selected should be of different shapes, sizes, colours, materials, textures, some squeak and laugh when pressed, and their individual uses. As you introduce each toy, encourage the children to touch, feel, and play with it for some time. Talk about the shape (such as square and round), size (big or small), and colour.

Note: It is better to keep to primary colours initially: red, yellow, and blue, and then introduce other colours in following lessons. Texture can be rough/smooth and soft/hard; Use can include, e.g. a drum is used to play music, a (toy) stove is used to cook food in a (toy) pan, and a bat is a sport equipment used to hit a ball in cricket, a small pram is used for a doll.

Explain/discuss different ways to identify each toy with reference to its characteristic features and uses.

Help them to trace the outlines of some toys, musical instrument and sports equipment and identify the toys from these outlines.

Task: Children attempt the activity on page 1.

Lesson 2: Clothing

Ask children to wear different types of clothes to class on a particular day, in keeping with the characteristics discussed in Lesson 1. For example, children could be asked to wear clothing in primary colours on one day, and clothes with a square or round pattern the next day. Introduce the names of the items of clothing and their characteristic features. It would be best to introduce colours and shapes, at least at a very basic level.

Show flash cards of the different items of clothing and ask the children to match each one with the person wearing it.

Task: Children attempt the activity on page 2.

Lesson 3: Food

Organize a small class picnic or a party and for this, ask the children a few days before to bring various food items to school. Introduce the names of the different items and discuss their shape, size, colour, and taste. Ask them to list their preferred items of food hot or cold, as a snack or for lunch.

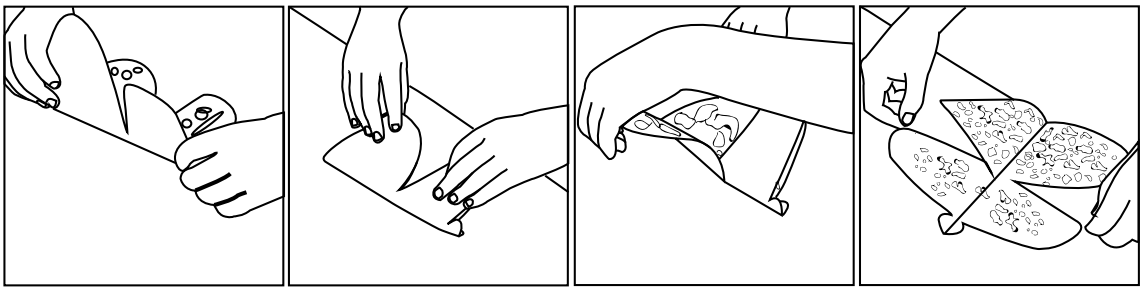
Refer to the items shown on page 4, arrange them and cut them into halves. Talk about symmetry. Show some pictures of objects with one-half covered and ask the children to identify the objects. (If possible use objects discussed in lessons 1 and 2). The session may end with a squish painting activity. A squish painting activity is an easy and is an engaging way to teach children concepts of symmetry.

Teaching material:

- Paint – preferably in primary colours that have already been introduced in Lessons 1 and 2
- Paper – preferably large, relatively thick sheets which will not become soggy
- Plastic spoons

Demonstrate how to make a squish painting by folding a sheet of paper in half, opening it up again and dropping paint on to the centre. Encourage children to use different colour

combinations and vary the amount of paint and pattern used. Then, refold the sheet of paper and 'squish', pressing and pushing the paint as far out as possible. Carefully open the sheet and show children the symmetrical pattern which will have emerged.



Task: Children attempt the activities on page 4 first, and then the one on page 3.

Lesson 4: Animals

Show the children pictures of various domestic and wild animals and discuss the manner in which to identify them. Talk about various features of the animals such as their eating habits, their habitat, or any other special features. Revise the activities discussed in lessons 1, 2, and 3.

Task: Children should attempt the activities on pages 5, 8, and 9.

Lesson 5: Animal babies

Repeat the activities of the previous lesson using pictures of animals and their babies. End the lesson with a film such as *Madagascar* or *Jungle Book*. An excursion to the zoo may be planned later to reinforce concepts and review key terms.

Task: Children attempt the activity on page 6.

Lesson 6: Picture study

Show pictures of various public places (a park, a market, and a scene from a circus). Revise the topics discussed on previous days. Conduct story-telling sessions involving activities on page 7.

Task: Children attempt the activity on page 7.

Summing up

Refer to all the previous activities, including references to the primary colours (red, blue, and yellow) wherever applicable.

Task: The children should attempt the activities on pages 10 and 11.

UNIT 2
COLOURS

Teaching objectives

- re-introduce the three primary colours (red, yellow, and blue)
- encourage children to associate these colours with common objects
- introduce some non-primary colours

Learning outcomes

The children should be able to:

- identify the three primary colours
- match colours to objects around them
- identify and name some non-primary colours
- colour an outline of a familiar object with an appropriate colour

Teaching materials:

- different coloured toys, or objects such as coloured pencils, crayons (red, blue, yellow, and green)
- pieces of fabric and paper of different colours and textures
- a few items of red, blue, yellow, and green clothing
- some red, blue, yellow, and green food items
- pictures or charts of animals
- a selection of coloured flowers
- finger paints

Learning activity

Lesson 1: Red

Remember to bring bangles of different colours for the various 'colour' lessons, and introduce a rainbow.

Bring toys of various shapes, sizes, materials, and uses, all red in colour. Examples of toys: a red plastic vegetable, such as a tomato, a plastic flower such as a rose, a red doll, a red plastic ring or ball, a STOP sign, a cricket ball, swimming caps, and a fire engine. Some pieces of fabric with different textures such as cotton, silk, and satin are also useful.

Ask the children to identify the feature common to all the toys; they should answer that they are all red. They should be encouraged to touch, feel, and play with the toys for some time. Write the word 'red' on the board and formally introduce it.

Explain that blood is always red in human beings and all animals with a backbone. (Blood is not red in cockroaches and insects). Pictures of a variety of red objects such as poinsettias or china roses, red beetles, red lipstick, and nail polish can be displayed on the walls, or shown on a computer screen.

To revise previous lessons, talk about the shapes, (square, round) sizes, (big or small) texture soft/hard, rough/smooth) and other features of the toys. Point out the different shades of red; different shades of nail polish could be used or different vegetables such as tomatoes, strawberries, capsicums, or different pieces of fabric.

Introduce the names of the different shades of red such as scarlet, crimson, pink, or maroon. Ask them to name red objects in the classroom, at home, or on the way to school (e.g. a car, a bus, a fire extinguisher, the red traffic light, and NO ENTRY or EXIT signs).

The rainbow has a RED strip. Explain VIBGYOR

Task: Help the children with the task on page 12.

Lesson 2: Blue

Ask the children to wear blue clothes to school for this. Pictures of a blue sky, blue water, blue kingfisher, blue whale, a blue ball in snooker, blue eyes of a child and blue in the feathers of a peacock would be interesting for them.

The rainbow also has a BLUE strip.

Repeat Lesson 1 activities using blue items.

Task: Children attempt the activities on page 13.

Lesson 3: Green

Take the children into a garden where they can observe many shades of green and many different-shaped leaves as well. A basket of green beans, spinach, coriander and mint leaves, chillies, capsicums and corrugates makes a good start for green of plants. Sizes of bushes, leaves, and trees can also be compared.

A 'green' person is a person who cares about his environment. Make green badges children in class wear to show that they care about the environment.

Also carry out an experiment to show how blue and yellow paints mix to produce green coloured paint.

Ask them to grow a small plant at home and observe how the colour of the leaves changes to different shades of green.

The rainbow also has a green strip.

Repeat Lesson 1 activities using green items.

Task: Children attempt the activity on page 14.

Lesson 4: Yellow

Conduct a hand/finger painting activity using different shades of yellow. Yellow capsicum, yellow of the egg yolk, yellow sunflowers and flowers from the mustard plant, are good examples of different shades of yellow. If possible, show a video of yellow daffodils dancing merrily in the sun. Yellow is also a part of the rainbow. Repeat some of the activities from Lesson 1.

Task: Children attempt the activity on page 15.

Here is a nursery rhyme about colours.

A rose is red,

And the grass is green,

The sky is blue

And I love you.

Ask the children to create their own nursery rhymes such as the one given below.

Blood is red,

The sea is blue,

Bananas are yellow,

And I say, 'Hello'.

Lesson 5: Other colours

Introduce other common colours by adding a drop of any paint to water in a beaker. Encourage the children to create their own colours by adding drops of any of the four colours introduced in preceding lessons. Show different pictures of a rainbow and talk about the rainy season. Use a prism to produce a spectrum of light, which has the colours of a rainbow.

Task: Children attempt the activity on page 16.

Lesson 6: Summing up and class production

Decorate the classroom in advance, with balloons, streamers, and ribbons of different colours for *Colour Day*.

Ask the children to dress up and bring a food item, a toy, or a picture of an object in their favourite colour and say two or three sentences about it. Parents could be invited to watch.

Additional resources:

At the end of this guide are worksheets 1 to 6.

Use them to reinforce colours.

UNIT 3
OPPOSITES

Teaching objectives

- help children identify differences in size, shape, position, temperature, emotions, and day and night
- develop observation skills

Learning outcomes

The children should be able to:

- identify and distinguish between different objects by referring to size and shape
- describe the position of objects
- differentiate between hot and cold
- recognize happy and sad emotions
- differentiate between day-time and night-time activities

Teaching materials:

- some toys of different sizes crayons and coloured pencils/paints
- pictures of objects of different sizes
- emoticons (visuals of happy and sad people)
- pictures of a hot, sunny day and a snow scene
- pictures of day- and night-time activities

Learning activity

Lesson 1: Big and small

Show various toys or pictures of objects to explain the differences between the following:

a BIG elephant and a SMALL rat

a BIG pencil and a SMALL rubber

a BIG blackboard and a SMALL piece of chalk

Task: The children to attempt the activity on page 17.

Lesson 2: Tall and short

Show various toys or pictures of objects to explain the differences between the following:

a TALL man and a SHORT man

a TALL ladder and a SHORT ladder

Some other examples could include ladders, vases, plants, and trees.

Explain the difference between TALL and LONG. Tall is usually used to describe vertical objects, e.g buildings, trees, animals; long is usually used to describe horizontal objects, for example a long fence or a long rope. Long is also used to describe things like hair, legs, and nails. HIGH is also used sometimes, to refer to mountain heights.

Task: Children attempt the activity on page 18.

Lesson 3: Fat and thin

Use visual aids to explain the differences between the following:

A FAT pony and a THIN pony

A FAT sheep and a THIN sheep

Note: Teachers need to be sensitive here if there are extremely fat or thin children in the class.

Task: Ask the children to attempt the activity on page 19.

Lesson 4: Up and down

Show pictures of objects to explain the differences between the following:

UP a roller coaster and DOWN a roller coaster (or stairs or a lift or a spider climbing UP or DOWN the wall) Jack and Jill went up the hill... is a good example.

This can be a fun topic. Children can stand in a line and lift hands UP and DOWN, look UP and DOWN. Many such exercises can be worked out; some are given in Teachers' Notes on pages 20 and 21.

Task: Children to attempt the activities on pages 20 and 21.

Lesson 5: In and out

Show pictures to explain the differences between the following:

IN a kennel (a dog sitting inside) and OUT of a kennel (a dog walking out of a kennel). In the DEN or out of the DEN. 'The tiger is in the den...'

Use the examples given in Teachers' Notes on page 22 to explain further the concepts of IN and OUT.

Task: Ask the children to attempt the activity on page 22.

Lesson 6: Hot and cold

Show various objects or pictures of objects to explain the differences between the following:

a bowl of HOT soup and a cup of COLD ice cream

in the HOT Sun and in the COLD of snow

a hot streaming kettle of water or COLD ice

As you explain hot items, please warn children about the danger of touching hot objects.

Task: Children to attempt the activities on pages 23 to 25.

Lesson 7: Happy and sad, open and closed

Talk about times when we are happy and what makes us sad. Show a picture of a HAPPY, laughing child with a bunch of flying balloons and a SAD, crying child with a burst balloon. (It could be a dog with a bone and a dog looking at a bone.) Talk about the expressions on the faces of a SMILEY

Follow the Teachers' Notes to explain emotions further.

Task: Ask the children to attempt the activity on page 26.

Show photographs of an OPEN shop and a CLOSED shop. (It could be a box of chocolates, or an OPEN or a CLOSED fist.) An OPEN mouth at the dentist's chamber and a CLOSED mouth when a child is sulking

Refer to the Teachers' Notes for further explanation.

Task: Ask the children to attempt the task on page 27.

Lesson 8: Day and night

To explain the differences between DAY and NIGHT, show a picture with the Sun shining and of NIGHT with the Moon and stars (or a child in school uniform and in bed, cuddling a Teddy, with a bed-side lamp on).

Task: Refer to pages 28 to 30 for the Teachers' Notes before asking the children to attempt the activities on pages 29 and 30.

Lesson 9:

Once the new words have been introduced, display an illustrated chart of opposites to reinforce the concepts for a couple of days.

As the children look at the pictures, discuss the differences and how the differences can be identified.

When the children can use the target words confidently and accurately, a game or a puzzle of opposites would be interesting. They will enjoy a treasure hunt in the garden for small or big, fat or thin, and rough or smooth objects.

An additional point of interest is texture: ROUGH as the bark of a tree or SMOOTH as a rose petal, ROUGH as the skin of a bitter-gourd or SMOOTH as the skin of an apple.

Concepts of EMPTY and FULL, CLEAN and DIRTY can also be introduced.

Additional resources:

At the end of this guide are additional worksheets 7 and 8. Use them to reinforce opposites.

UNIT 4 SHAPES

Teaching objectives

- introduce common 3-D shapes
- familiarize children with objects that have common 3-D shapes

Learning outcomes

Children should be able to:

- identify and name common shapes
- match objects to 3-D shapes
- identify the odd item in a group based on shapes

Teaching materials

- 3-D objects and flat shapes
- paint and paper

Learning activity

Lesson 1:

Bring to the classroom various 'maths manipulative' boxes containing 3-D shapes, puzzles, and straws which can be inter-connected, and other useful objects. The children can easily be introduced to the various shapes through the manipulatives. They should touch and feel the objects, and as they do so words such as flat surface (base of a cone, a cylinder, and sides of a pyramid, a cube, or a cuboid), and *curved surface* (curved face of cone or a cylinder) should be introduced.

Task: Referring to page 31 for the Teachers' Notes, talk about flat and curved surfaces. The children could roll curved shapes on the floor first (a flat surface) and then on curved surfaces.

Each face of a shape can be dabbed with paint and an impression of it made on paper.

Lesson 2:

Explain the difference between 2-D and 3-D shapes: 2-D objects are flat, have no height and cannot contain anything. 3-D objects are three-dimensional (show the three

dimensions: length, breadth, and height) and can contain something inside them. 2-D shapes can be put together to make a 3-D shape.

The children should look at and feel the different objects around them and name them. They can also form complex shapes (such as a clown, a house, a rocket, a train), first from 2-D shapes and then from 3-D objects. Pictures of 2-D and 3-D clowns, rockets, trains, and houses should be displayed for them to copy.

Task: Refer to the activities on pages 32 and 33 of the Teachers' Notes.

Lesson 3:

Use additional worksheets 9 and 10 for this lesson.

Task: Help the children to complete the activity on page 34 by showing them actual objects.

UNIT 5
WRITING PATTERNS

Teaching objectives

- develop fine motor control by tracing patterns
- explain the difference between straight and curved lines

Learning outcomes

Children should be able to:

- draw different types of curved lines
- distinguish between straight and curved lines

Teaching aids

- sand pit and strong sticks
- sheets of paper and pencils
- coloured pencils/paints/crayons
- water colours
- string
- lengths of red and blue wool
- glue

Learning activity

Lesson 1: The sand pit

A sand pit can be used to help explain straight lines, curved lines, and slanting lines. Take the children out to the sand pit and work in groups. Give each of them a strong stick. As they draw lines in the sand, explain about straight and curved lines. If there is no sand pit, a large platter of sand and smaller sticks can be used.

While they are outside, ask the children to make groups of three; the first child should stands against a wall; the second child stands with his/her hands on the wall and his feet 20/25 cm away from the wall; the third child lies on a bench.

Introduce the terms *vertical, slanting,* and *horizontal*. This activity may be repeated with long sticks positioned straight against the wall, in a slanting position, and horizontally on the floor.

Each child works in the sand pit and draws a horizontal, a vertical, and a slanting line.

Demonstrate, and then help the children to hold a piece of string taut between their hands, and point out that the string forms a straight line. They hold their hands in different positions to form horizontal, slanting, and vertical lines.

Vertical buildings, slanting stairs, and the horizontal surface of each step are good examples to reinforce understanding.

children stand in groups and play *Simon Says:*

When the teacher says, 'vertical', they hold their arms up straight and stand straight. When the teacher says, 'horizontal', they lie on the floor, hands stretched by their sides. 'Slant' means they stretch their hands up (hands are in line with the body) and lean against a wall.

Task: The children should complete Worksheet 11.

Lesson 2: Finger tracing

Put a few sheets of paper on the floor and give groups of children water colours. They dip their fingers in the paint and trace vertical, horizontal, and slanting lines. Demonstrate and then ask them to make shapes using these lines, on paper. Display their work in the classroom.

Task: Children attempt Worksheet 12.

Lesson 3: Crayon tracing

Before the children are introduced to curved lines, they should make horizontal, slanting, and vertical lines by holding a length of string taut in their hands. Make sure that these are straight lines.

Next, ask them to bring their two hands closer together: the string becomes loose and hangs. Explain that each of them has formed a curved line.

Place paper and paint on the floor. Ask the children to dip the string into the paint and draw straight and curved lines with it.

They should identify curved lines in objects around them such as the curve of the edge of a paper cup, the back of each child's head, surfaces of inflated balloons, and pictures of animals' tails and the beaks of certain birds.

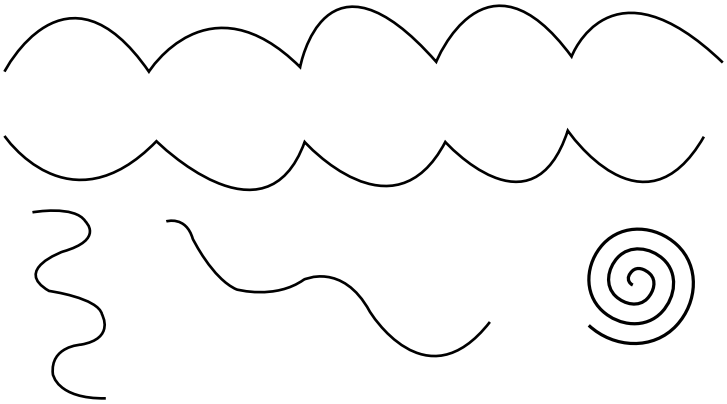
Help them to place curved and straight lengths of string on pieces of chart paper and trace the lines with crayons.

They can work on a large black and white picture of a village fair. Help them stick red wool along curved lines and blue wool along straight lines.

Task: Help the children to make greeting cards for their parents/grandparents/siblings by using coloured wool to make straight or curved lines.

Lesson 4: Pencil tracing

Show the children how to hold a pencil firmly, to enable them to form letters of alphabets and numerals correctly. A left-handed children should learn to form a firm grip with his/her left hand. Demonstrate on the board how to draw some curved lines. Here are some simple patterns made with curved lines. This simple activity will help in improving motor control skills later in life, as well.



Task: Give each child a copy of Worksheet 12. Ask him/her to colour a balloon and draw a string for it in the same colour.

Encourage the children to create different patterns using curved lines. A large picture of a clown created from curved and straight lines could be displayed in the classroom.

They attempt the tasks on pages 35 and 36.

UNIT 6
NUMBERS

Teaching objectives

- introduce the numbers from 1 to 10
- introduce the number names from 1 to 10
- help children associate each numerals with its respective value
- help children write the numerals from 1 to 10

Learning outcomes

The children should be able to:

- count from 1 to 10 objects in their surroundings
- recognize numerals from 1 to 10
- match numerals with their names
- write numerals from 1 to 10

Teaching materials:

- classroom objects
- objects in the surroundings
- beads, marbles, buttons, and artificial coins
- abacus
- large number flashcards
- cut outs of numerals from 1 to 10
- pieces of chalk/board markers
- paint
- large sheets of paper

Learning activity

Lesson 1: Introduction to numbers

It is very important to base this lesson on children' existing knowledge. The concept of numbers should be learned without any misconceptions.

Most children are familiar with parts of their bodies, so the lesson can start with questions such as:

- How many noses (heads) do you have?
- How many eyes (ears, hands, legs) do you have?
- How many fingers do you have on one hand?
- How many fingers do you have on both hands?

Next, move on to representing the numbers by showing the correct number of fingers. The children count various objects in the classroom and answer by showing the corresponding number of fingers. Ask questions about objects that are not in the room, but which they are familiar with. For example:

- How many Suns (or moons) do you see in the sky?
- How many swings are there in the school playground?
- How many legs does a cow have?
- How many wheels are there on a car (or a tricycle)?

After the number 5 (fingers of one hand), show pictures, charts, or films of a ladybird (with six legs), a rainbow (7 colours), a spider (8 legs) or an octopus (8 legs).

Ask more questions such as:

- How many legs does a cockroach have?
- How many colours are there in the rainbow?
- How many legs does a spider have?
- How many arms does an octopus have?

To consolidate the learning, arrange beads, marbles, and buttons on a table and ask a child to collect a given number and put them on his/her desk. Repeat with different children and objects.

Task: Ask children to complete Worksheet 13 in class.

Lesson 2: Associating quantity with each numeral

Repeat activities similar to those completed in lesson 1. Hold up a number flashcard for each number. It is advisable to do numbers 1 to 5 on the first day and then move on to numbers 6 to 10 on the following day. Explain and demonstrate the use of the abacus.

Try the following activities to consolidate the concepts:

Task: Ask children to complete Worksheet 14. The worksheet may be extended to 10 once the children are familiar with all the numerals.

Lesson 3: Writing the numerals

Tell the class the manner in which the cave man wrote the number of animals he had. i stroke for I animal: II strokes for two animals and III strokes for three animals. Strokes for each quantity were joined together to create the present day numerals. i, ii, and iii are still used in Roman numeral system.

It is best to introduce one numeral at a time. Allow the children to take their own time to learn to write each numeral. Use different days for each numeral.

Some ways of familiarizing the children with numerals are:

1. Children are encouraged to handle cut-outs of each numeral and run their fingers around them.
2. Each numeral can be dipped in washable paint and used to make impressions on paper on the floor.
3. Children use coloured chalk/markers to trace the numerals on the board. They then trace the number patterns in the book, one number at a time. It is important to check that each child makes the strokes correctly. Left-handed children may need extra help since they may work from right to left.

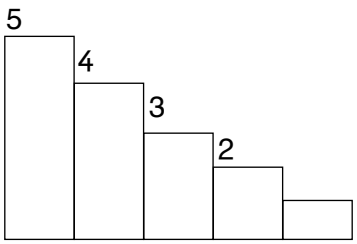
Task: Children should attempt pages 37 to 53, one page each day.

Additional activities:

The following games/activities are a fun way of learning to count quickly.

1. Step counting:

A staircase is useful to show the increasing and decreasing pattern of numbers, since the children are already familiar with UP and DOWN.



2. Game of snakes and ladder:

A snakes and ladders game (drawn on the floor), with large dice (made from a cube-shaped box) can also be useful for familiarizing the children with numbers. One child rolls the dice and the other moves it according to the numbers rolled.

3. Bingo:

A game of Bingo with numbers between 1 and 9 can be played

2		3
4	6	
	7	9

A sample template of a bingo coupon is given above. Similar templates are handed out to the class. Call out numbers, and children cross out each number as it is called.

4. Buzz:

A game of 'Buzz' with numbers between 1 to 10 can be played. A variety of versions are available on the Internet; select the most suitable for this level.

The most common version is where children sit on the floor, in a circle. They start counting and say 'Buzz' for every alternate number. 1 Buzz 3 buzz 5 buzz 7 buzz 9 buzz 1 buzz 3 buzz and so on.

5. Another interesting way of practising numbers is to ask the children to stand in lines in the playground. Ask them to march: right foot 1, left foot 2, right foot 3, left foot 4, and so on up to 10. Then start with 1 again.

Movements of the body can also be related to numbers. The children stand and perform the action related to each number.

1. Arms up
2. Arms sideways (both arms to the right, then both arms to the left)
3. Arms bent, hands on the shoulders
5. Arms down along the legs
6. The children bend down and touch the ground
7. The children stand up straight

Once the children are comfortable with these exercises, they could display them on Parents' Day.

UNIT 7
SEQUENCING

Teaching objectives

- explain the concepts of BEFORE and AFTER
- identify sequencing in daily life activities
- practice the sequence of numbers from 1 to 10

Learning outcomes

The children should be able to:

- use BEFORE and AFTER correctly to talk about daily activities
- sequence numbers between 1 and 10

Teaching materials:

- pictures of various daily activities
- number cards
- beads/marbles

Learning activity

Lesson 1: Sequencing daily activities

Start this lesson with a story or talk to the children about their activities before they come to school or when they are back home after school.

1. Bring a set of pictures showing a particular action, for example, a sequence in which a boy gets ready for school. Do some picture reading.
2. Introduce the words BEFORE and AFTER.
3. Ask one child to recite the poem, and to sequence the actions:

   Jack and Jill
   Went up the hill
   To fetch a pail of water.
   Jack fell down
   And broke his crown
   And Jill came tumbling after.

Ask questions such as:

- Did Jack break his crown before going up the hill?
- Did Jack tumble before/after Jill??
- Did Jack and Jill go up the hill before Jill came tumbling down?

4. A simple, small activity (e.g. making a sandwich) is useful. The children see the steps needed to make the sandwich. They then sequence the steps. Ask questions like:
   - Is the butter spread before or after slicing the bread?
   - Is the cheese slice put on the sandwich after spreading the mashed eggs or before?
5. A discussion about daily activities can lead to questions such as:
   - Do you have breakfast before brushing your teeth?
   - Do you get into your night clothes after you get into bed?

Task: Help the children complete the tasks on page 54.

Lesson 2: Sequencing numbers

Give each child a box and some beads and ask them to arrange the beads as shown below with smileys. Child 1 puts one bead in his/her box, child 2, two beads, and so on. Then they put all the boxes in sequence starting from the box containing one bead.

1	2	3	4	5	6	7	8	9	10
☺	☺ ☺	☺ ☺ ☺	☺ ☺ ☺ ☺	☺☺ ☺☺ ☺	☺☺ ☺☺ ☺☺	☺☺ ☺☺ ☺☺ ☺	☺☺☺ ☺☺☺ ☺☺	☺☺☺ ☺☺☺ ☺☺☺	☺☺☺ ☺☺☺ ☺☺☺ ☺

Ask questions which they can answer by looking at the arrangement. For example, ask if 5 comes before 6, or what comes after 7.

Here is a simple game which is useful. Hand out large, preferably laminated number cards to children, ranging from 1 to 9. The cards should be illustrated with the corresponding number of dots, stars or Smiley faces. Assign a number to each child. Ask them to arrange themselves in an ascending or descending order when you say GO!

Task: Ask the children to attempt tasks on pages 55 and 56.

Additional resources:

At the end of the guide are additional worksheets 15, 16, 17, and 18. Use them for reinforcement.

UNIT 8
REVIEW AND ASSESS

Teaching objectives

- to assess learning of concepts taught

Learning outcomes

The children should be able to:

- recognize living and non-living things in their surroundings
- identify objects by their characteristic features
- associate living creatures with their respective offspring, habitat or food
- recognize primary colours and associate them with common objects
- identify opposites
- identify and match objects and shapes
- distinguish between straight and curved lines
- recognize, match, and count numerals 1 to 10
- be able to write the numerals from 1 to 10

Teaching materials

- worksheets

Lesson 1:

The review and assessment can take a couple of days depending on the school's schedule for final assessment. Use worksheets that are simple and easy to understand and which test only the knowledge, understanding, and application of what has been taught throughout the year. The worksheets at the end of the book may be used, or additional worksheets can be designed for this purpose. As stated previously, assessment does not necessarily have to take place at the end of term; it can take place throughout the year.

Use the last two pages of the book to devlop better reading and writing skills and good social skills.

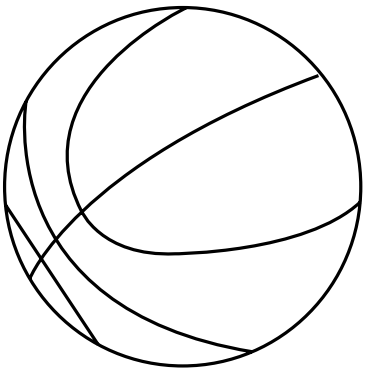
An interactive game could be designed incorporating all the concepts taught. It could spread over two periods.

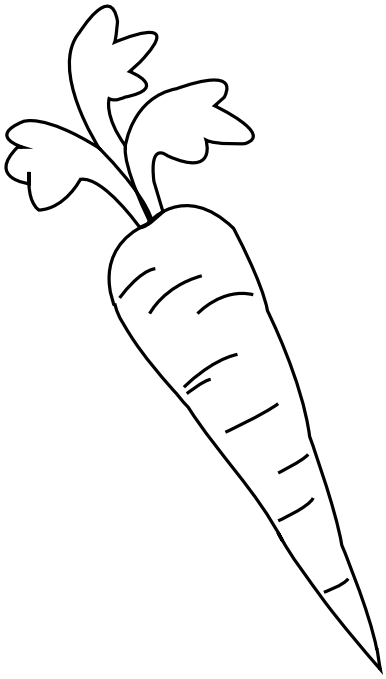
Additional resources:

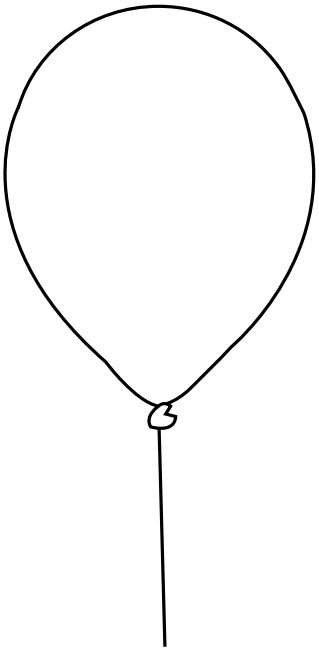
At the end of the guide are additional worksheets 19 and 20. Use them for reinforcement.

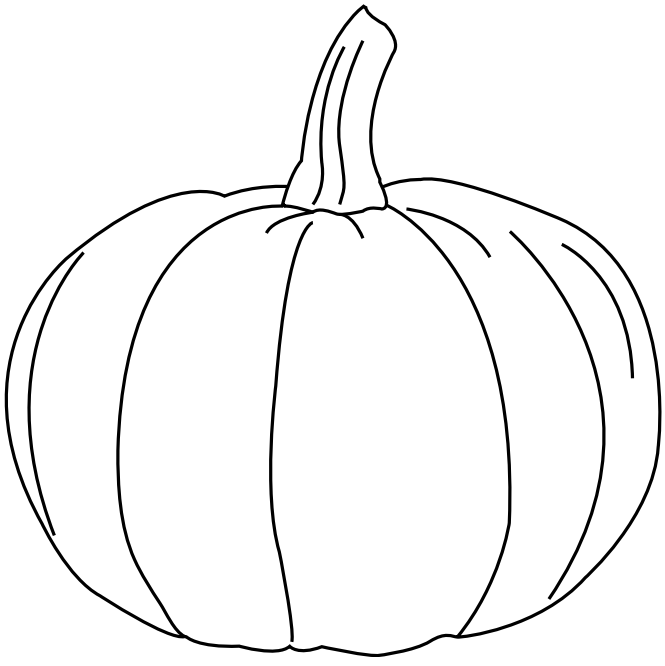
Worksheet 1

Colour these orange.



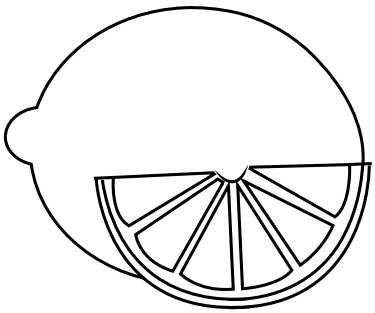


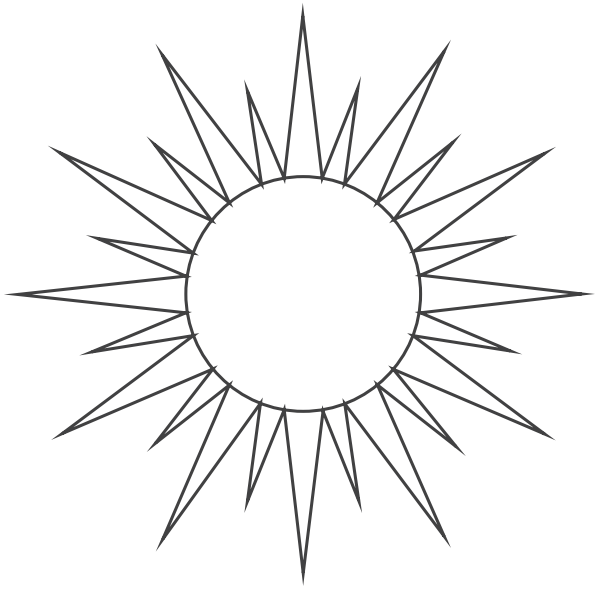


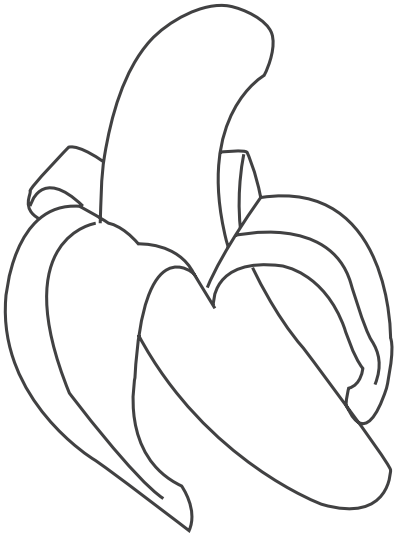


Worksheet 2

Colour these yellow.







Worksheet 3

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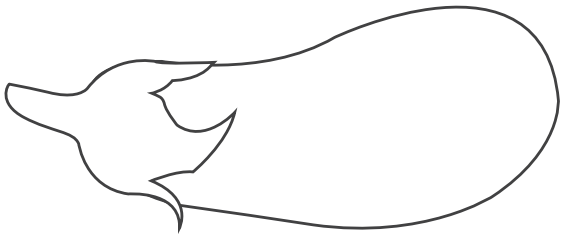

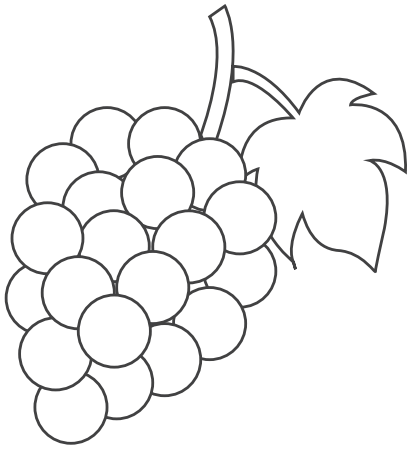

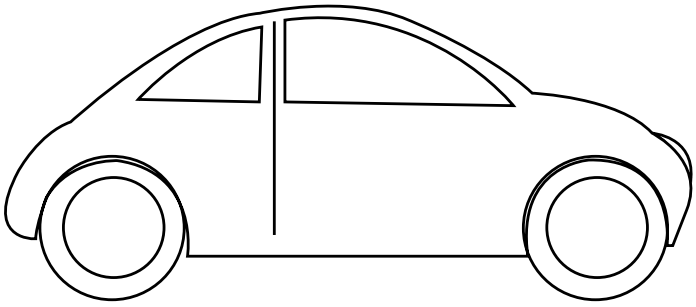

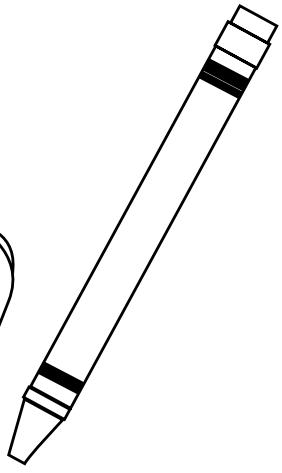

Worksheet 4

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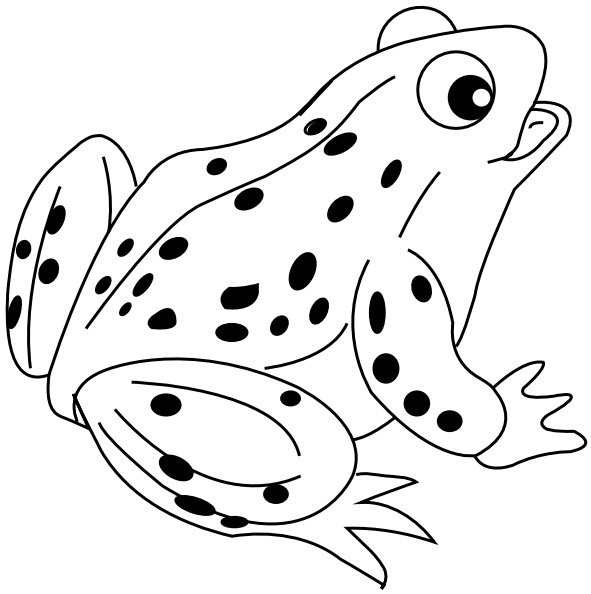
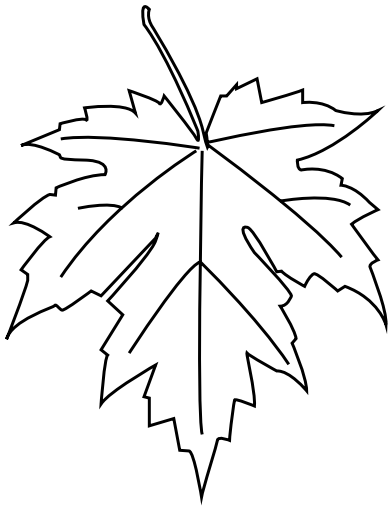
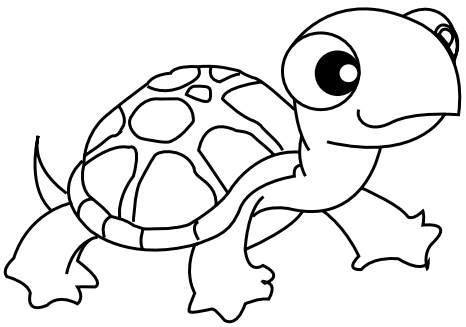
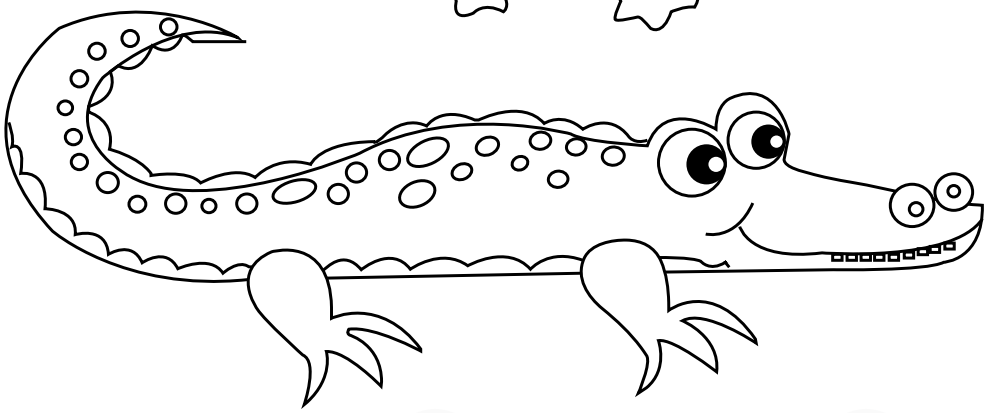


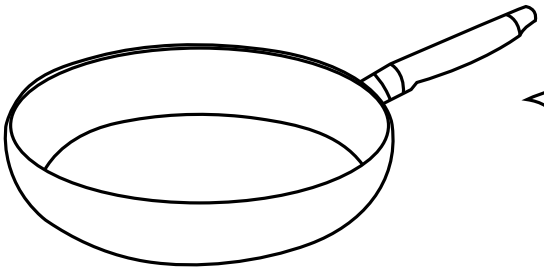


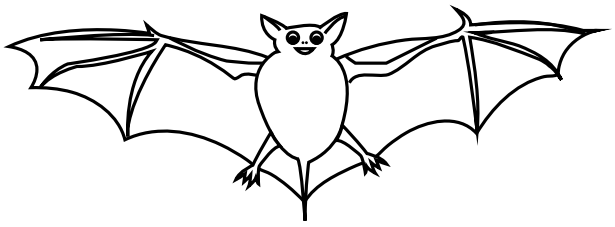


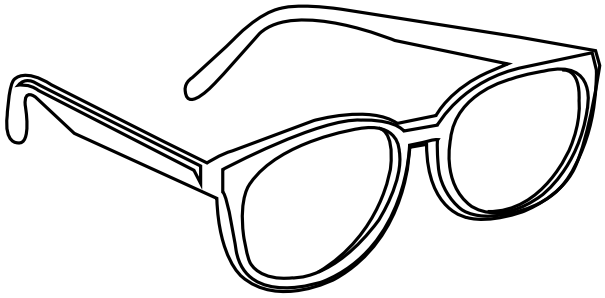


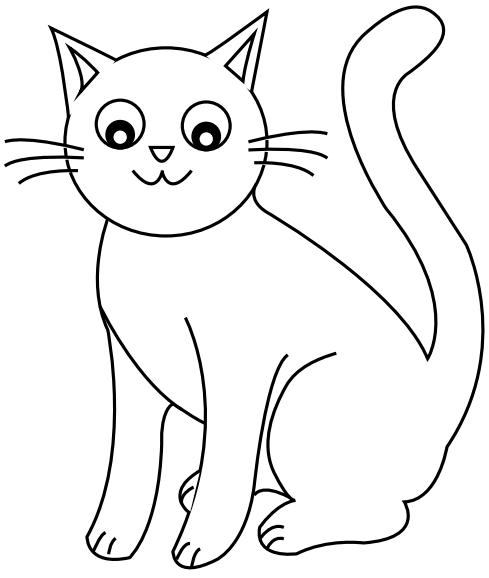
Worksheet 5

Colour these black.



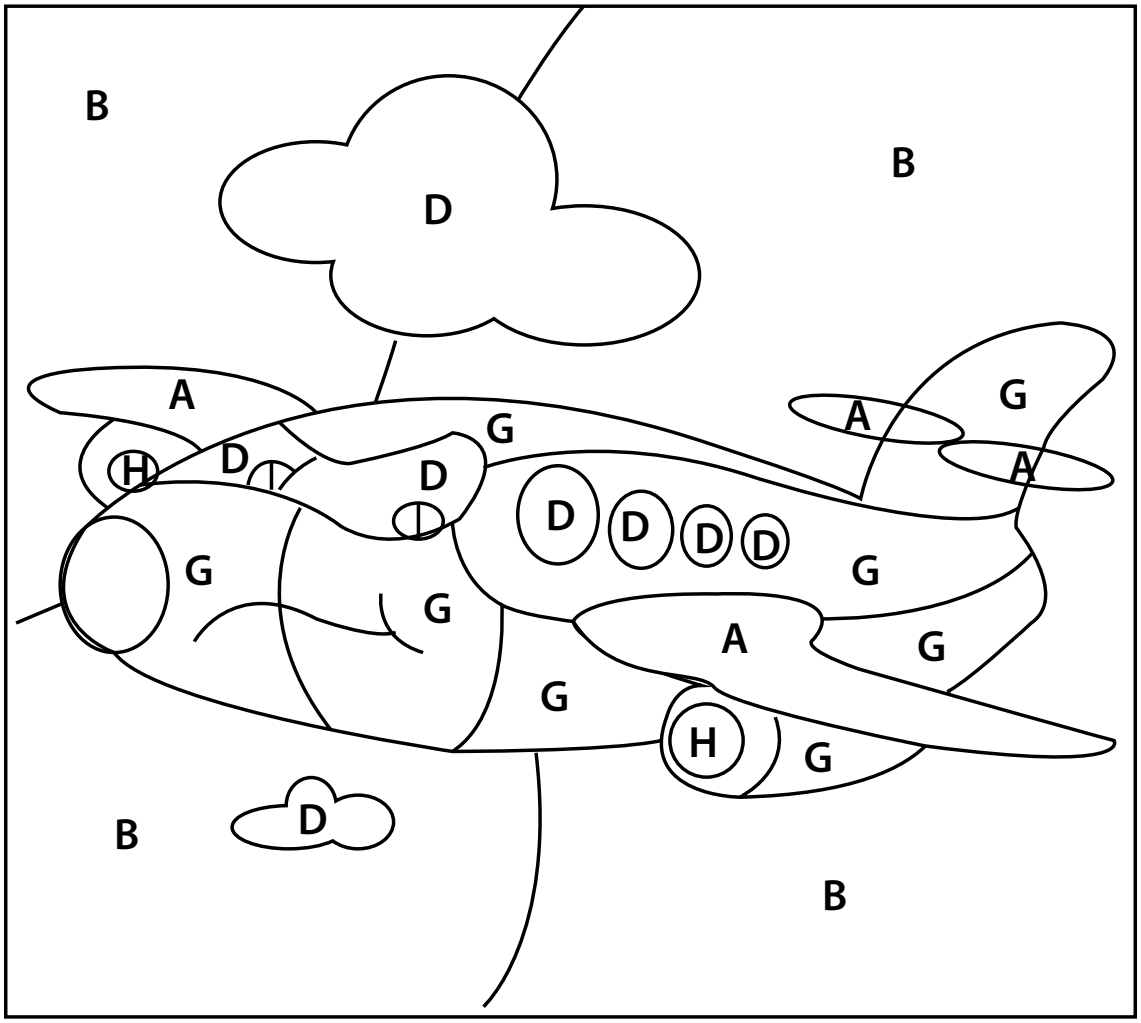






Worksheet 6

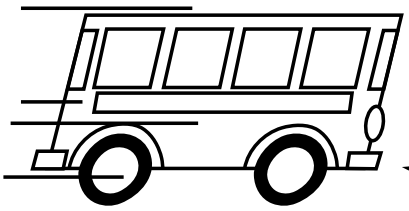
Match the colours with the alphabets. Colour as given.



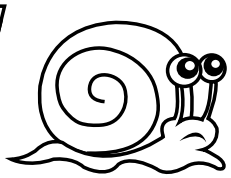
A	Red	F	Orange	H	Brown
C	Green	E	Pink	I	Black
B	Blue	G	Yellow	D	White

Worksheet 7

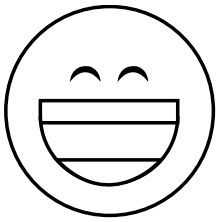
List of opposites



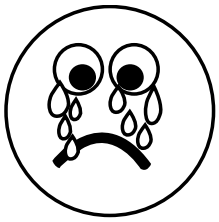
fast



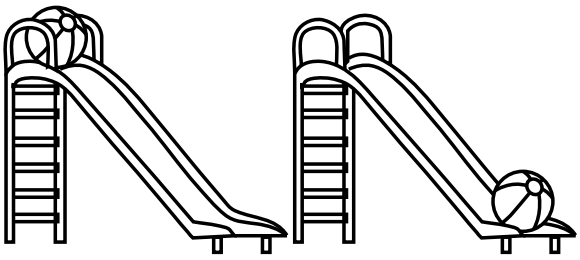
slow



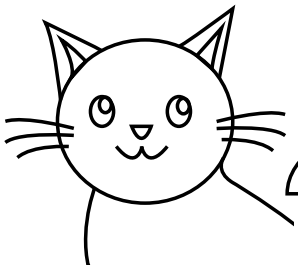
laugh



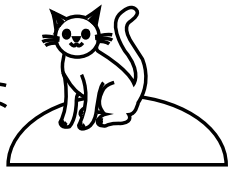
cry



top bottom

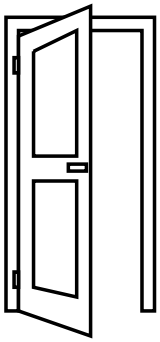


near

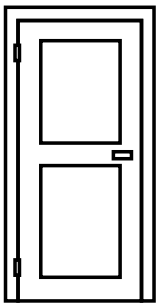


far

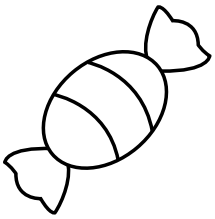
tall short



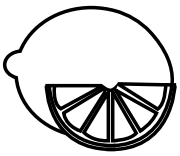
open



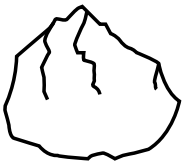
closed



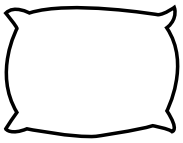
sweet



sour



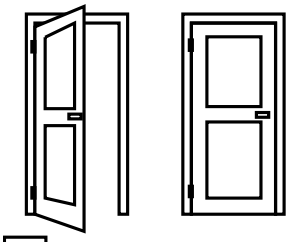
hard



soft

Worksheet 8

Put a ✓ in the box if the set has opposite meaning.



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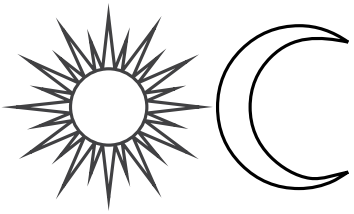

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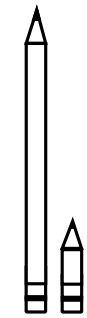

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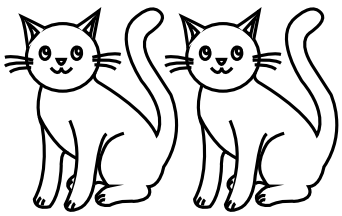

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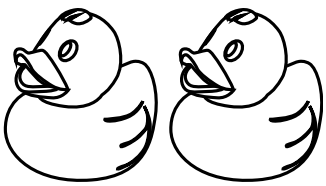

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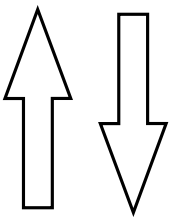

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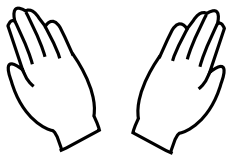

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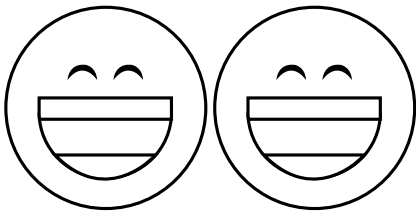

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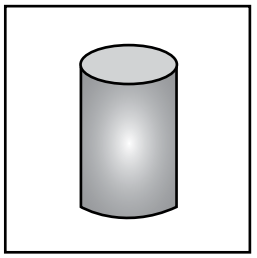
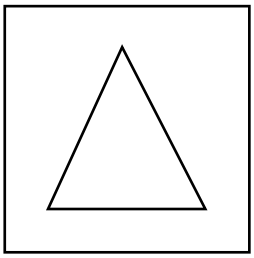
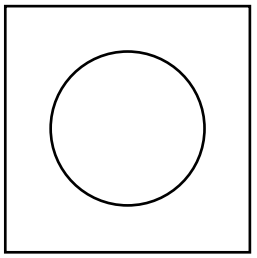
Worksheet 9

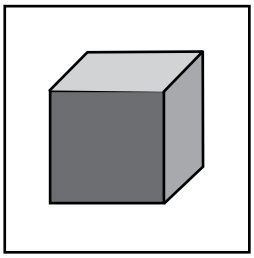
In the empty spaces, draw the shapes as shown.

3D Shapes

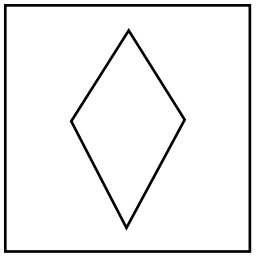


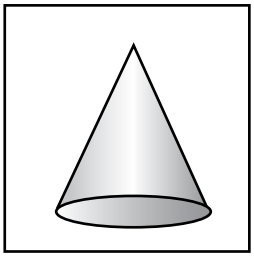


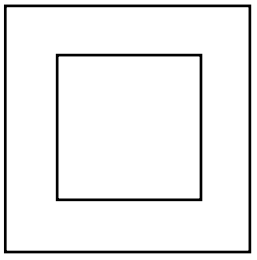


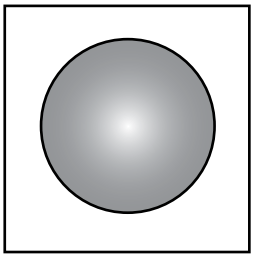


2D Shapes



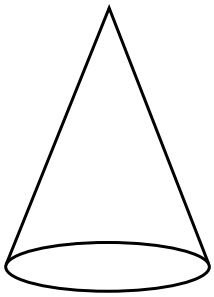


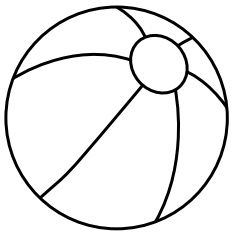


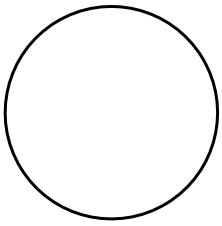


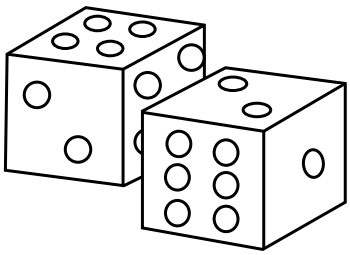
Worksheet 10

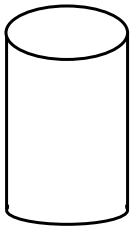
Match the 3D shapes with the objects.

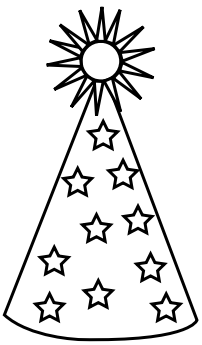


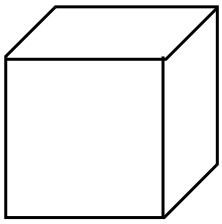


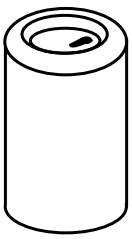






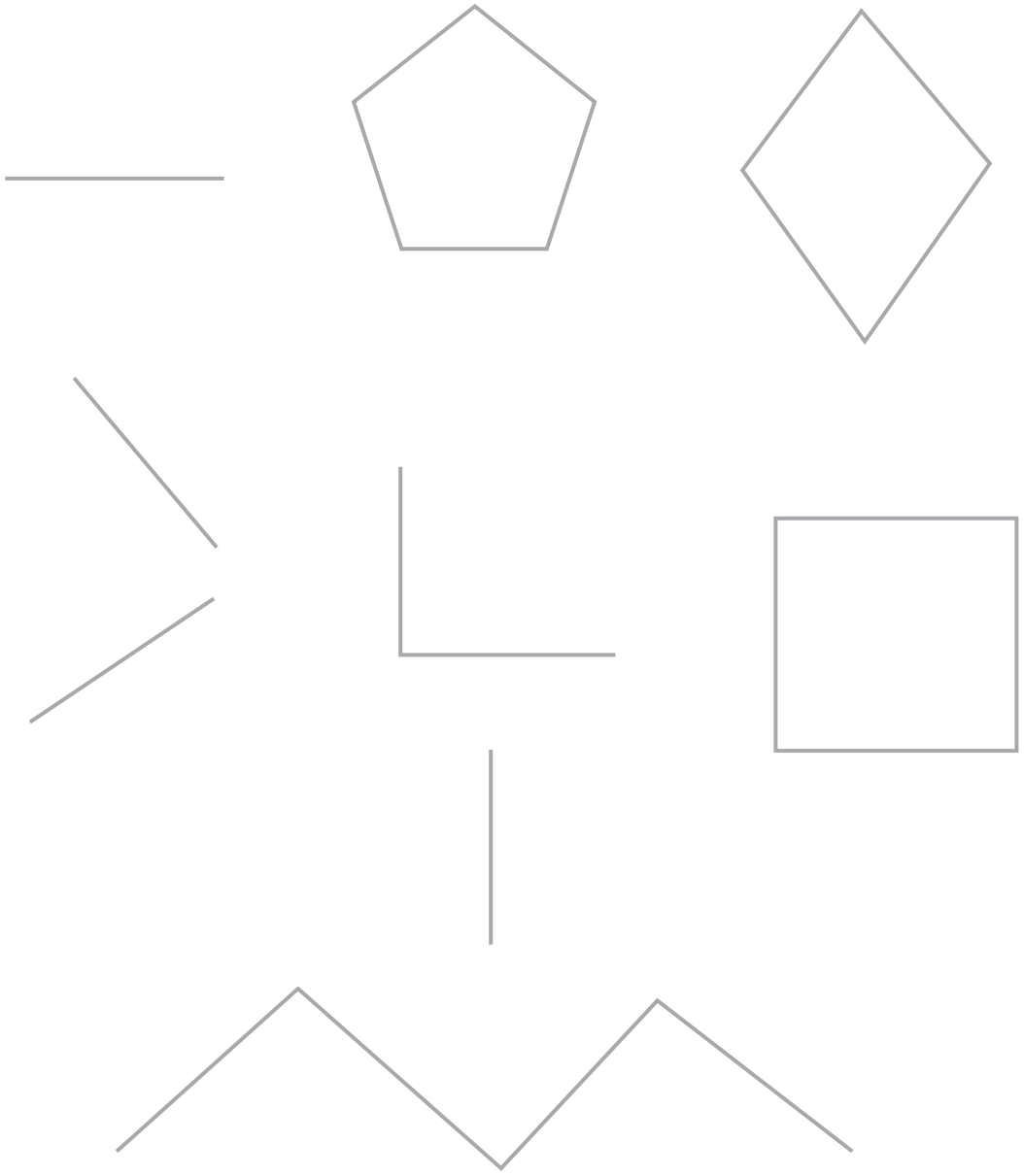






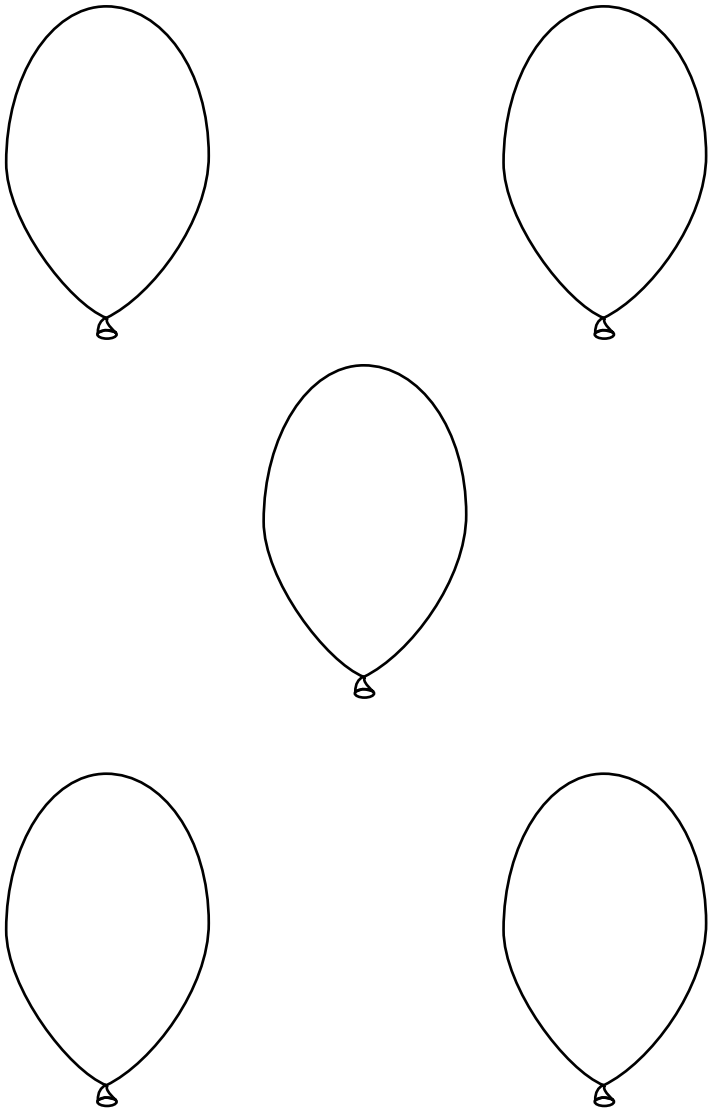
Worksheet 11

Trace the given lines and shapes.



Worksheet 12

Colour each balloon a different colour.
Draw a string in the same colour.

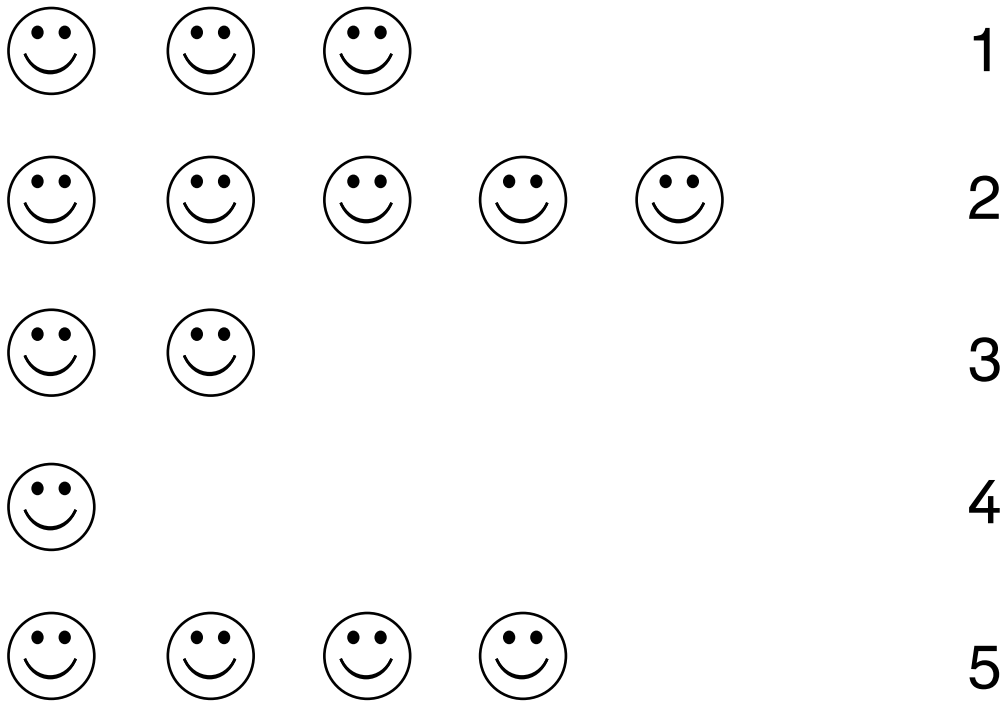


Worksheet 13

Count the number of stars in each row and say it loud.

Worksheet 14

Count the smileys and match with the numbers.



1

2

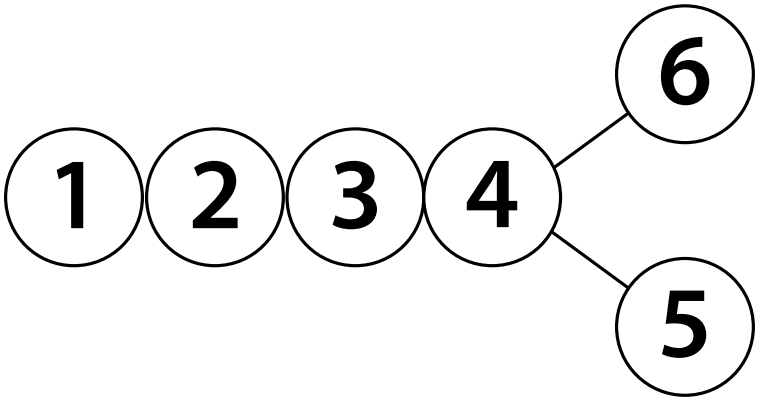
3

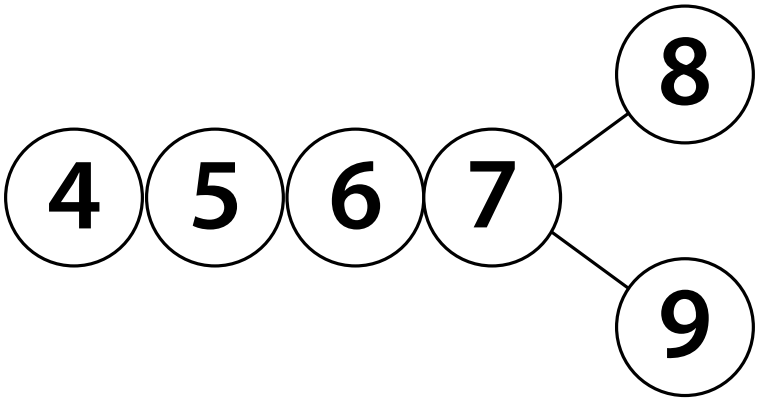
4

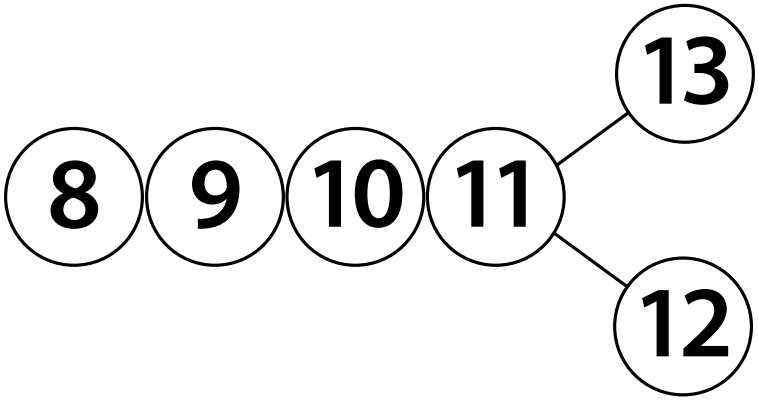
5

Worksheet 15

Colour the number that comes next.

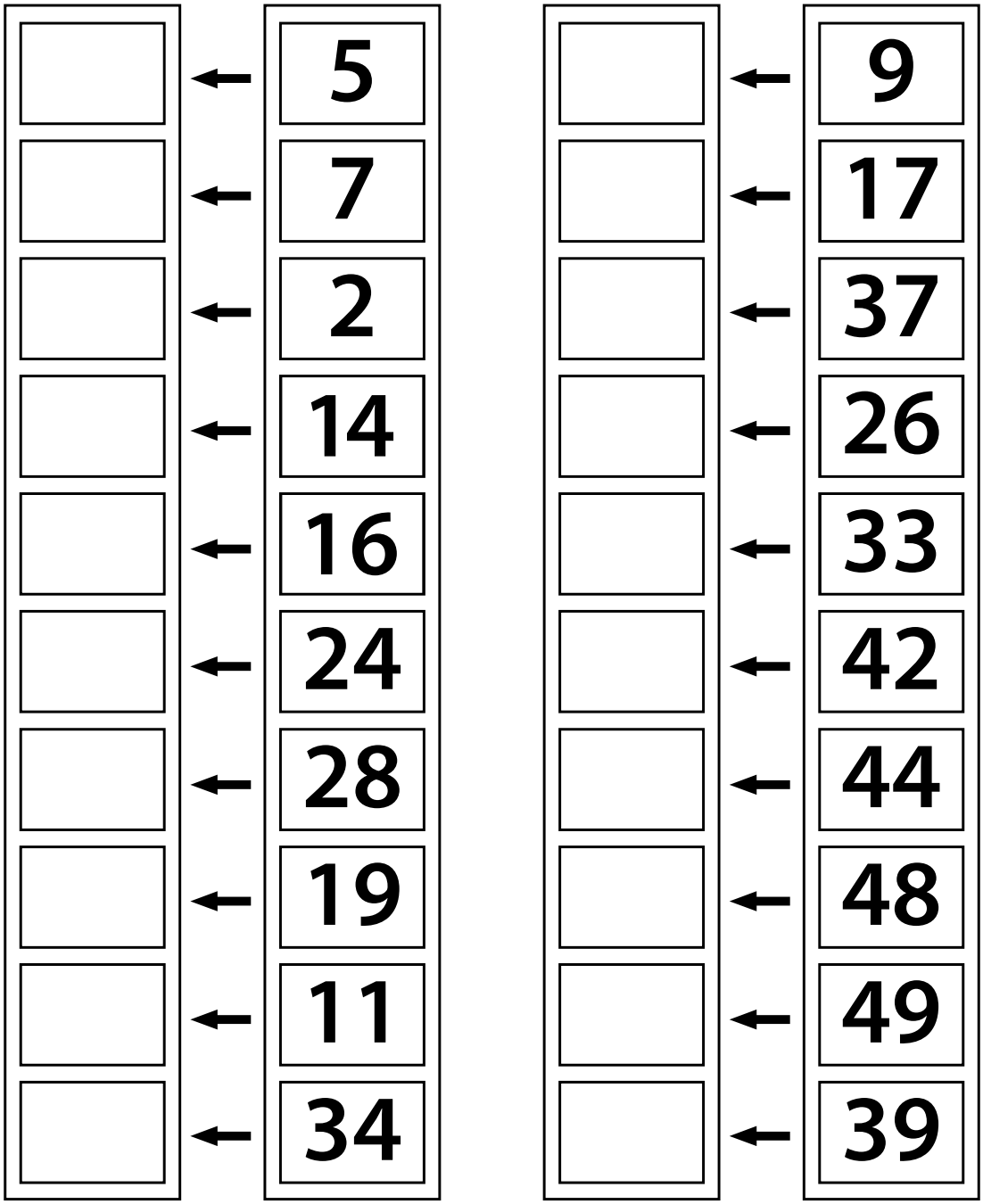






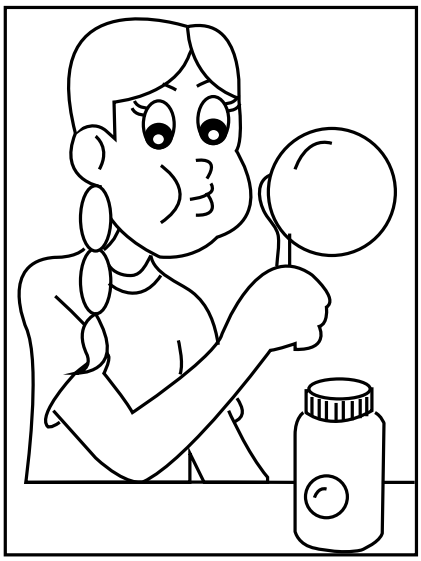
Worksheet 16

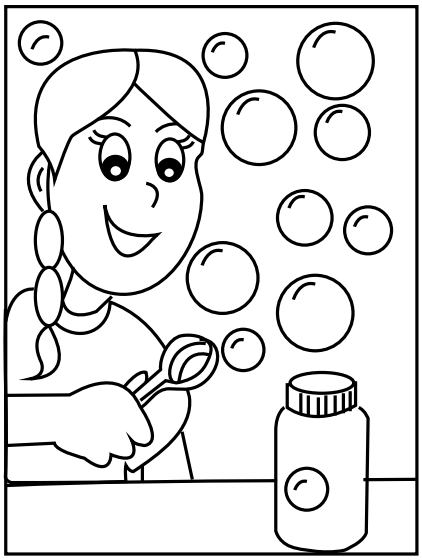
Write the number that comes before.

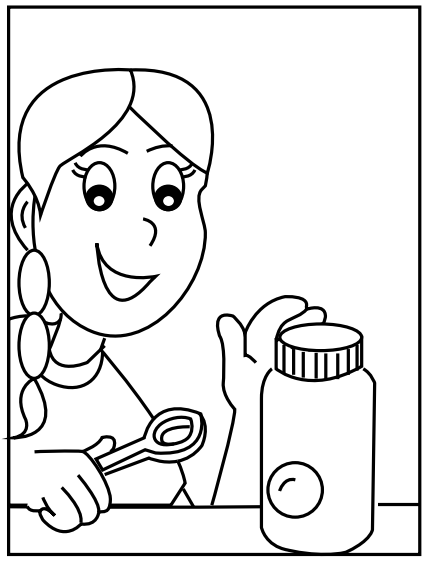


Worksheet 17

Number the pictures according to a sequence.

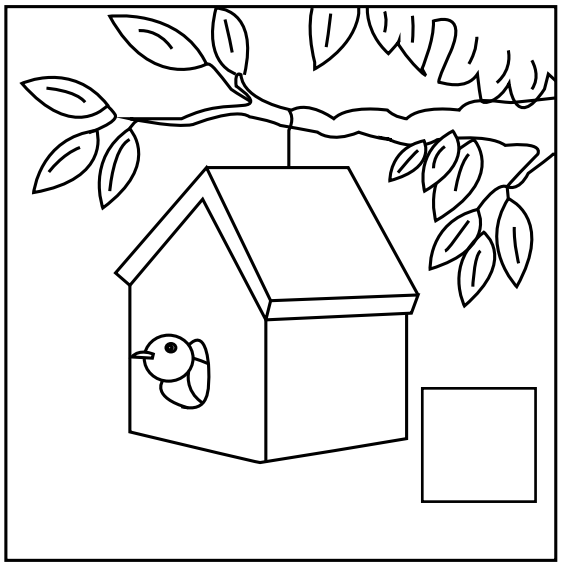


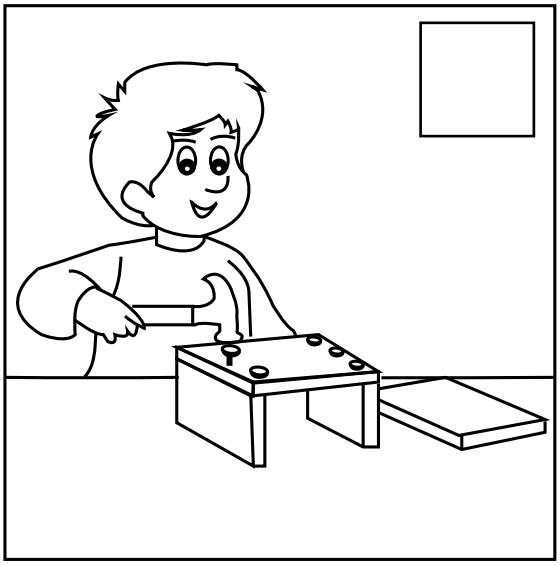


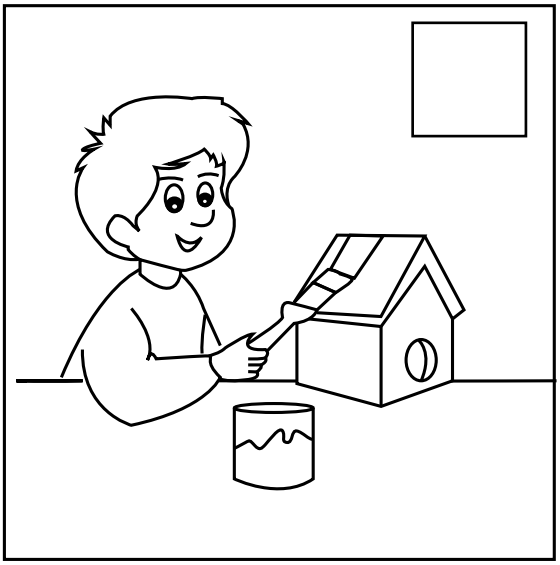


Worksheet 18

Number the pictures according to a sequence.

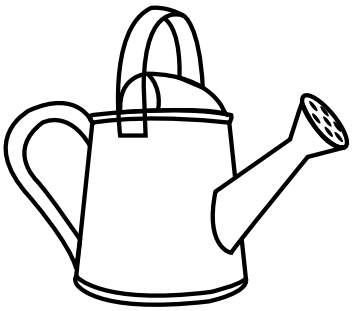


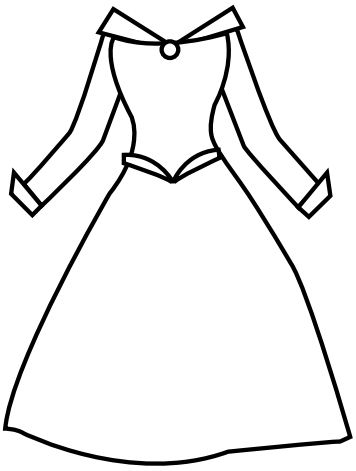


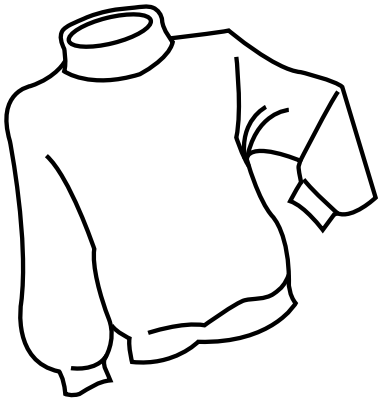


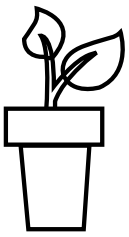
Worksheet 19

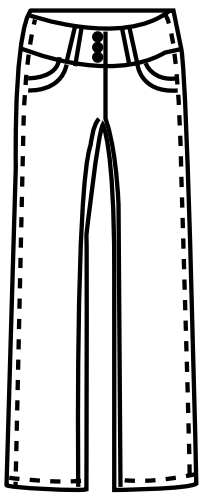
Match the objects.





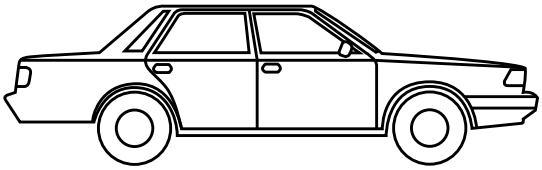






Worksheet 20

Put a ✓ in the box for the objects that have circles in them.



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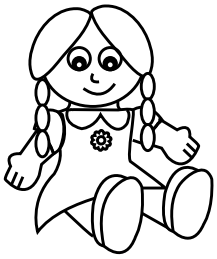

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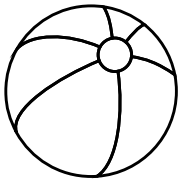

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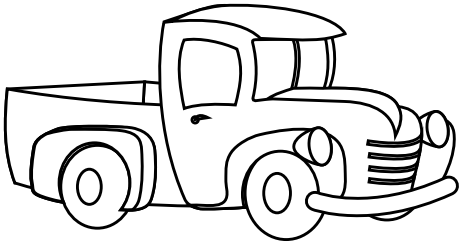

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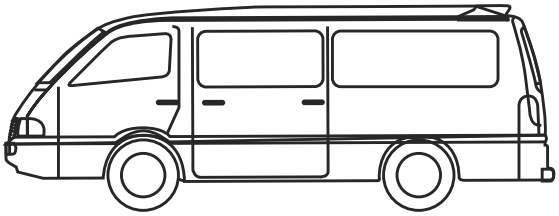

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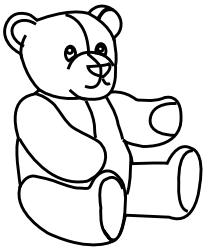

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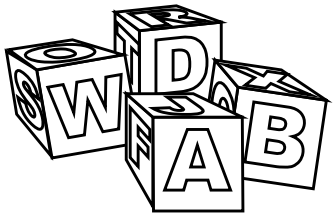

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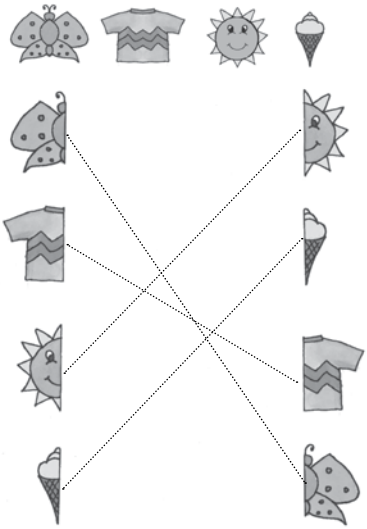
Solved Exercises: Introductory Book 1

Page 2

Match the clothes.

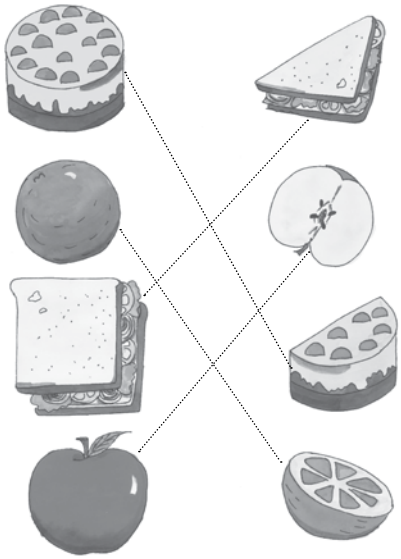
Page 3

Match identical halves.



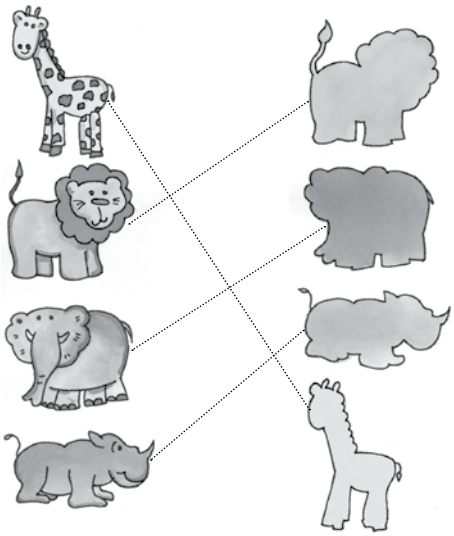
Page 4

Match the halves to the whole shape.



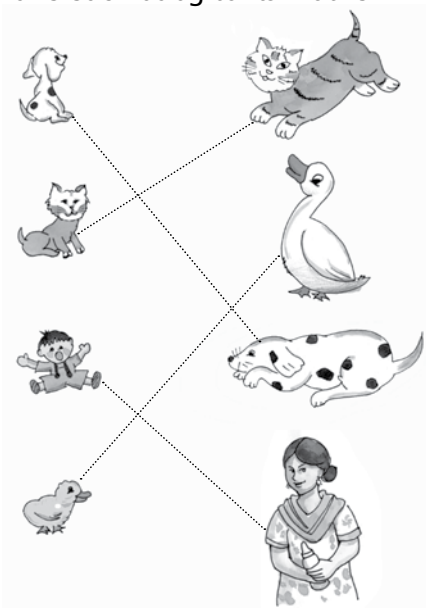
Page 5

Match each animal to its shadow.



Page 6

Take each baby to its mother.



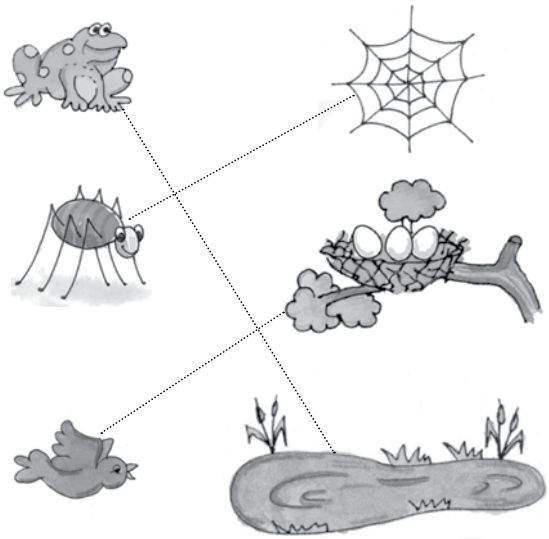
Page 7

Match what you need …

…to water the plant.
…to play in the field.
…to go fishing.
…to brush your teeth.

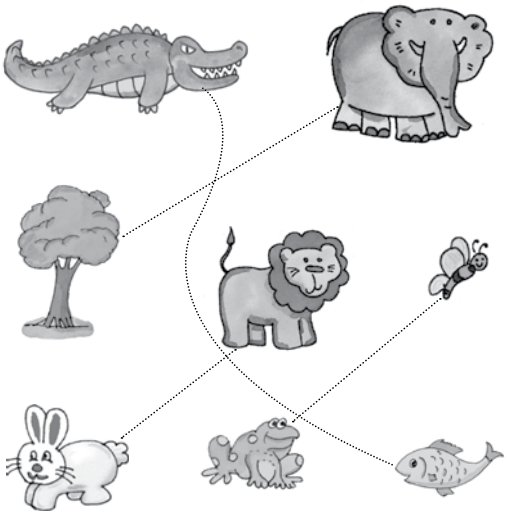
Page 8

I love my home.
Take each animal to its home.



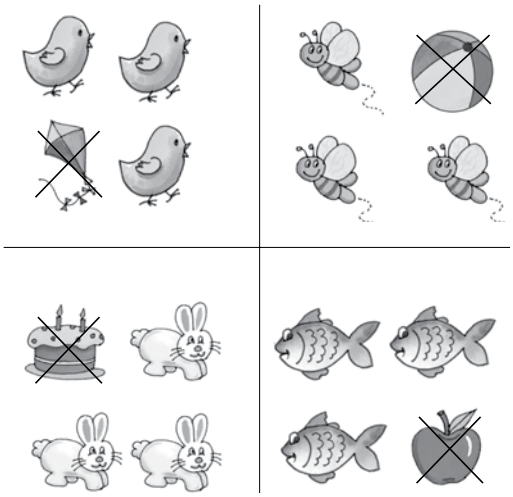
Page 9

Match each animal to its food.



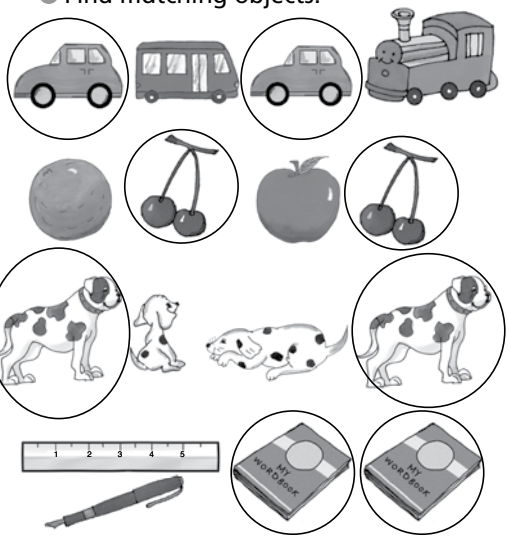
Page 10

Cross (✗) the odd one out.



Page 11

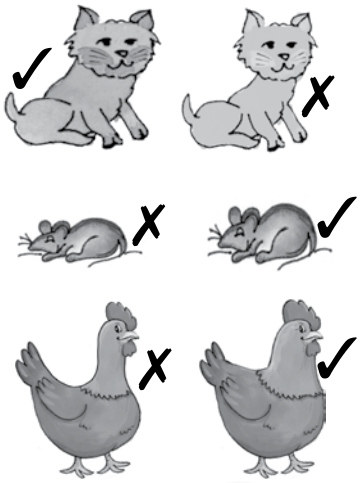
Find matching objects.



Page 19

FAT and THIN

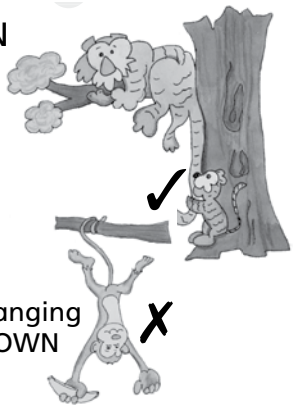
Tick (✔) the FAT one.
Cross (✗) the THIN one.



Page 20

UP and DOWN

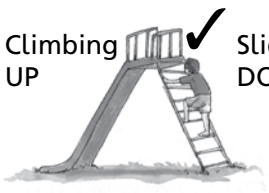
Tick (✔) the one that is UP.
Cross (✗) the one that is DOWN.



Hanging UP

Hanging DOWN

Climbing UP



Sliding DOWN

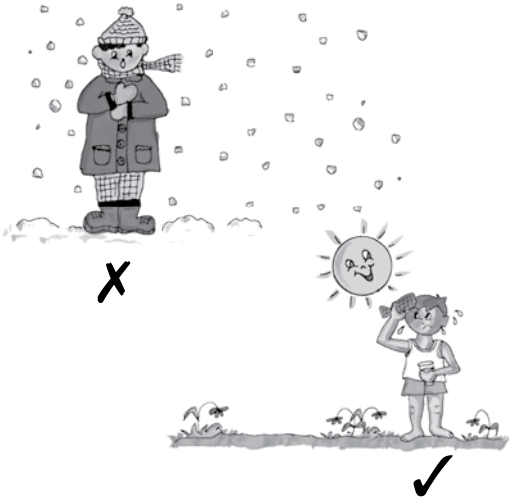
Page 21

- The birds are UP on the roof.
  Bring them DOWN to the ground.

Page 23

HOT and COLD

- Tick (✔) the boy who is feeling HOT.
  Cross (✗) the boy who is feeling COLD.



Page 24

HOT and COLD

- Tick (✔) the HOT objects.
  Cross (✗) the COLD objects.

Page 25

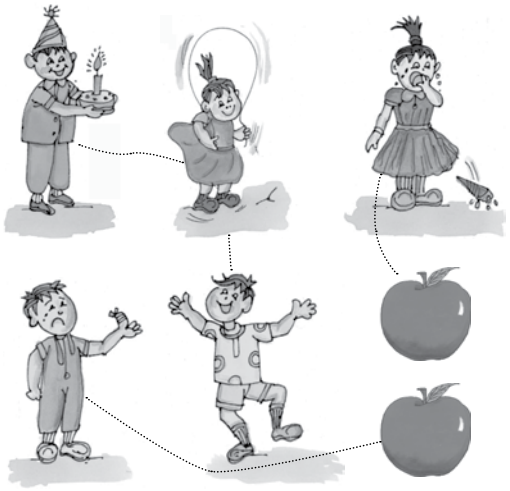
MAZE

- Take Hina to the ice creams. She must avoid all the HOT items.

Page 26

HAPPY and SAD

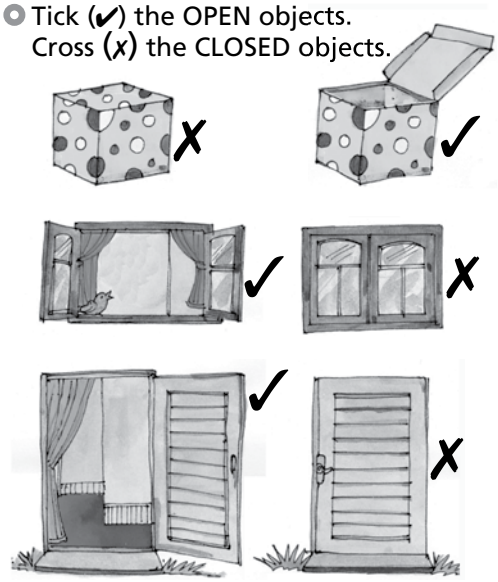
Draw lines to join the HAPPY children.
Draw lines to give each SAD child an apple.



Page 27

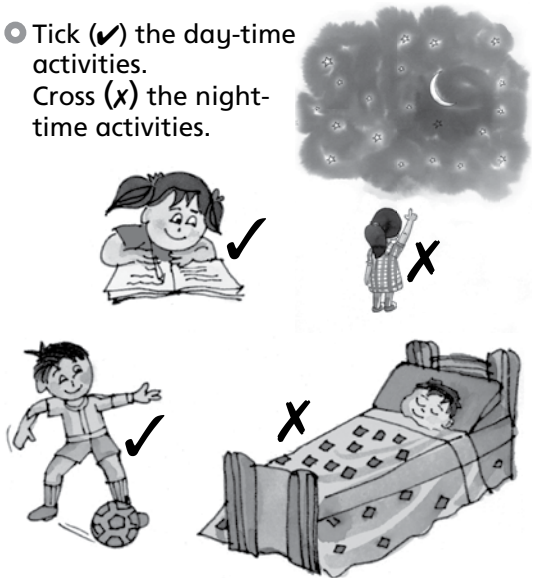
OPEN and CLOSED

Tick (✔) the OPEN objects.
Cross (✗) the CLOSED objects.



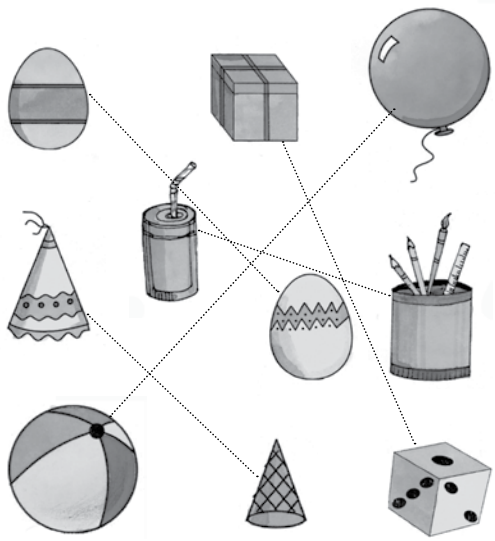
Page 30

Tick (✔) the day-time activities.
Cross (✗) the night-time activities.



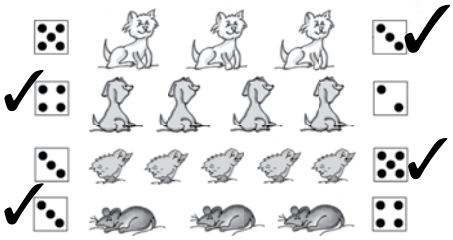
Page 34

Join the objects that have the same shape.



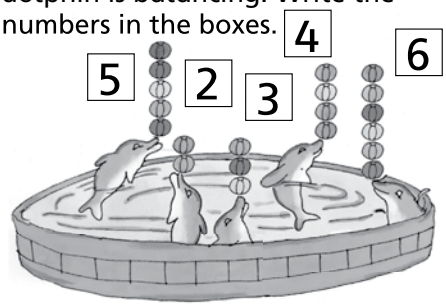
Page 45

- Recognize the numbers 1, 2, 3, 4 and 5. Count how many there are of each animal and then tick (✔) the correct box.



Page 47

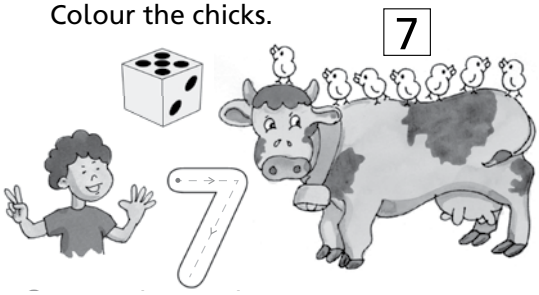
- Recognize 1, 2, 3, 4, 5 and 6. Count the number of balls each dolphin is balancing. Write the numbers in the boxes.



Page 48

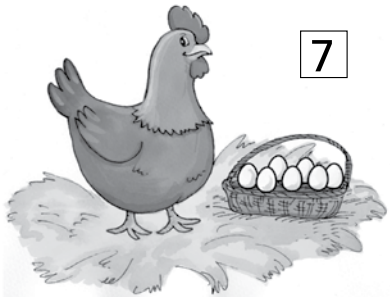
SEVEN

- Count the chicks and write the number in the box. Colour the chicks.



Page 49

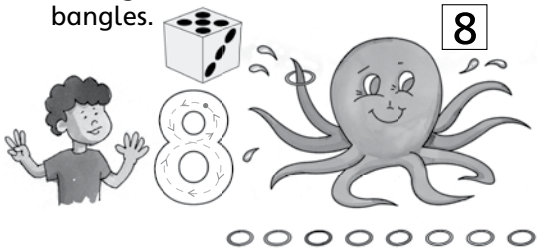
- Recognize the numbers 1, 2, 3, 4, 5, 6, and 7. Count the eggs and write the number in the box.



Page 50

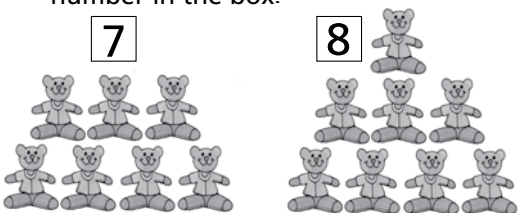
EIGHT

- Count how many arms Octa has. Write the number in the box. Draw a bangle on each arm. Count the bangles.



Page 51

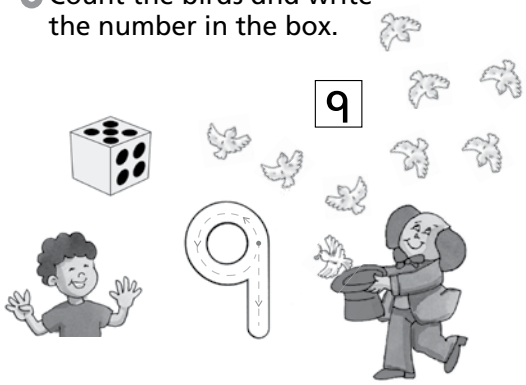
- Recognize the numbers 1, 2, 3, 4, 5, 6, 7 and 8.
  Count the teddies and write the number in the box.



Page 52

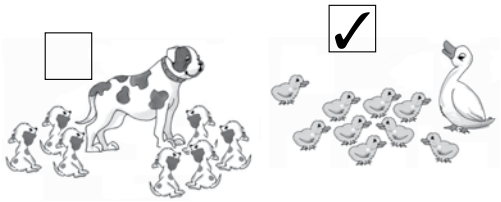
NINE

- Count the birds and write the number in the box.



Page 53

- Recognize the numbers 1, 2, 3, 4, 5, 6, 7, 8 and 9.
  Who has 9 babies, the dog or the duck?
  Tick (✔) in the correct box.



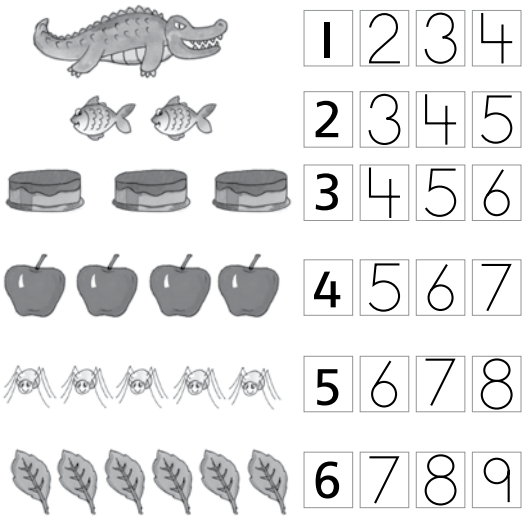
Page 55

Which number comes AFTER?

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

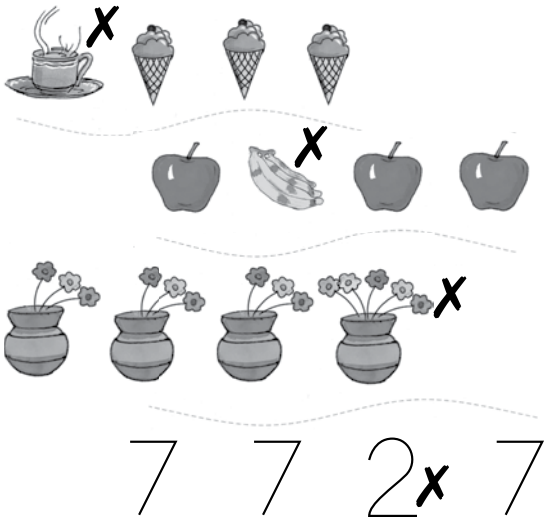
Page 56

Which number comes BEFORE?



Page 61

Put a cross (x) on the odd one out.

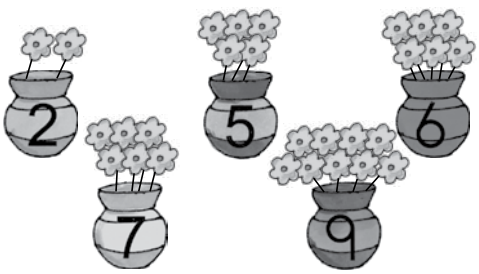


Page 62

Count how many flowers are in the vase and write the answer in the box.

4

In each vase, draw the number of flowers shown on it.



Page 64

- Which animals are hiding in the tree? Match each animal to its food.

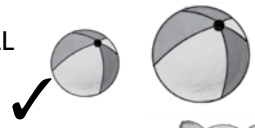
Page 65

Opposites

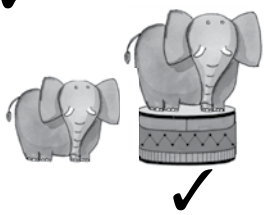
- Tick (✔) the SHORT child.

- Tick (✔) the COLD item.

- Tick (✔) the SMALL ball.



- Tick (✔) the elephant which is UP on the stand.



Page 66

MAZE

- Lead Rohail to the duck.

Page 67

NATURE WALK

- Circle each item in the picture as you find it.