

LOW-COST, NO-COST TEACHING AIDS

MARY ANN DASGUPTA

Illustrator

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A practical guide for Balwadi, Anganwadi, Nursery, Kindergarten and Primary teachers this book gives clearly illustrated, step-by-step instructions for making a wide variety of useful and inexpensive classroom materials out of articles of everyday use. These teaching aids are useful for developing pre-school and primary skills in languages and Mathematics. These are also good for eye-hand control and socialization. A teacher and administrator for over two decades and author/editor of a number of books Mary Ann Dasgupta came to India in 1963 after graduating in Education from the Washington University. Later she acquired her Master's degree from the University of Calcutta. As an Educational Consultant and Managing Trustee of a charitable educational trust Ms Dasgupta devotes most of her time now developing educational resource material for under-privileged children.

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MAKING AND USING TEACHING AIDS

Making teaching aids is an emotionally, intellectually, aesthetically and professionally rewarding experience. It is an act of creation. It is an affirmation — an affirmation that I as a teacher care about the pupils and believe that, with the help of these learning aids, they can learn. It is an act of love.

Teaching aids provide a stimulus for exploration and thinking. With the added input of verbal, personal communication with an adult, interaction and discussion arise...and these are crucial to real, activity-based learning. Adults (and older children) help younger ones to interpret sensory and language experiences, to clarify them and relate them to their previous understandings. Children then learn by blending language with experiences. They learn to think.

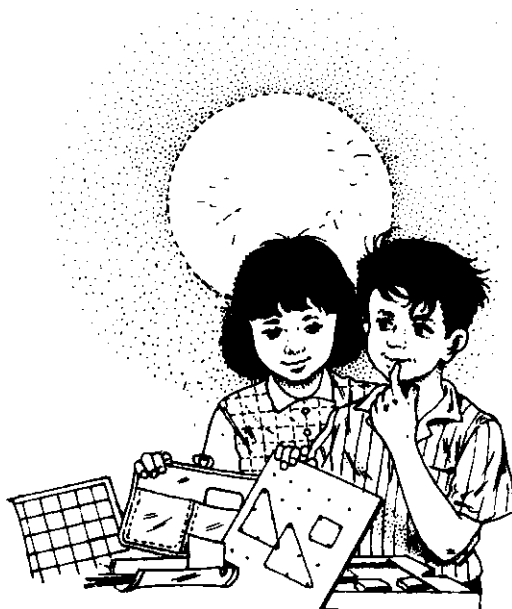
For maximum mental growth and personality development, a child's life needs to be filled with stimulating, encouraging experiences. Appropriate learning materials (teaching aids) help children to develop their innate abilities.

- Who can make these teaching aids?
- Teachers, anganwadi / balwadi workers.
- Teacher-trainees and workshop/refresher course participants.
- Older school students...to fulfil the community service requirements of their syllabus.
- Interested parents and other community volunteers.
- Residents of old-age homes, jail inmates, and others.

MARY ANN DASGUPTA

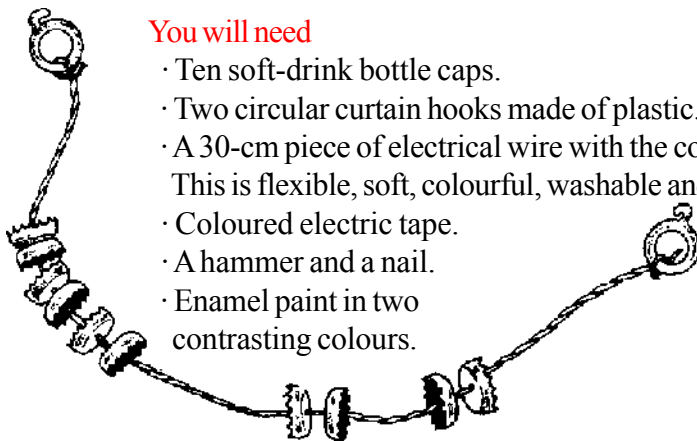
Section 1

BASIC MATHEMATICS



1 to 10 COUNTING STRINGS

- Counting 1 to 10, and by 10's to 100
- Adding
- Subtracting
- Measuring
- Comparing Lengths
- Counting by 5's



You will need

- Ten soft-drink bottle caps.
- Two circular curtain hooks made of plastic.
- A 30-cm piece of electrical wire with the copper encased in a plastic covering. This is flexible, soft, colourful, washable and unbreakable!
- Coloured electric tape.
- A hammer and a nail.
- Enamel paint in two contrasting colours.

How to make

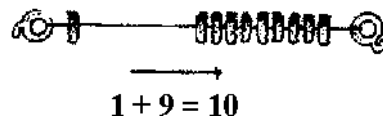
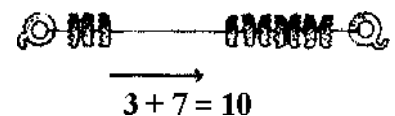
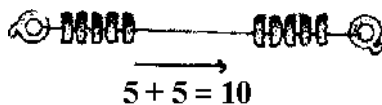
- Paint 5 caps in one colour and 5 in another.
- When dry, punch a hole in the centre of each with a hammer and nail (see instructions for Tin Catch-Catch).
- Loop-knot one end of the wire round a hook and fix the end with several rounds of electrician's tape.
- String 5 caps of one colour and 5 of another. Place them alternately back-to-back and face-to-face so that they do not overlap and can be seen separately. Leave some extra space to facilitate movement of the caps to the left or right. This enables a child to see easily that $5 + 2 = 7$ or $10 - 2 = 8$.
- Fix the other end of the wire to the second hook. The hooks are especially important for joining additional 10-strings to make a chain of 20, 30, etc. With 10 such strings, number work can be done up to 100 besides enabling one to count in groups of 5's and 10's.

How to use

Count to 10

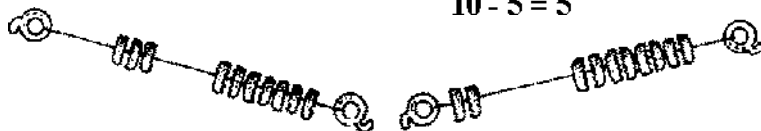
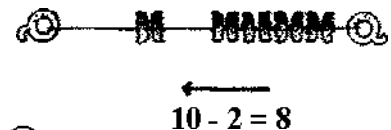
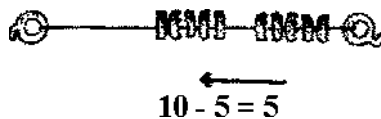
- Step-by-step addition:

Slide the caps to the right to show



- **Subtraction:**

Slide the caps to the left to show



Note: Teacher can demonstrate addition by holding the string in both hands and simply tilting the string to the right, or tilting the other way to show subtraction

For individual practice, young children can put the circles of the two hooks on their big toes while sitting on the ground. This makes it easy to move the caps.

Variation

Use 10 strings linked together to measure a pupil's height or the length of a bench or a table.

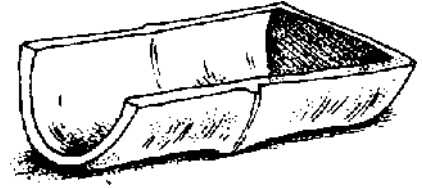


BAMBOO SPINDLES or SORTING TRAYS

· Counting · Sorting · Logical Thinking

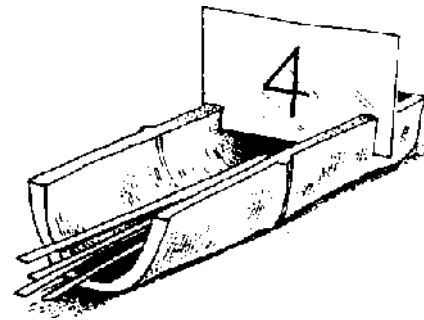
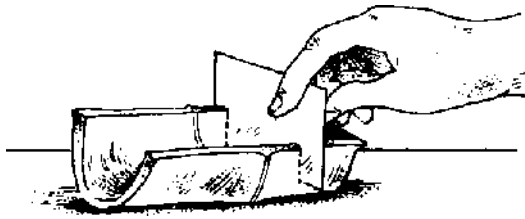
You will need

- Five lengths of green bamboo split in half to make 10 'trays' with each piece being about 20 cm long.
- Fifty-five slim bamboo stems about the size of a new pencil.
- Sets of sorting/instruction cards made from the back of old visiting cards, or the inside of cigarette packs, or the unused portion of a postcard, etc.



How to make

Cut a slit as shown in the picture so that the sorting/instruction cards can be inserted. When the bamboo is fresh, it is easy to cut.



How to use

Suggested card sets:

- Ten trays:

Sets of numbers 1 to 10 in English and local language.

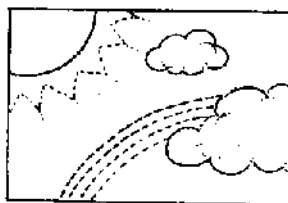
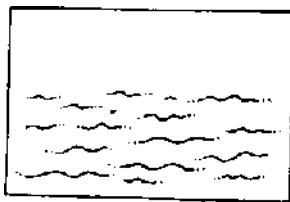
Names of numbers 1 to 10 in local language only.

Five or more trays:

Paint or paste a patch of different colours on each card. Then make a collection of similarly-coloured small objects or pieces of paper for the children to sort.

Three trays:

Collect small pictures of different living beings that can move in water, in sky and on the land. Try to include pictures of fishermen, pilots and farmers, too. Where should the frog be placed? Discuss.



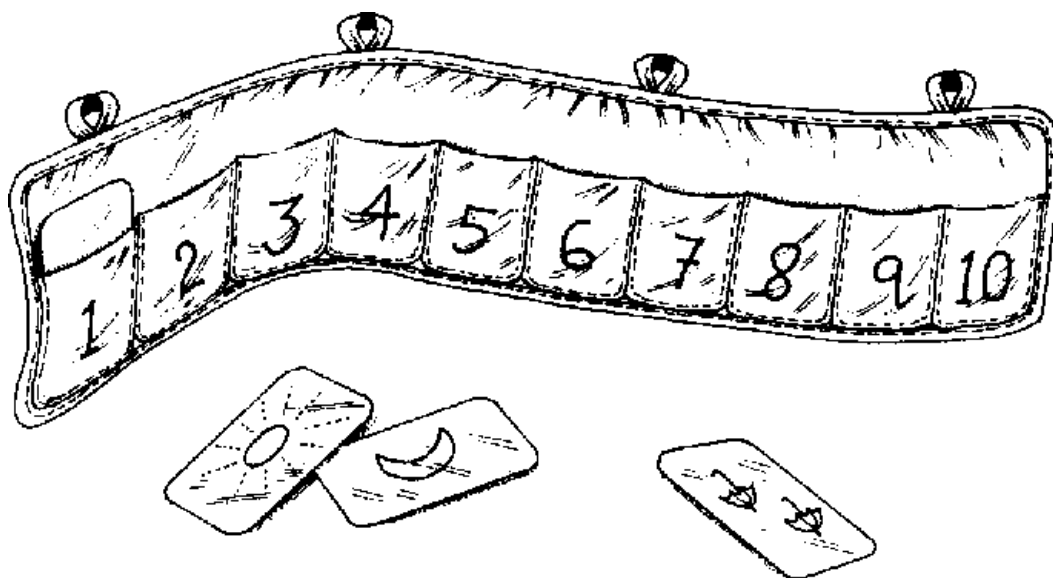
Two trays:

Collect small pictures of human beings or animals and their young ones, fruits or vegetables, wild or domestic animals, living or non-living beings, etc. Which picture should be placed in which tray? Discuss.



NUMBER POCKETS

· Counting 1 to 10 · Vocabulary Development



You will need

- A pack of old playing cards or the back of old greeting cards cut to size.
- Simple line drawings of common objects drawn on the greeting cards or stapled / pasted to the playing cards.
- A piece of plain post-office type of marking cloth upon which a strip of bright coloured cloth is sewn. This strip is then stitched vertically into in pockets. The numbers 1 to 10 are either marked or embroidered on the pockets. Loops are sewn along the top, so that the cloth can be hung up in front of the class.

How to use

- Show the pictures. Name the objects. Talk about them. Count them.
- Keep the cards in a stack with the picture side facing downwards. Ask a child to pick up a card, count the objects, say the name and number, and place it in the pocket marked with that number.
- Encourage the child to speak in sentences; for example, "I have 5 red balloons. I will put them in the pocket numbered 5."
- The pockets can be filled one by one in an orderly manner. For example, the child with the card showing 1 house or 1 egg or 1 car stands up first, speaks out his/her sentence and puts the card in the pocket numbered 1. Then the child with the card having 2 eyes or 2 slippers or 2 socks follows the same procedure till all the pockets are filled.
- The teacher claps his/her hands a certain number of times. On 4 claps, the child who runs first to place his card for 4 in the right pocket, i.e. pocket numbered 4, is declared the winner.

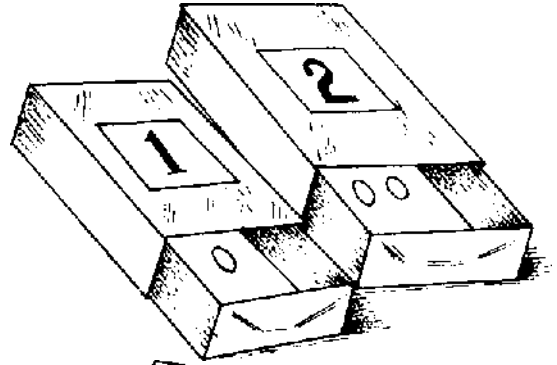
Courtesy- Learning Tree

MATCHBOX BINDI 1 to 10

· Counting 1 to 10 · Reading 1 to 10

You will need

- Ten empty matchboxes, of equal size.
- Strips of silver paper from powdered milk/coffee/cigarette packets.
- Fevicol.
- White paper (like the inside of old envelopes, for instance).
- Fifty-five bright red, stick-on bindis of the size of the following dot:
- A black marker pen.
- Ten self-sticking, blank price-tag labels.

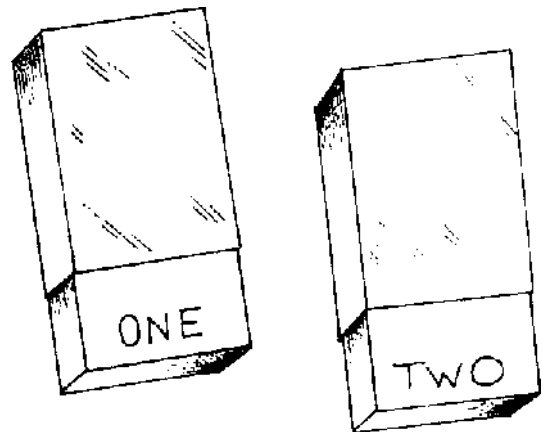
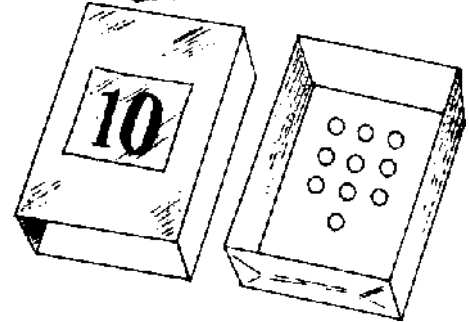


How to make

Paste a strip of silver paper around each lid of the matchboxes. Be careful to leave both ends open. Stick a label or piece of white paper on the top of each of these lids and write numbers 1 to 10.

Paste a piece of white paper inside each tray so that the red bindis show up better. Stick the bindis inside the trays as shown.

On the back of each tray, write the numbers 1 to 10 in words.



How to use

· One by one each tray is pushed into its respective lid. Each lid is then shown to the children to point out the number labels thus, 'This is number 1. This is number 2.' and so forth.

The children can be asked to put up as many fingers as the number that is pointed out.

Ask the children to open their matchboxes by pushing out the trays to help in saying out the number of bindis stuck on the trays. They will say, "1) I see 1 red bindi. 2) I see 2 red bindis," and so on.

· Mix up the trays on the table or on the floor. Ask the children to arrange them 1 to 10 in ascending order and also 10 to 1 in descending order.

· Arrange the trays in the numerical order of 1 to 10. Mix up the lids. Ask a child to place the lid numbered 1 against the tray with 1 bindi. The same is done with each successive number.

· Mix up all the lids and trays. Ask each child to provide the lid numbered 1 for the tray numbered 1, and so on till the end.

· Point out the name for each number written on the bottom of the tray. Arrange in order according to the names. The child can be asked to match the names with the numbers on the lids.

Note: Children are encouraged to find more ways of matching and arranging numbers. Silver paper is used because it is both attractive as well as durable.



TOSS and COUNT

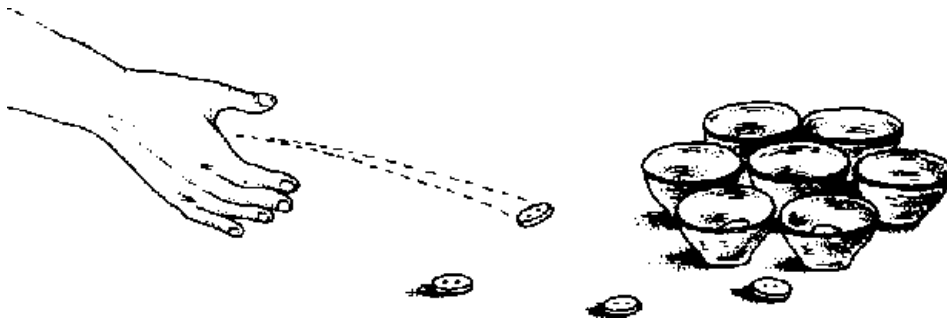
Simple Adding · Keeping Score · Taking Turns Eye-Hand Control

You will need

- Seven ice-cream containers or clay tea-cups.
- Seven large buttons or seeds.

How to make and use

- Arrange the containers on the floor in a floral pattern.
- Paint or put some coloured paper in the container placed in the centre to make it look different from the others.
- Turn by turn, each child stands at a fixed position and tosses 7 buttons towards the floral pattern. Points can be awarded. Two points for tossing a button in the centre cup, 1 point for each 'petal' cup; and zero for any that land on the floor.



Note: If you can collect big, light-coloured seeds, you could mark each one with a black pan, so that it looks like a honey-bee going in search of pollen or like a lady-bug out on a stroll.



RED-DOT NUMBER RODS

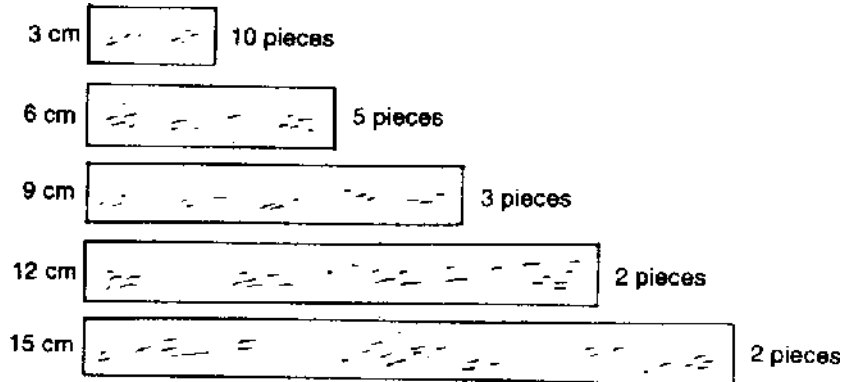
- Recognising and Comparing Numbers · Addition
- Simple Multiplication · Subtraction

You will need

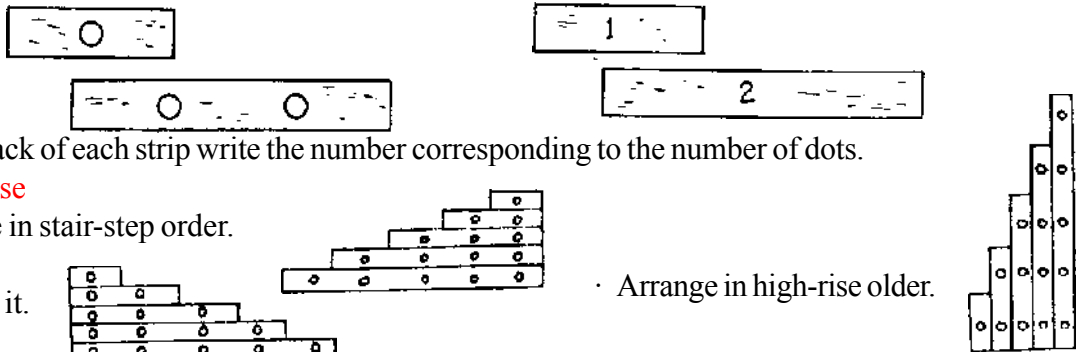
- Thin strips of wood like the ones used by electricians when laying wires in a house.
- Sandpaper.
- Fifty-five large, self-sticking red bindis, of equal size and same colour.
- A saw.

How to make

- Mark 3 cm long sections on the strip and with the help of the saw cut into in pieces, each 3 cm long.
- Saw the other strips into the following lengths and number:



- Rub sandpaper over any rough surfaces. Varnish or paint, if necessary, to prevent any danger of getting hurt by splinters.
- Stick a bindi exactly in the centre of each 3 cm segment on all the strips of wood.



- On the back of each strip write the number corresponding to the number of dots.

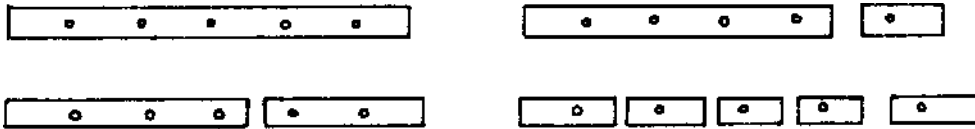
How to use

- Arrange in stair-step order.

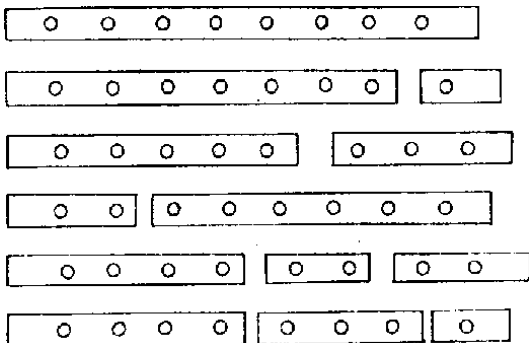
- Reverse it.

- Arrange in high-rise order.

- Ask children to give you 5 dots in 4 different ways (they should be encouraged to discover the ways themselves).



- Or arrange 8 dots in different ways. Write them down.



Multiplication:

‘How many 2’s make 8?’

‘How many 4’s make 8?’

‘How many 3’s make 9?’

Note: Cut lengths of wood with 2 or 2.5 cm square ends to make a perfect cube for the number 1. Put a red bindi on top, and on each of the 3 remaining sides write the number in 3 languages using a different colour for each.

Courtesy: Pang Hung Min

DESIGN BOARD

· Development of Sense of Balance and Design · Forming Geometric Shapes

You will need

- A 28-cm x 28cm square piece of pressed board or soft wood like that used in packing cases.
- Hundred headless nails with their tops nicely finished so that children do not hurt themselves.
- A collection of rubber bands of different colours and sizes.

How to make

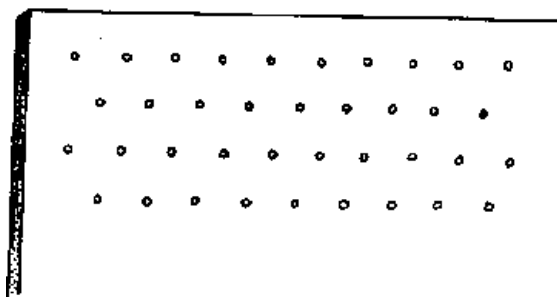
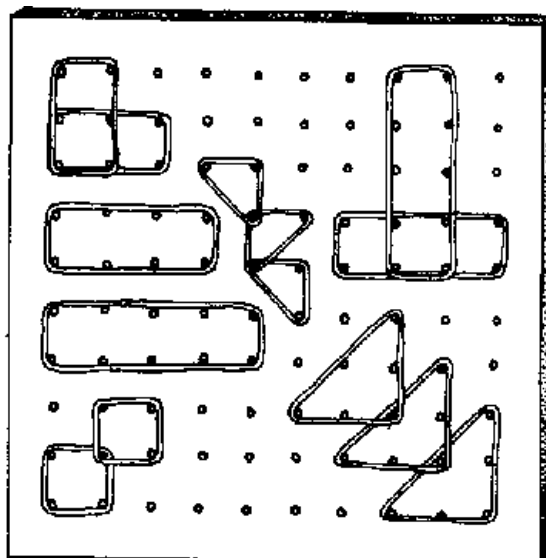
- Rub sandpaper over the piece of wood.
- Leaving a 1-cm margin all around, mark equal points for inserting the nails.
- The nails should be evenly driven in so that the top surface of the board is fairly level. Drive the nails deeply enough to ensure that the tension from the rubber bands does not bend the nails out of place.

How to use

Stretch the rubber bands round the nails to construct a wide variety of patterns and geometric shapes.

Variation

Make another board with an alternating grid of 10 and 9 nails and see how the pattern possibilities differ.



RUBBER 'V' TILES

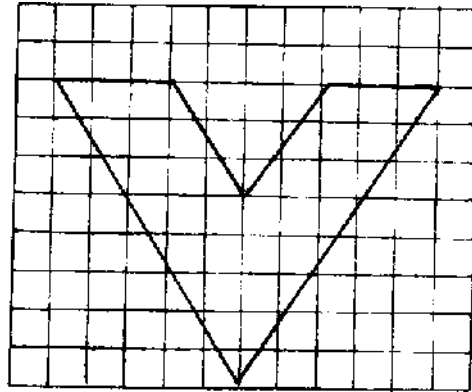
Sense of Balance and Design

You will need

- A sheet of rubber 1 cm to 2 cm thick or else soles of old shoes or rubber slippers can be used.
- A sharp knife or blade.
- A stencil, the size of the pattern shown in the picture.
- A thick pad of newspaper.

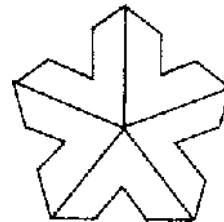
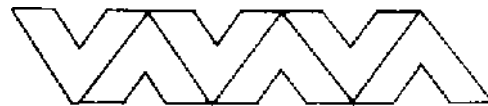
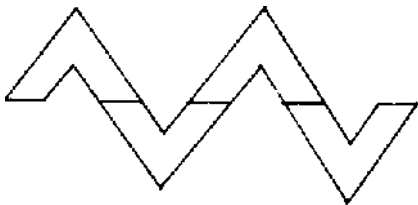
How to make

- Trace the stencil 'V' onto the rubber sheet.
- Place the rubber sheet on a pad of paper, so that the knife- blade does not get damaged, when cutting out the 'V'. Cut out the letter 'V'. You will need 24 such pieces.



How to use

Children can arrange the various 'V's in a fascinating array of designs and patterns.



Note: These rubber 'V' tiles are washable, light weight, durable and easily replaceable.

MATCHBOX MOSAIC TILE PATTERNS

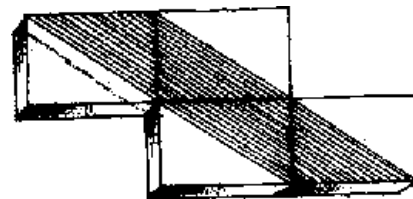
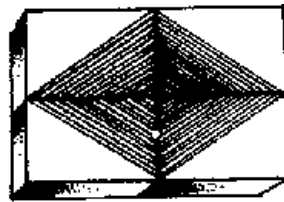
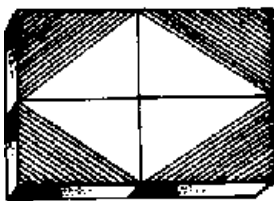
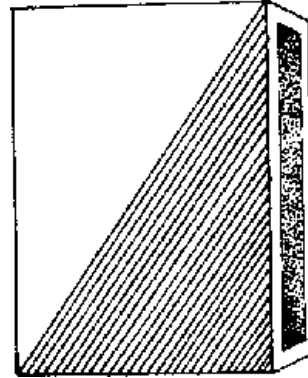
· Sense of Design · Sense of Creative Control you will need

You will need

Four to 20 matchboxes of the same size and with coloured paper pasted on top in the same arrangement as shown on right.

How to use

For example, by using only 4 boxes covered with the pattern shown in the figure above, children can make the following designs:



Note: A few patterns as 'starters' can be stored inside the matchboxes, though it is advisable to let the children create their own designs. If squared paper (graph paper) is available, a logical next step would be to invite children to create patterns with coloured pencils.

Courtesy: Govt. of West Bengal. ICDS projects

COUNTERS

- Early Number Concepts
- Sense of Design

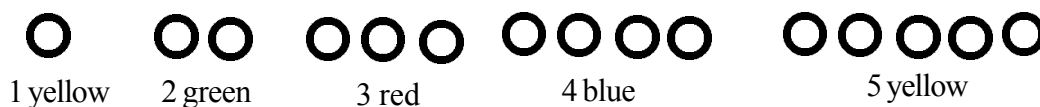


You will need

- Collect 100 to 200 soft-drink bottle caps. Paint them in 4 different colours (25 or 50 of each colour).

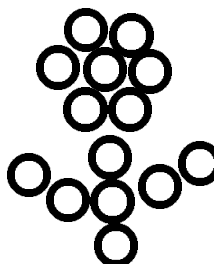
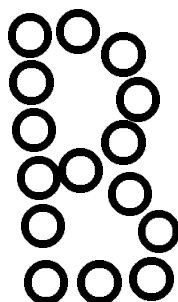
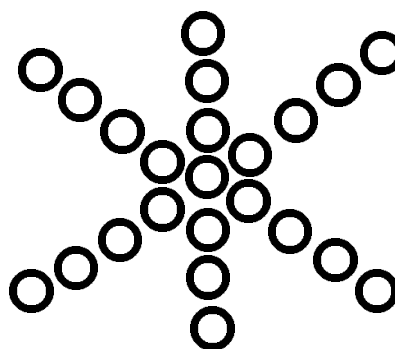
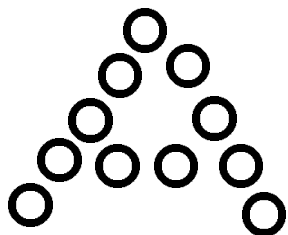
How to use

- Caps can be counted 1, 2, 3, 4, etc.
- Pattern counting:



Variation

- Score-keeping for children at pre-number writing level.
- Cover some numbers on an old calendar and have children guess/tell which numbers are covered. This could also be done with the Hundred Board.
- Designs, alphabets, numbers, etc.



OBSTACLE RACE ADDING-BOX

· Addition Practice up to 20 · Keeping Score · Taking Turns

You will need

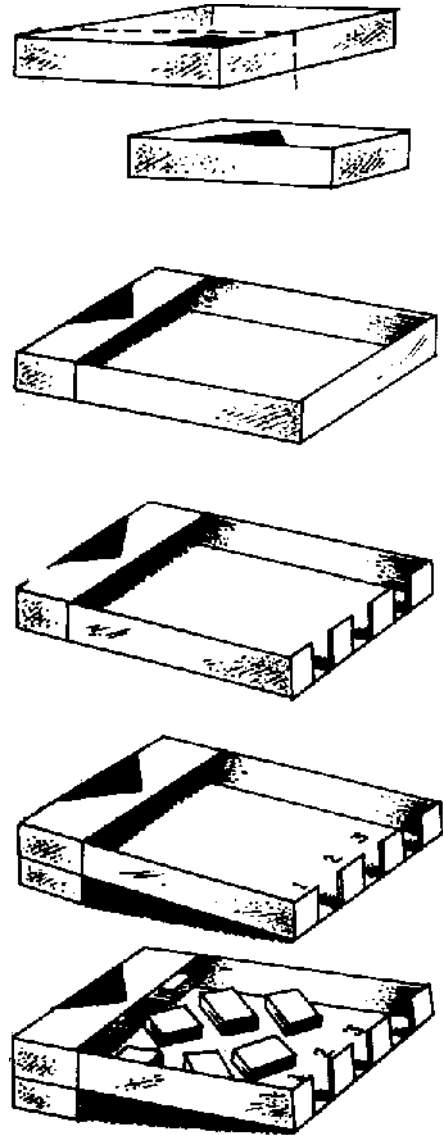
- A flat, hollow box with a lid.
- Eight to 12 empty matchboxes.
- Fevicol.
- A few marbles.

How to make

- Cut off about three-fourths of the cover.
- Make a 'V'-shaped opening, large enough for a marble to pass through, on the back of the small side of the cover.
- Stick this part of the cover to the bottom of the box.
- Make 3 to 5 slits in the front of the box, each wide enough for a marble to roll through easily. Write numbers 1, 2, 3 or 1, 2, 3, 4, 5 at each opening. Stick 2 matchboxes under the box at the back so that the box slopes forward.
- Stick randomly 6 to 10 small portions cut from separate matchboxes inside the bottom of the box to make the obstacles.

How to play

- A marble is dropped into the 'V'-shaped opening.
- The marble rolls down to any of the openings. The player gets the points written at the opening through which the marble passes out; a zero is given if the marble gets stuck in no man's land. See which child scores a total of 20 first.

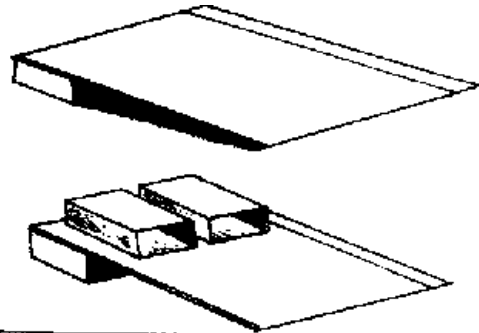


ROLL-a-COIN ADDITION GAME

· Adding up to 20 · Keeping Score · Taking Turns

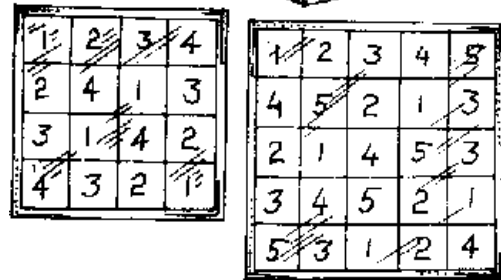
You will need

- Two old file covers or pieces of stiff card.
- Four empty matchboxes.
- Fevicol.
- A round coin.
- A black marker pen.



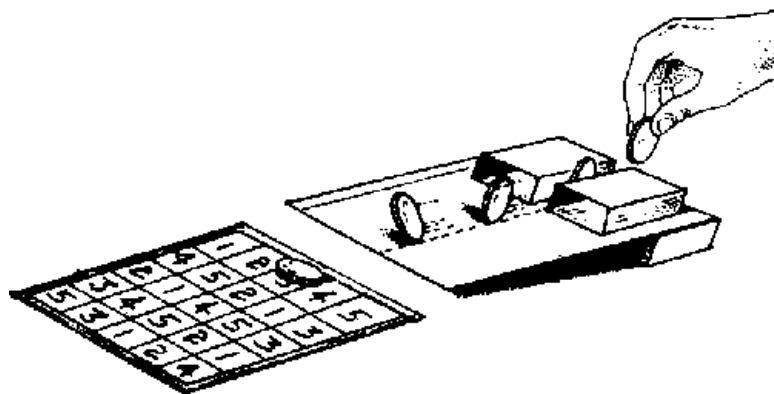
How to make

- Stick 2 matchboxes to the bottom of the file cover, to make it slope forward.
- Stick two matchboxes side-by-side at the top with a small gap in between them to allow a coin to roll through.
- Take a piece of stiff card on which you have marked 18 or 25 squares and keep it about 50 cm or 80 cm away.



How to play

Take turns in rolling the coins (or buttons) one by one. Add up the scores and see who reaches the total of 20 first.



PYRAMID ADDING GAME

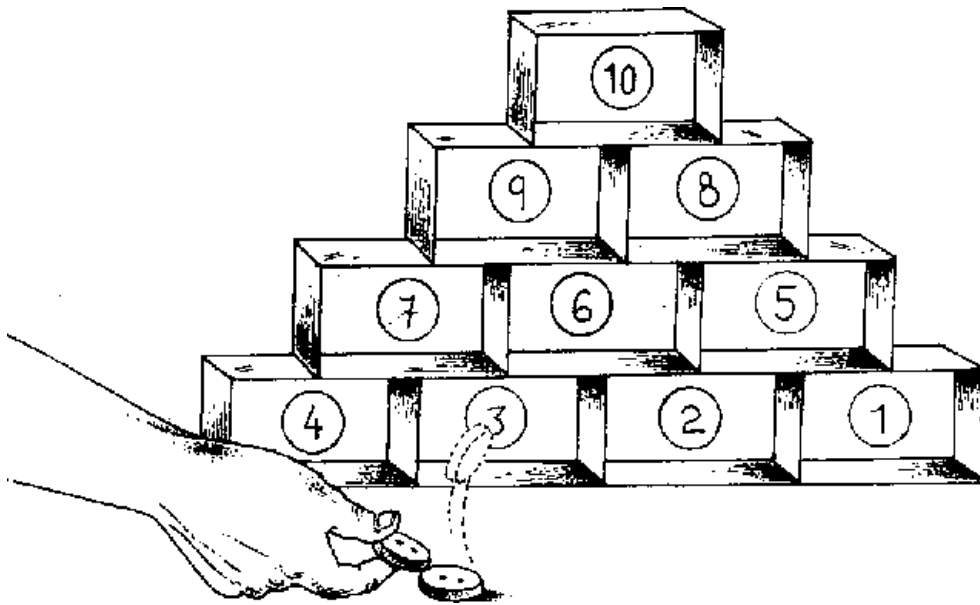
· Adding up to 25 or 50 · Keeping Score · Finger-Muscle Development

You will need

- The inside trays of 10 large matchboxes.
- Fevicol or a stapler.
- Numbers 1 to 10 cut out of an old calendar. Plastic buttons or round LUDO counters.

How to make

- Paste or write a number inside each tray.
- Stick or staple trays in a pyramid as shown below.



How to play

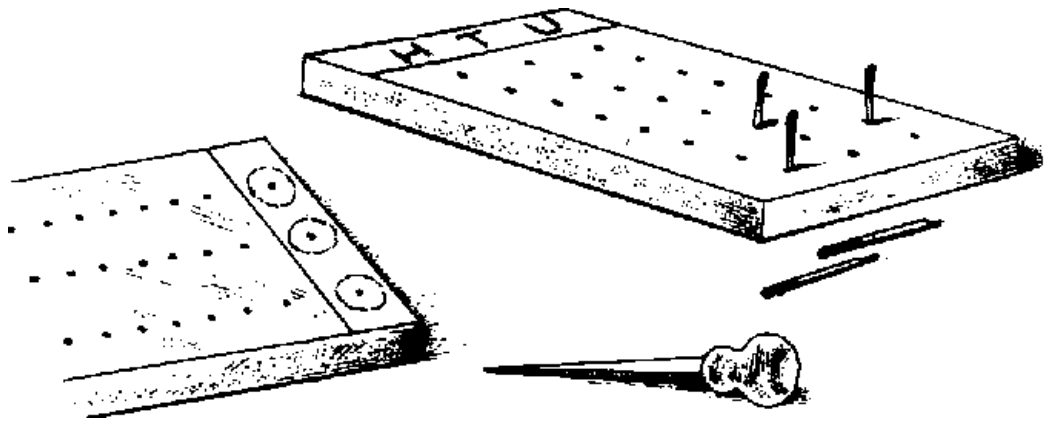
Press the edge of a LUDO counter or a button against the edge of another counter or button lying on the floor/table. The second counter or button will 'flip' up towards the pyramid. With luck (and skill) it will land inside any one of the trays. The player earns the number of points indicated by the number pasted or written in the tray. See who succeeds in reaching the total of 25 or 50 first.

RUBBER CALCULATOR or SCORE KEEPER

· Counting 1 to 100 · Keeping Scores · Hundreds / Tens / Units

You will need

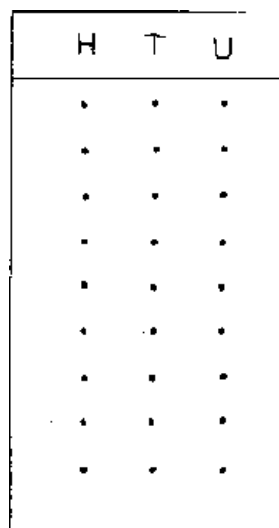
- A piece of rubber at least 2 cm thick or soles of old rubber slippers (washed, of course).
- A sharp knife or blade.
- A stencil, the size of the given pattern (old X-ray plates make marvellous stencils, so do the plastic covers of ration cards).
- A pencil-compass and an ice-pick or poker (cobbler's awl).
- A thick pad of old newspapers.
- Some used matchsticks. a Sticky labels or strips of paper and Fevicol (for writing H T U or making coloured circles).



Left: coloured circle with holes in the centres for the winning 10; right: total score of 132

How to make

- Trace out the stencil onto the rubber piece.
- Carefully measure and mark 3 rows of 9 dots. Leave space at the top for the label.
- Cut the piece of rubber into a rectangular shape. While cutting, the rubber must be placed on a pad of newspapers so that the knife edge does not get damaged.
- With the help of a compass point, deeply puncture holes into the marked dots.
- Use the ice-pick or poker to make the holes bigger so that the matchstick markers can be fixed easily into them.
- Label the top **H T U**.



Pattern for rubber calculator

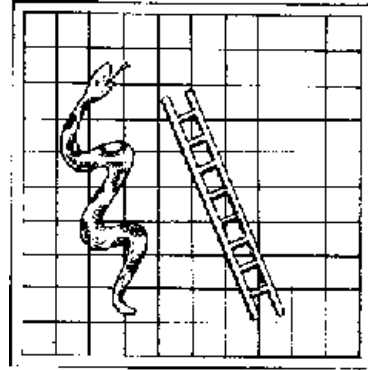
Courtesy: Arvind Gupta

GIANT SNAKES and LADDERS

· Learning Numbers 1 to 100 · 'Reading' Dice · Taking Turns

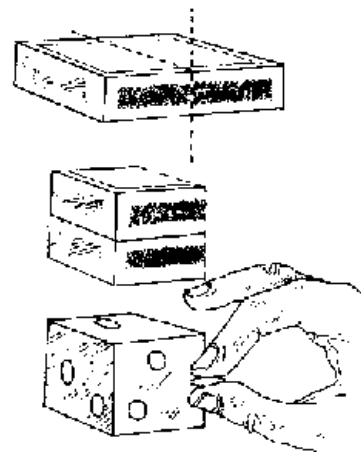
You will need

Cemented floor surface or a sheet of rubber cloth or thick plastic or an old white bed sheet or a square of woven palm- leaf with several coats of white paint for the base. Markers in 6 colours for 6 players. You could paint soft-drink bottle caps.



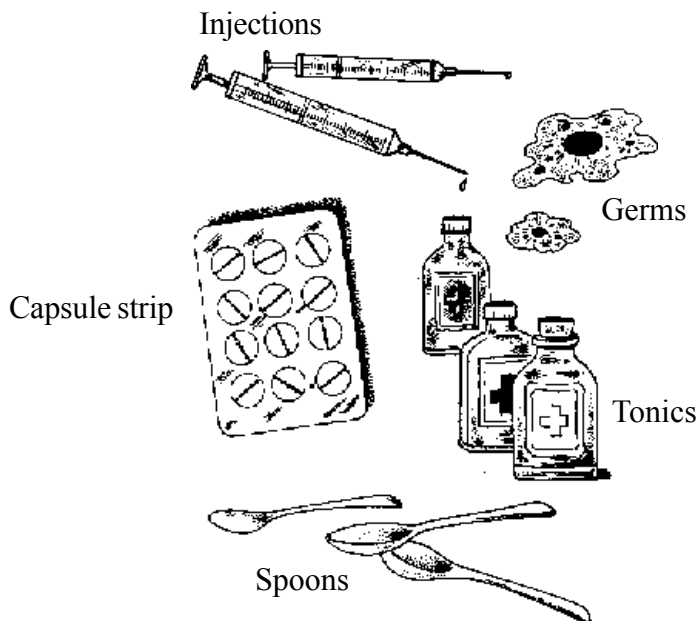
How to make

One large dice can be made by squaring off 2 matchboxes and pasting them together to form a cube. Wrap several layers of paper around it to make it secure. Add dots by using self-sticking bindis. To make an interesting sound, put a few grains of dal (lentils) inside the boxes before sealing them.



Variation

You could make a health-message version of this game by using germs instead of snakes and injections or capsule strips or tonics end spoons in place of ladders.



A HUNDRED BOARD

· Numbers 1 to 100 · Adding/Subtracting · Dodging · Odd/Even · Multiplication Tables

You will need

A piece of very stiff card at least 28 cm by 28 cm square. Leaving a 1.2-cm margin all round, draw a 25-cm square grid. Write the numbers 1 to 100 horizontally on the front side and vertically on the flip side. Or else you could make two separate boards.

How to use

DODGING

Keep the Hundred Board in a clear cellophane bag along with 5 bottle caps or brightly coloured buttons, each large enough to completely cover the number in a square. Staple the bag shut. Shake it and quickly cover the squares the buttons lie closest to. Ask the children which numbers are covered. The caps/buttons can easily be pushed aside to check if the answer is correct. Shake again.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

1	11	21	31	41	51	61	71	81	91
2	12	22	32	42	52	62	72	82	92
3	13	23	33	43	53	63	73	83	93
4	14	24	34	44	54	64	74	84	94
5	15	25	35	45	55	65	75	85	95
6	16	26	36	46	56	66	76	86	96
7	17	27	37	47	57	67	77	87	97
8	18	28	38	48	58	68	78	88	98
9	19	29	39	49	59	69	79	89	99
10	20	30	40	50	60	70	80	90	100

ODD NUMBERS/EVEN NUMBERS

Cover the odd numbers from 1 to 99 with markers (buttons, bottle caps, etc.). You will need 50 of these. They must be large enough to cover the numbers. Call out the numbers (1, 3, 5, 7...) as you cover them. When all are covered, try to recall them without peeping under the markers.

Look at the numbers that are not covered. Help the children to observe that all the uncovered numbers end with 2, 4, 6, 8 or 0. Say these numbers in the right order as a child points to them. Once the children are ready for further information, you can tell them that these are called even numbers.

At the next sitting, cover the even numbers with markers. Call out the numbers (2, 4, 6...) before covering them one by one. When all are covered, ask the children to recall and say the numbers without looking under the markers.

Help the children to notice the numbers that are not covered. These will be or end with 1, 3, 5, 7 or 9. Repeat these numbers in order while someone points to them. Tell the children that these numbers are called odd numbers.

Let the children count the even and the odd numbers between 1 and 100 and ask them how many are odd and how many are even.

AS AN ADDITION/SUBTRACTION LINE

To add 3 to a number, point to a number, say, 7. Then move forward 3 squares with your fingers, i.e. 8, 9, 10. Similarly, to subtract 3 from a number, point to the number 7. Then move backwards 3 squares with your fingers, i.e. 6, 5, 4. The answer will be 4.

SPILL THE BEANS

Children take turns in spilling 2, 3, 4 or 5 beans or buttons or stones onto the Hundred Board. Each writes down and adds his 2, 3, 4 or 5 addends. The highest sum for each round wins 1 point. Two or more children may play the game and the one to score 5 points first is the winner. Small plastic boxes may be used as 'shakers' for the pieces. They also serve as convenient storage containers for the pieces.

PATTERNS THROUGH TABLES

This is a beautiful way to visualise the patterns made by multiplication tables and becomes more so when we use colourful buttons, plastic flowers, a collection of toothpaste caps, LUDO counters, etc. The figure below shows the pattern made when we count by 3. Let the children count aloud along with you and ask them to mark every third number with one of the above markers. Soon their pleasure will know no bounds on seeing a pattern forming. On reaching 100, remove the markers one by one and call out each number as it is uncovered. Tell the children that this is called 'counting by 3' and it is same as the multiplication table for the number 3. They may copy this pattern in their notebooks and colour all the third squares falling between 1 and 100. Later, the same can be done with tables ranging from 2 to 10.

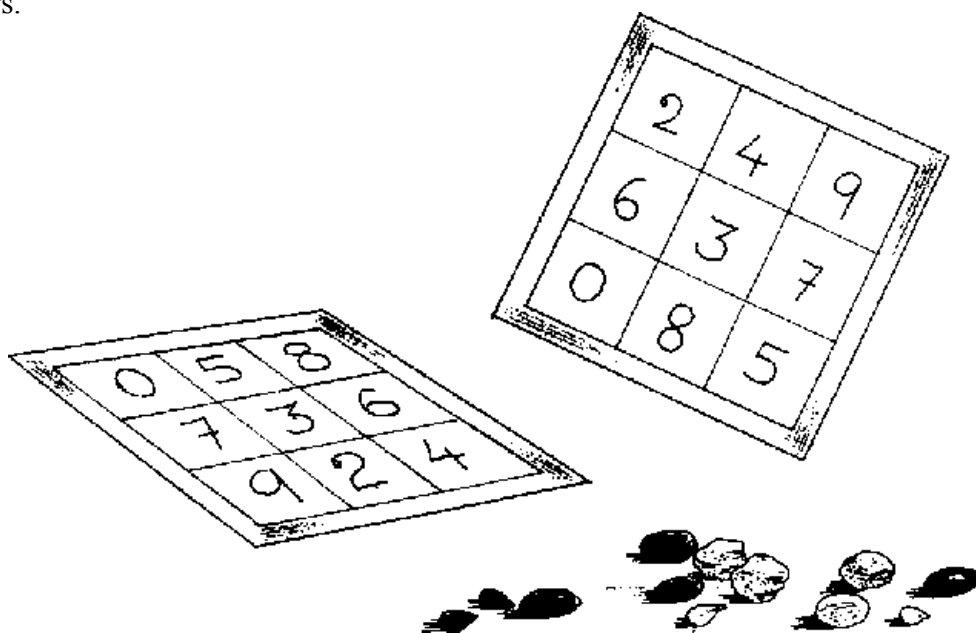
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

MATH PRACTICE GRID GAMES

· Adding 3 Numbers · Multiplying 2 Numbers

You will need

· Grid squares marked on a card or paper or slate or on the ground with a stick or a chalk or charcoal. Use the digits from 0 to 9 except for 1. Small stones, seeds, etc. can be used as markers.



How to use

Addition:

· Toss 2 or 3 markers on the grid and note the numbers on which the markers fall. Add these numbers. A player with the highest score or the first player to reach 50 or 100 is declared the winner.

Multiplication:

· Toss 2 markers onto the grid. Multiply the numbers on which the markers fall. The player with the highest total or the first player to reach 100 is the winner.

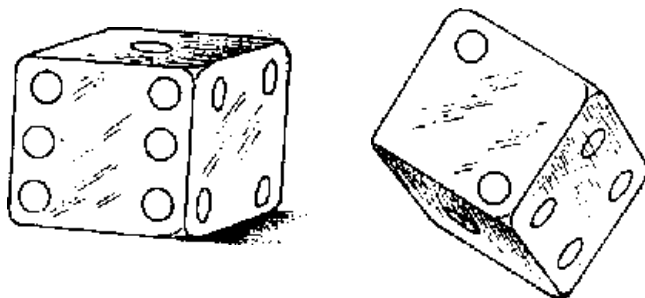
Note: You can give each child or a group of 2 or 3 children a rubber calculator for maintaining the score.

ADDITION DICE

- Adding Practice up to 50 or 100
- Keeping Score
- Taking Turns

You will need

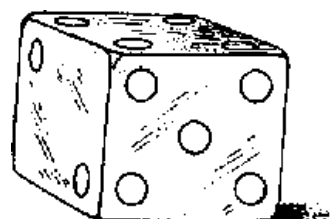
- Three dice.
- A storage box or an empty film container or a matchbox.
- A slate or paper for recording the score.



How to play

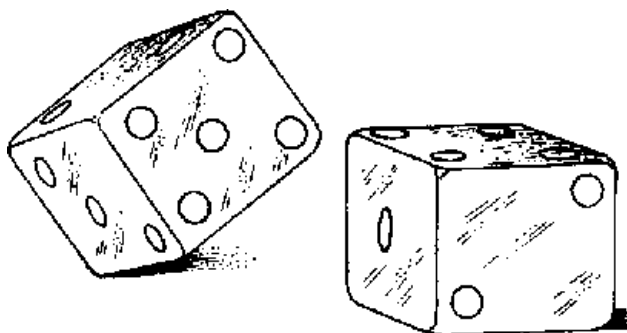
Throw all the 3 dice.

- Add the dots on the top surfaces of all the 3 dice.
- The winner is the first player to score a grand total of 50 or 100.



TABLES' DICE

- Quick Addition
- Tables practice upto 12



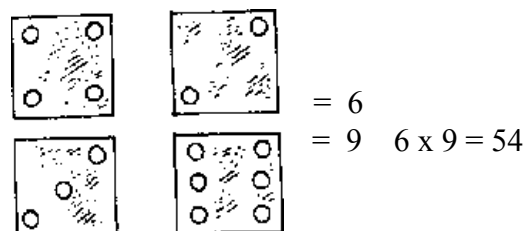
You will need

- Two dice.
- One storage box.
- A slate or paper for keeping score.

How to play

Both the dices are tossed by a player twice. The total number obtained by counting the dots on the top surface of each dice on every toss become the factors for multiplying and the player must give the final answer correctly.

After each round, the player with the highest answer gets 1 point. The winner is the player to score 10 points first. This game is far playing in pairs or in small groups.



Note: You can make individual rubber calculators for keeping or recording the scores.

NEW LIFE for OLD CALENDARS

· Number Line · Odd-Even · Adding/Subtracting Patterns

NUMERICAL ORDER

Cut number-squares separately. Mix them up. Ask the children to rearrange them in order.

ODD-EVEN

Encircle the odd numbers in red and the even numbers in blue.

COUNTING BY 2's, 3's, 4's, etc.

Circle in blue colour all the numbers you would use when counting by 2, in green for counting by 3, in black for 4, in red for 5. Notice the numbers that get encircled more than once. Discuss why. Point out numbers that never get encircled: 11, 13, 17.

NUMBER LINES

Make number lines by cutting rows horizontally and pasting in a long, straight line from 1 to 30 or 31.

ADDITION AND SUBTRACTION PRACTICE

· The number below a calendar number is always plus 7 and the number above is minus 7. (If the grid had 8 numbers, then the number below would be plus 8 and the number above would be minus 8. Try with grids of 5/10/12 etc.).

$$11 + 7 = 18$$

11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

$31 - 7 = 24$

· Take a left diagonal. You will find the numbers are obtained by adding or subtracting 6.

11	12	13	14	15	16	17
					23	
				29		

$17 + 6 = 23$
 $29 - 6 = 23$
 $23 - 6 = 17$

· When a right diagonal is taken, the number below increases by 8 and the number above decreases by 8.

MONTHS AND SEASONS

· Tear out the calendar into its 12 months. Mix up the months.

Ask the children to rearrange them in order.

Make a list of the months that have 31, 30, 28 or 29 days.

· Paste the months on 5 large sheets of newspaper and label the seasons:

WINTER : December, January, first half of February.

SPRING : Second half of February, March.

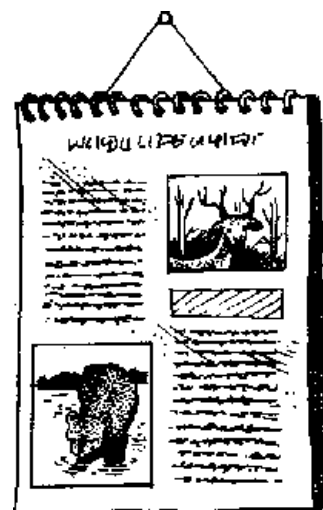
SUMMER : April, May, June.

MONSOON : July, August, September.

AUTUMN : October, November.

WALL CHARTS

Wall calendars that are blank on the flip side can be used for making charts for the classroom.



Section 2

VOCABULARY DEVELOPMENT

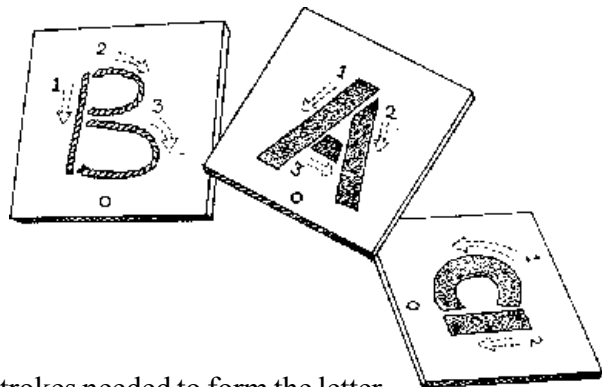


FEEL-and-WRITE ALPHABETS

· Letter Recognition · Early Letter Writing

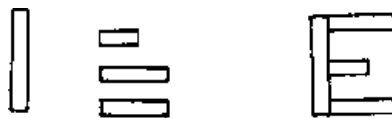
You will need

- Squares of stiff card about 7 or 8 cm square.
- Sandpaper or string.
- Fevicol.
- A marker pen.



How to make

- Using a pencil, write an alphabet on each card.
Letters with rope:
 - Cut a small piece of rope for each of the writing strokes needed to form the letter.
- For example, for 'the letter 'E' take 1 long piece, 1 short piece and 2 medium pieces of rope.



- Spread quick-drying glue over the pencil lines on the card (one line at a time) and immediately press the piece of rope in place.

Letters with sand-paper:

- On the smooth reverse side of sandpaper draw each letter. Cut them out one at a time.
- Then cut each letter into sections according to the strokes used in writing it.

For example, the letter 'M' can be cut thus:



- Spread quick-drying glue over the pencil lines on the card and immediately press the pieces in place.
- To complete the cards, use black ink or a marker pen to mark and number the direction of the arrows. Mark a small dot at the centre below each alphabet. Depending on the colour of the cards and the ropes and sandpaper, you can outline each finished letter (optional).

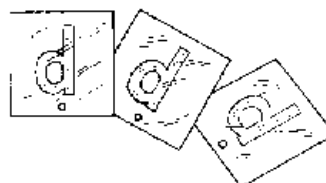
How to use

- Show the child how to feel the shape of each letter by moving the index finger in the correct direction (as per the arrows) and in the correct 1, 2, 3 order.
- Repeat this several times.
- The child makes the same movement on the table or floor beside the card while the teacher watches.
- The child may then be asked to write the letter in a bowl of sand or salt or on a slate, or paper.

Note: The dot below each letter indicates the bottom of the letter. Without this dot (or a thin coloured line), letters like 'M', 'W', 'p', 'b', 'd', 'u' and 'n' tend to get mixed up and confuse the child.

PICK UP THREE—a,b,c

· Pre-Reading Matching · Alphabet Recognition



You will need

- Seventy-eight pieces of 8-cm square cards.
- A black marker pen.
- A red marker pen.

How to make

- Using the black pen, write an alphabet on each card, making 3 cards for each letter of the alphabet.
- Mark a very small red dot at the bottom centre of each card so that there is no confusion about which side is the top and which the bottom. Children will automatically learn to hold each card the right way up.

How to use

· Deal all the cards out to a small group of children (5 to 8 in a group). The first child puts one of his cards face-up on the table/floor. If the next child to the left has the same letter, he/she puts it on the first card, if not, he/she says, "I pass." This continues till the third card is put on the other 2. The player who puts the third card down gets to pick up the set of 3 and keep at his/her side. Then the child to his/her left puts down a card to start another round. At the end, the winner is the one with the maximum sets of 3.

- Similarly a set with capital letters like A, B, C can be made.

· Take all the 156 cards for word-making, using capital letters for proper nouns or for abbreviations, like Delhi, Anita, TV, ICDS, MR., DR., STD.

COLOUR POCKETS

· Colours · Vocabulary Development for Divergent, Independent Thinking

You will need

- A pack of old playing cards or the flip side of old greeting cards, cut to size.
- Simple black and white drawings of common objects either drawn on the greeting cards or pasted / stapled to the playing cards.
- A piece of white post-office type marking cloth upon which 6 pockets are sewn. Each pocket should be in plain red, yellow, black, white, brown or green coloured cloth. Two loops can be fixed at the top for hanging up and for display so that the whole class can see.

How to use

- Show the pictures. Name the objects. Talk about them.
- When the children can more or less say the name of all the objects, place the cards in a stack with the picture-side facing down. Ask a child to take a card, say its name, and put it in the pocket that shows its colour.

Discuss his / her choice by asking, "Can it be in any other colour? Is a newspaper black or white? Are you looking at the paper or the print? What colour is a raw banana? A ripe banana? An over-ripe banana? The inside of a banana?"

Give each child one or two cards. Say riddles like: 'I live in a tree. I have a mother and a father. I like to eat. I like to play. I have a cute face and a very long tail. Who am I?' The child with the picture of a monkey on a card jumps up and says, 'You are a brown monkey.' He puts the card in its correct pocket. Give each child one or two cards and announce, 'I want something red that helps to cook our food.' The child with a picture of an LPG gas cylinder jumps up and says, 'Here I am. I am a red gas cylinder.'

Variation

Here are some objects that can be used for pictures of each colour, but remember that a few come in more than one colour.

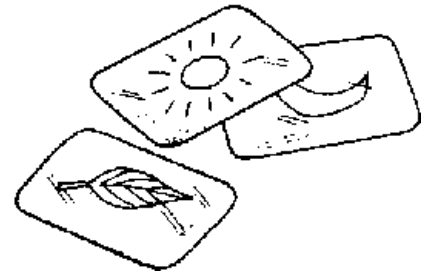
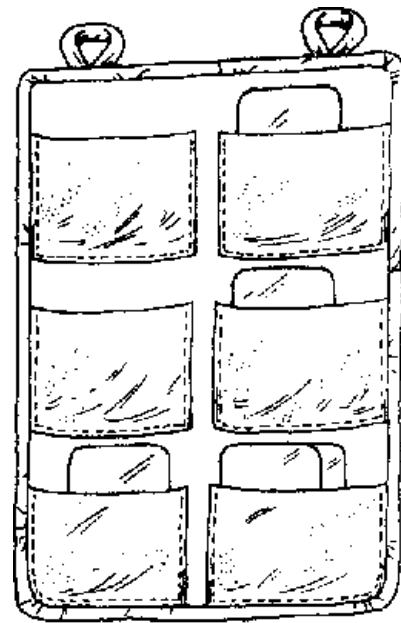
BROWN tree trunk or stump, deer, monkey, bear, rope.

GREEN leaf, pine tree, banana plant, parrot, peas, grass.

YELLOW sun, sunflower, banana, mango.

WHITE cloud, star, moon, newspaper, cow, goose or swan, egg, tyre, crow, slate, hair, buffalo, ace of spades or clubs in a pack of playing cards.

BLACK rose, gas cylinder, post-box, ace of hearts or diamonds, slice of watermelon (unless you are looking at the-black seeds, the white rind or the green skin!).



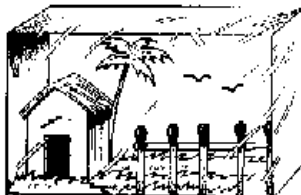
Courtesy: Learning Tree

MATCHBOX SCENERY

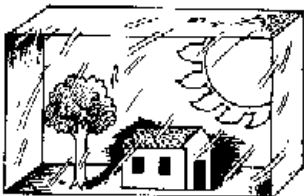
· Vocabulary Development · General Knowledge



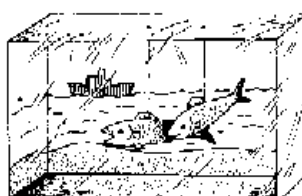
Night



Land



Day



Water

You will need

- Large matchboxes.
- Assorted scraps of coloured and textured
- Fevicol.
- Tweezers for piecing small pieces in place and hiding them there till the glue is dry.
- Cellophane paper to cover front of the box once the scenery is complete.
- Lots of love, patience and imagination. paper.

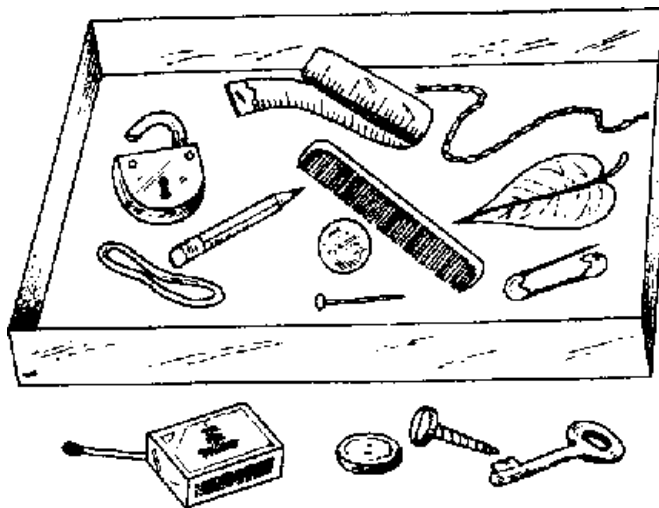
Courtesy: Zofin Moochhala

VOCABULARY BOX

Observation Prepositions Names of Objects Memory

You will need

- A large shallow box about the size of a flat file.
- Twelve to 20 small objects like a button, pencil, piece of chalk, small car, marble, ball, feather, rubber band, key, key-chain, padlock, gem-clip, piece of string, bangle, small comb, tooth- paste lid, jar lid, empty matchbox, used matches tied in a bundle, stone, piece of coal, nail, bus- ticket, shoe-lace, dice, small plastic animals, clothes-clip, hair-clip, leaf, flower, etc.



How to use

- To teach nouns, ask, “What is this?” The child will reply, “It is a pencil.
- For prepositions, say “Put the pencil under the spoon,” or ‘Place the gem-clip inside the circle of the red bai- gle,” etc.
- Concept of size, shape, colour, etc. can be given by saying, “Please give me the smallest thing in the box,” or “Priya, please give the blue lorry to Naresh,” or “Who can give Aliya something made of wood?” etc.
- In memory games, a child covers his/her eyes while an object is removed from the box. On opening his/her eyes, the child is asked to identify the missing object. Two or even 3 objects can be removed at a time. Similarly, a new object is added to the box. Ask what has been put in.

Note: From time to time, new objects can be placed to replace some old ones.

MATCHBOX SEED-SORTERS and SEED-SOUNDS

· Identification of Food Grains · Comparing · Sorting · Listening · Discussion



You will need

- Empty matchboxes; thin wooden ones make better sounds than those made of cardboard.
- A handful each of locally available grains like maize, wheat, thick long-grained rice, small fine rice, bajra, etc.
- Bits of coloured paper to paste on the boxes, so that each is a different colour.
- Bits of clear cellophane paper like the ones wrapped around a pack of cigarettes.

How to use

- Show the grains to the children.
- Talk about their names, colours, sizes, what we do with them, how we prepare them, etc.
- Mix up the grains and give a spoonful to each child. Ask the children to sort out and put the wheat grains in one heap, the rice grains in another, and so on.
- Fill a matchbox half with wheat, close the box, and shake it. Listen to the sound.
- Do the same with the other grains.
- Ask the children, Which one makes the most noise?" "Which is the biggest grain?" "Which makes the softest sound?"
- Play a guessing game by covering the inside trays of the boxes with clear cellophane paper so that the grains do not fall out. Ask the children to close their eyes while you interchange the coloured lids and the trays. Then ask a child to shake a box, listen, and tell what is inside. Slide the box open to check if the child's answer is correct.

Note: You can also use different types of dal (lentils).

Courtesy: Let's Play, UNICEF, SCAR. New Delhi

MATCHBOX NOUNS, VERBS, COLOUR WORDS

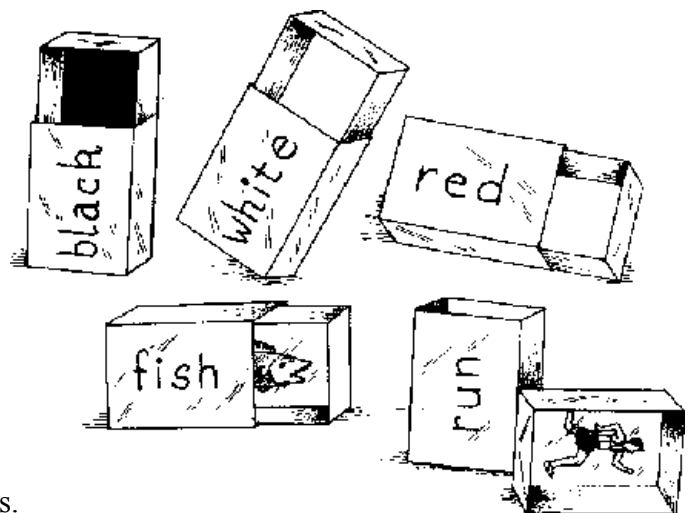
· Vocabulary Development · Self-Teaching Word Recognition

You will need

- Dozens of small empty matchboxes.
- Small pictures to paste inside the trays.
- Scraps of white or coloured paper to cover the box-tops.
- Gum.
- Marking pen.

How to use

- The child is asked to read the word printed on the cover. Then the tray is pushed out to check if he / she has read what the picture shows.
- Remove all the trays from their covers and mix them on the table/ floor.loor. Ask the children to place them in pairs.
- Hand a child a Verb-Box. He/she has to carry out or do what the word says. Another child may open the box to see if the act is correct. Point to a colour on a child's shirt / dress and ask the child to pick up the matching colour-box. Hand it to another child to open and see if the first child is correct.
- Older children could be asked to line up the boxes in alphabetical order.



NAME-PLATES

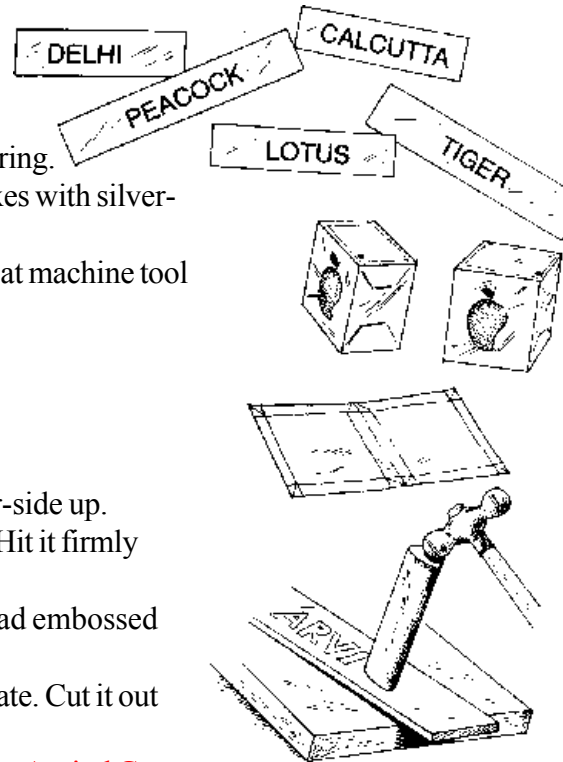
· Vocabulary Development · Spelling · Eye-Hand Control

You will need

- A small hammer.
- A piece of soft wood as a 'cushion' for hammering.
- Many empty Frooti~Dhara or other sturdy boxes with silver-lined insides.
- A set of metal-rod alphabet punches, available at machine tool shops. These are usually used for embossing.

How to make

- Cut the boxes open.
- Wash them.
- Lay them flat.
- Put them on the piece of wood, with the silver-side up.
- Place an alphabet punch on the silver surface. Hit it firmly with the hammer.
- Lift it up to see the lovely, clear, easy-to-read embossed letter.
- Continue till you have completed the name-plate. Cut it out with an ordinary pair of scissors.



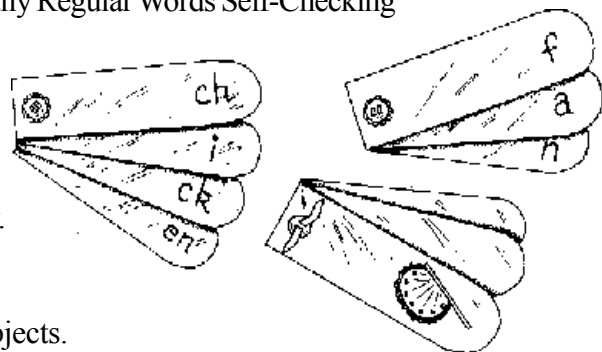
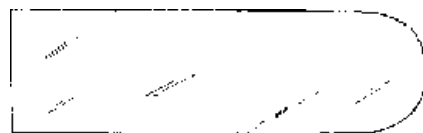
Courtesy: Arvind Gupta

FAN WORDS

Reading/Spelling with Phonetically Regular Words Self-Checking

You will need

- Many strips of stiff card of the size shown below.
- Split pins (used for closing big envelopes).
- Black marking pen.
- A collection of very small pictures of common objects.
- Storage boxes (about the size of a soap box) for keeping each category of words like Animals, Transport, Household Items, etc.



How to make

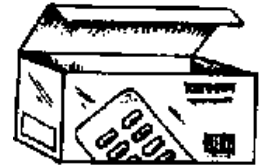
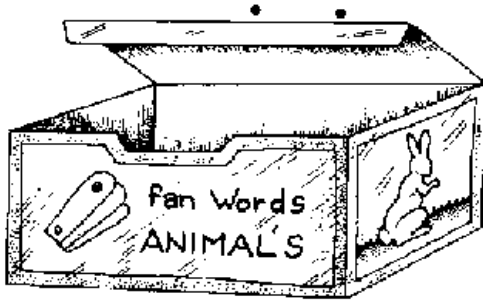
- Take as many strips as there are sounds in the word, e.g. 3 for the word 'fan'— f + a + n, 4 for 'clock'— c + l + o + c + k (where c and the k together make only one sound, so, they are written together), 3 for 'sheep'— s + h + e + e + p, etc.

Write a letter or combination of letters on each strip.

- Paste the matching picture on the back of the last strip (for self-checking by the child).
- Using a compass point or a paper punch, make a hole at the straight-edged end of the set of strips.
- Fix the Fan Word with a split pin so that the fan easily opens up to reveal each letter.

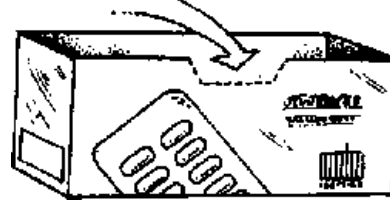
Courtesy: A Montessori class I, near Cologne, Germany

SMALL STORAGE BOXES



Tea bags

- Make a notch for easier opening.



Medicine strips

- Select boxes that open at the top.

- Strengthen these flimsy boxes by:

A. Cutting pieces of card the same size as top, bottom and sides of box and pasting them inside the box. Use Fevicol.

B. Pasting strips of brown paper (from old envelopes) across the side and bottom joints from the outside.

C. Paste silver or other strong colourful paper around the box.

D. Stick coloured cello-tape along the outside edges.

- Label the box according to its contents: very durable, attractive and useful.

Courtesy: Mohua Sarkar

COPY-WRITING GUIDES

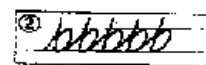
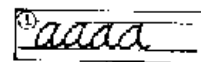
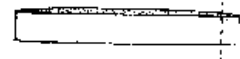
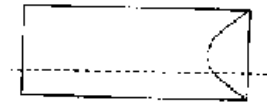
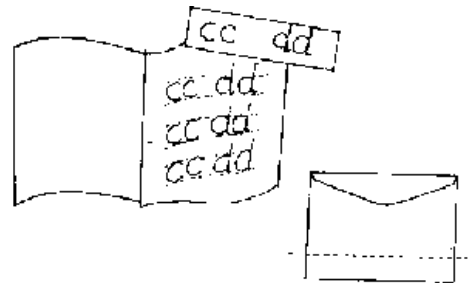
- Language Development · Handwriting

You will need

- Used envelopes.
- A pair of scissors.
- A ruler.
- Black marking pen.

How to make

- Draw lines about 4 cm from the base of used envelopes. Cut along the lines.
- Cut open the right end of half of them and the left end of the others.
- Turn them round, so that the folded edge is at the top.
- Draw 2, 3 or 4 lines or as many as there are in an exercise book.
- Write a full set of joined letters and patterns to include the entire hand-writing syllabus for a term. Number them in the order of their complexity. Children can, at their own individual pace, take a copy-writing guide, fix it to the top of their exercise page, copy it and then show to the teacher. If correct, they can take the next one. You will need several such sets for a class.

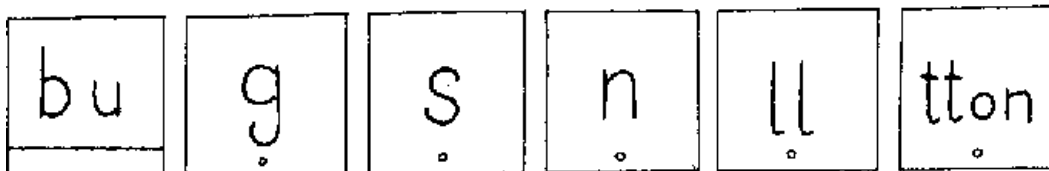
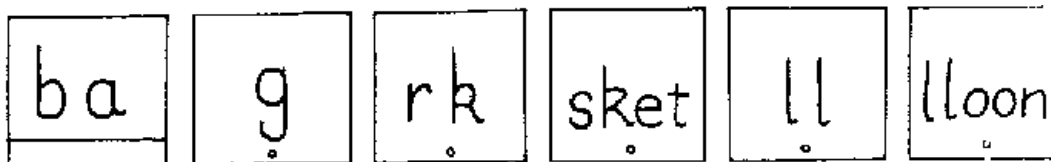


Advantages

Eliminates need for handwriting books. Permits a quick child to advance quickly and a slow child to proceed at his own pace and learn through repetition.

WORD-MAKING PAIR PACKS

Vocabulary Development · Reading · Spelling

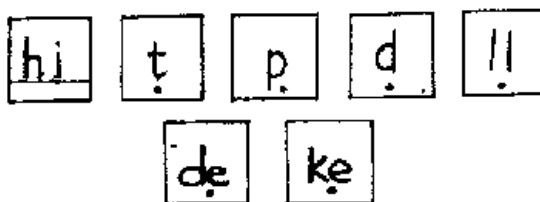


You will need

- Dozens of 8 cm or 6 cm square cards.
- Marking pens.

How to make

- Start with common words where the vowel sound is more or less 'short', for instance, **a** in pant; **e** in leg; **i** in sit; **o** in box; **u** in umbrella.
- Later, children can be told that sometimes the letter a says its own name, e.g **a** in baby; **e** in me; **i** in high school; **o** in rose; **u** in tube. This can be followed by adding 'long' vowel sounds, e.g. a in 'leg' becomes a long vowel in 'me'.

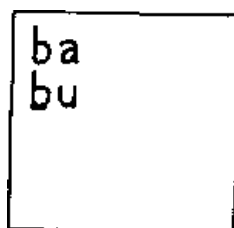


How to use

- The child can practise alone, or with a teacher or a partner.
- For self-teaching the master list may be consulted but the note below should be carefully seen.
- A small group may play a game by putting the beginning cards face-up on the table and the ending cards in a stack. They then take turns picking up an ending card, matching it to a beginning card and reading the word aloud. You might mix up 2 or 3 packs for the game but be sure to sort them out again immediately afterwards!

Note: Each pack must be kept in a separate envelope or small plastic bag or large matchbox or soap box so that the cards do not get jumbled up. Each set should include a master-list card showing (in small print) all the words that can be made. If both the beginning letters can make a word with the same ending, then include 2 cards with the same ending, for instance, ba+g bu+g

As a precaution against any mix-up, the back of each ending card in the 'ba/bu' pack should have 'ba/bu' written on it in small letters:



Each pack has only 2 beginning cards and any number of ending cards. The beginning cards are easily identifiable because a coloured line is drawn across the bottom. The ba/bu' pack might have a red line, a 'bo/be' pack could have a blue line, and so on so forth.

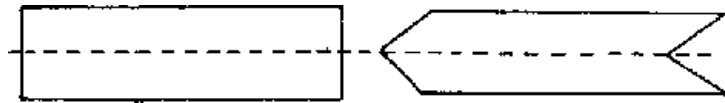
Courtesy: John Ellis

WORD BANK with CURRENT ACCOUNT and FIXED DEPOSIT

“Basic Literacy for Child or Adult · Reading/Writing “Alphabetical Order · Banking Concepts

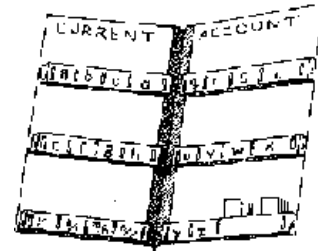
You will need

- A pair of old lab-file covers with a shoe-lace. These can be obtained from high schools after exams.
- Eight to 10 strips of stiff white or light-coloured cards about 5 cm wide and as broad as the width of the inside of the covers.
- Blank pieces of ordinary paper about 2.5 cm wide and 7.5 cm long.
- A length of string long enough to tie both ways round the outside of the closed cover to prevent the word strips from falling out.
- An old large envelope of a fairly stiff paper.
- Fevicol.
- Stapler.



How to make

- Fold each long strip of card in half, lengthwise.
- Slightly bend about half a cm of each end inwards and staple the ends.
- Staple 3 or 4 times along each strip to make little storage pockets.
- With Fevicol, fix these strips onto the inside of the covers.



Deposit Slips—Blank pieces of paper for new words

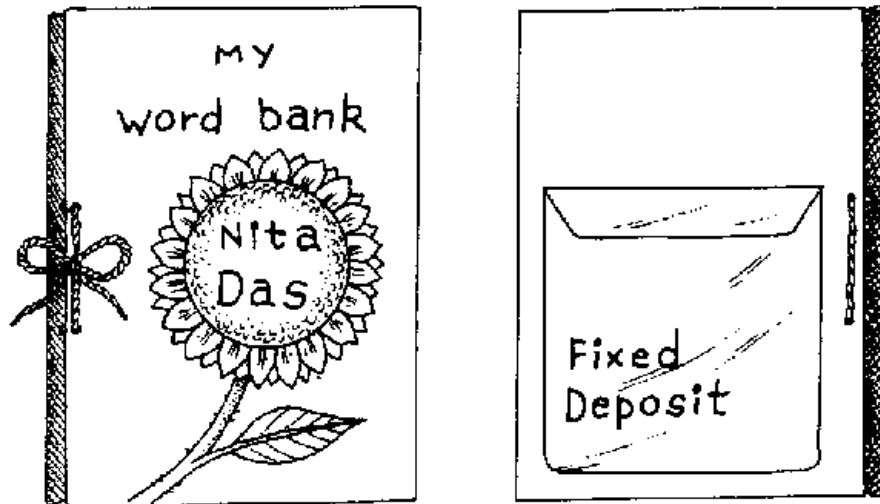
- Write a letter of the alphabet on each pocket. Keep the last few pockets blank for holding Deposit Slips / Blank pieces of paper for writing new words. In every language, some letters are infrequently used for beginning words. These can be doubled or tripled up in a single pocket, like ‘ijk’, ‘opq’, ‘uv:’ ‘wxyz’: The Current Account pockets are used for keeping the word strips until the student has mastered them and no longer needs to refer to them when writing. Then they are put in the Fixed Deposit envelopes at the back of the file cover.
- With Fevicol, fix an old, strong envelope on the back of the Word Bank. It should be open at the top to serve as a handy pocket for storing all the words the student has learnt (secured in his/her memory). This may be labelled Fixed Deposit. A Monthly Account of its contents may be kept inside. Each student should have his/her own Word Bank. Encourage students to decorate the covers.

How to Use

- The student discusses with the teacher the topic he / she wants to write and the words he/she will need. The teacher herself may suggest some new words. The student consults his / her World Bank for the words required and then withdraws them. The new words required are written by the teacher clearly, in large, neatly printed letters on the blank Deposit Slips. The student now arranges the word strips in a sentence or a phrase before reading aloud to the teacher or a classmate. The new words should be particularly emphasized, read aloud, spelt phonetically and taken out of the sentences to be used as flashcards.
- Now the student re-assembles the words in the sentences and practises writing on a slate or paper.
- On finishing writing, the student needs to replace the words in their correct Current Account pocket. This provides another opportunity to read the words and become familiar with the alphabetical order. The teacher should regularly go through the contents of the Word Bank with the student. Mastered words can be kept in the Fixed Deposit envelope. Words which are used rarely or never at all may be removed.

Note: Care should be taken to see that more than 100 words are not stored in the Current Account at one time because it is difficult to manage and the words will fall out. Initially use of slang words and colloquial expressions may be permitted if the student needs them to express himself/herself.

Courtesy: John Ellis



Section 3 EYE-HAND COORDINATION



DROP the CLOTHES-PIN

- Eye-Hand Control
- Patience
- Perseverance
- Taking Turns
- Keeping Score

You will need

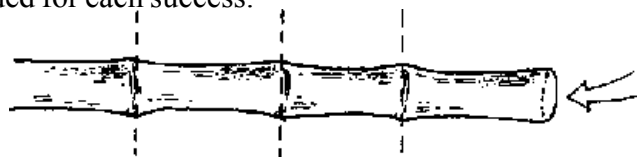
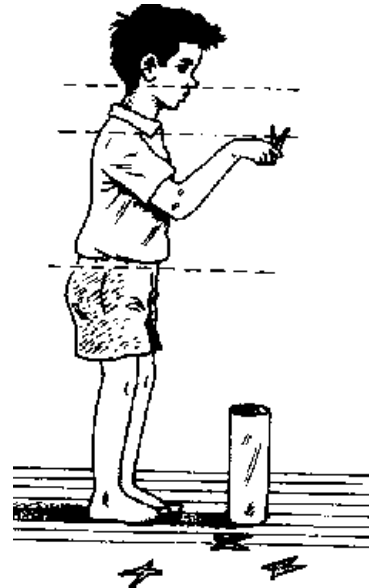
- A tall slim tin; large talcum powder tins are perfect.
- Eight to 12 wooden or plastic clothes-pins, in different colours if possible.

How to make

- Cut the top of the tin and smooth the inner rim so that children do not cut their fingers. Paint the outside of the tin and add a few attractive stickers or cover it with coloured paper.

How to play

- The tin is placed on the ground.
- The child stands with feet together just in front of the tin.
- He / she tries to drop a clothes-pin into the tin. The clothes-pin must be held at the waist/shoulder/nose level (depending on the age and ability of the child) and then dropped into the tin. The hand must not dip down to drop it in.
- One point is awarded for each success.

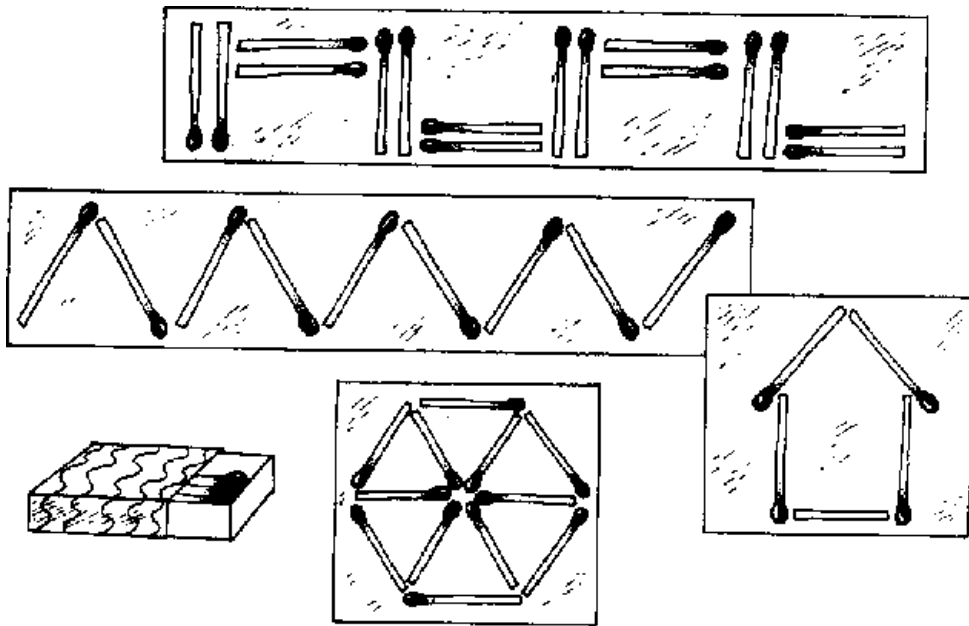


Note: This can also be made from sections of a bamboo piece that has an opening at least as big as that of a talcum tin.

Courtesy: Pang Hung Lin

MATCHSTICK PATTERN CARDS

· Pre-Writing · Eye-Hand Control



You will need

- Pieces of thick cards.
- Used matches for pasting on the cards.
- Several matchboxes filled with used matches. Decorate the box-tops so that they may not get mixed with 'real' matches. Fevicol.

How to make

- Cut the cards to a desired size.
- Arrange the patterns on the cards with used matches as shown in the picture. Paste with Fevicol.
- Put each in a separate, clear plastic bag, if possible. Staple or seal the opening. This set of cards can last for years.

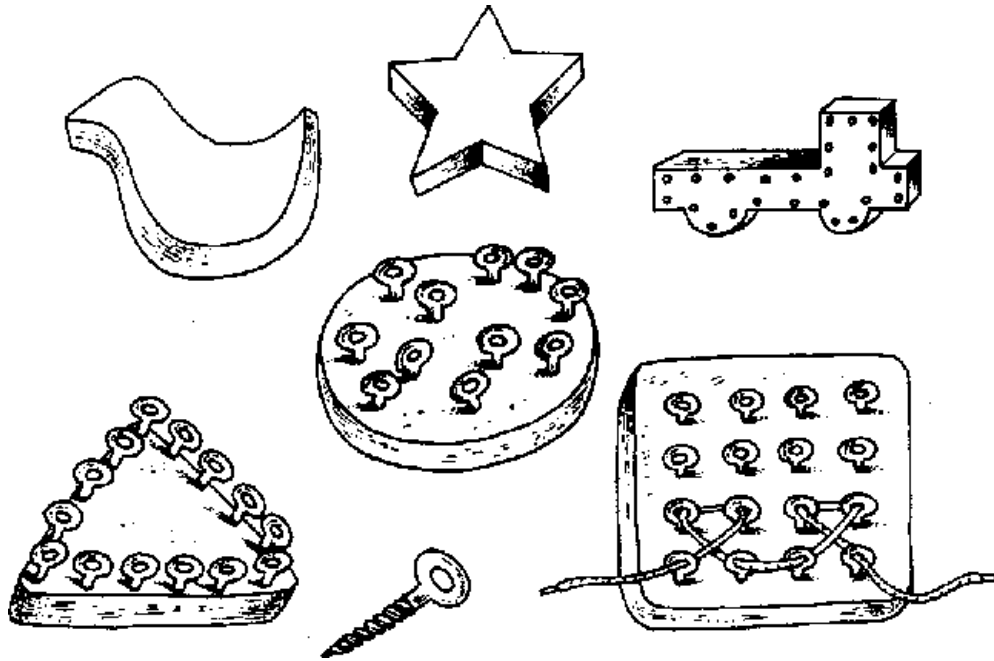
How to use

A child picks up a pattern card of his/her choice and also a decorated matchbox. He / she makes a matching pattern on the table / floor next to the card. Children should also be encouraged to create their own designs and pictures.

Courtesy: Loreto Day School, Sealdah

WOODEN LACING-SHAPES

· Eye-Hand Coordination · Dexterity



You will need

- Scraps of wood cut into geometric and other simple shapes.
- Sandpaper.
- Several dozen eye-screws.
- Lengths of metal-tipped shoe-laces or cord to thread through the 'eyes'. You could plait your own pretty-coloured cord from old plastic carry bags (see next page).

How to make

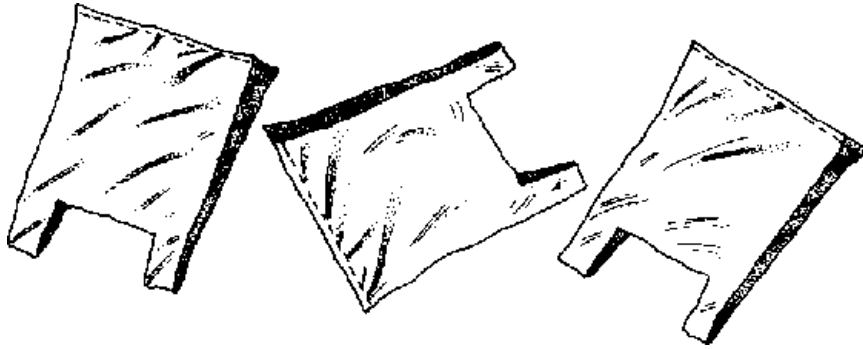
- Carefully sandpaper each piece of wood to make sure there are no splinters.
- Mark a pattern for placement of the screws.
- Fix a screw at each marking.
- Tie one end of a lace to one of the eye-screws so that the shoe-lace does not get misplaced.

How to use

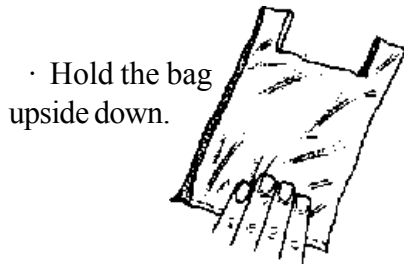
Encourage children to string the lace through all the eye-holes.

PLASTIC BAG CORDS and LACES

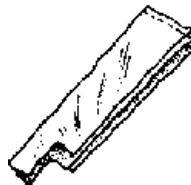
· General Classroom Use · Shoe-Laces · Hair Ribbons



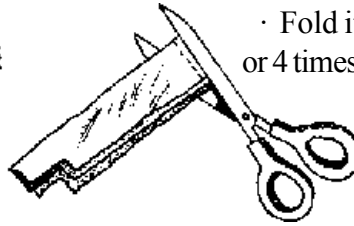
Plastic carry-bags:
rubbish or resource?



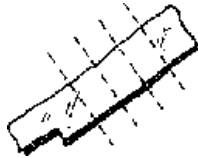
· Hold the bag
upside down.



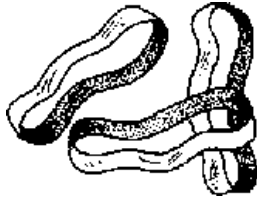
· Cut off the
sealed end.



· Fold it in half, 3
or 4 times lengthwise.



· Cut the rest of the length of the folded bag into strips
twice the width of your finger (with practice, you can cut 3
or 4 bags folded together).

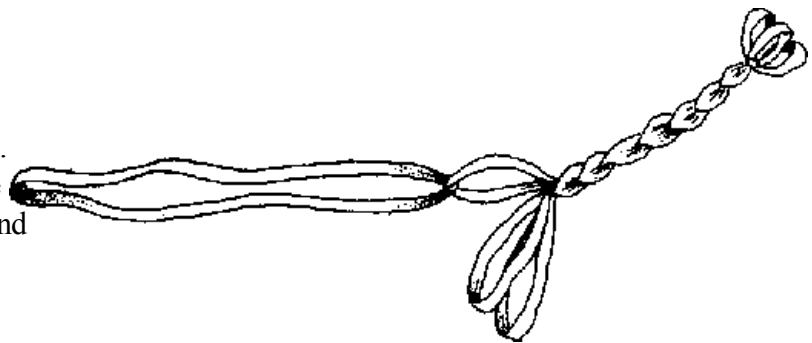


· When you
open a strip, you
will get a loop as
shown.



· Tie 3 loops together at the top.

· Plait tightly.
· If you need a longer cord,
add more loops with a slip-knot.
· To seal at the end, and make
fine stiff tip for lacing, hold the end
to a candle flame for a second,
withdraw it, and 'pinch' it at the
tip after it cools a bit.



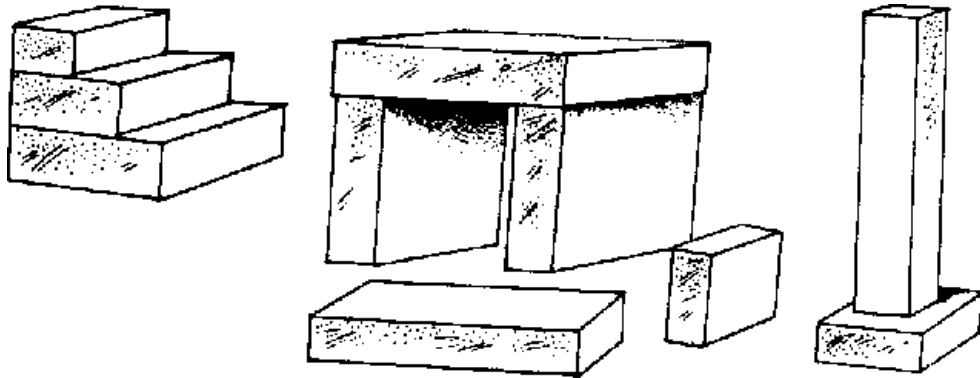
Once the children are shown
how to do this with old black
plastic bags, they can make their
own shoe-laces!

Simple enough for children to
make by themselves and helps to
keep the environment clean too!



BOX BUILDING-BLOCKS

· Eye-Hand Control · Construction Skills · Imagination



You will need

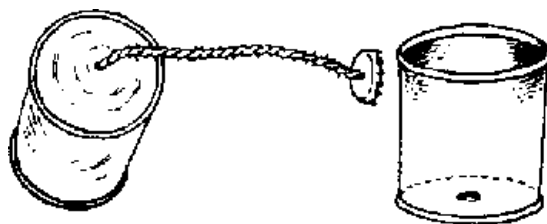
- A collection of small cardboard boxes of soap, butter, tea-bags, toothpaste, etc.
- Old newspapers or magazines.
- Cello-tape or bits of brown paper and gum.
- Silver paper or other durable coloured paper.
- Fevicol.

How to make

- Paste cello-tape or gum on one end of the box to close it.
 - Tear/cut sheets of newspaper into pieces about half the size of a postcard.
 - Make dozens of tightly-rolled wads from the paper. Each will be about half the size of a marble.
 - Drop a dozen or so wads to the bottom of the box. Press them down with a stick or a spoon.
 - Continue dropping and pressing till the box is tightly packed and full. Check to see that there are no bulges.
 - Seal other end shut with tape or pasted strips.
 - Carefully cover the entire box with coloured paper.
 - The edges and corners could be reinforced with coloured cello-tape or electrician's tape.
- A set of 2 or 3 dozen such blocks could last for years with just a new layer of outside paper being changed once in a while.
- These boxes are light-weight, strong and durable.

TIN CATCH-CATCH

· Eye-Hand Control · Development / Dexterity · Concentration · Perseverance

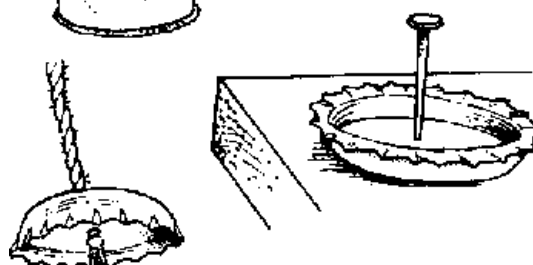
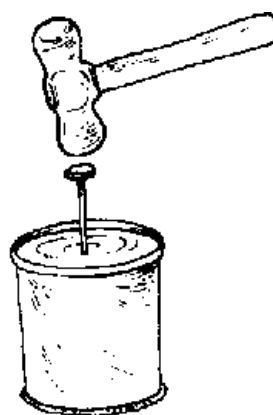


You will need

- A small empty tin with the top removed and the inner rim smoothed, so that children do not cut their fingers.
- A soft-drink bottle cap.
- A length of string (a pretty-coloured string can be made from an old plastic carry-bag).
- A hammer, a nail and a block of wood.

How to make

- Puncture a hole in the centre of the bottom of the tin.
- Pull the string partly through the hole. Tie a knot at the end so that if pulled out, the knot prevents the string from going all the way through.
- Make a hole in the centre of a bottle cap.
- Pull the other end of the string through this hole, and fix it with a knot.
- Now the cap is dangling from the string which is hanging down from the bottom of the tin.



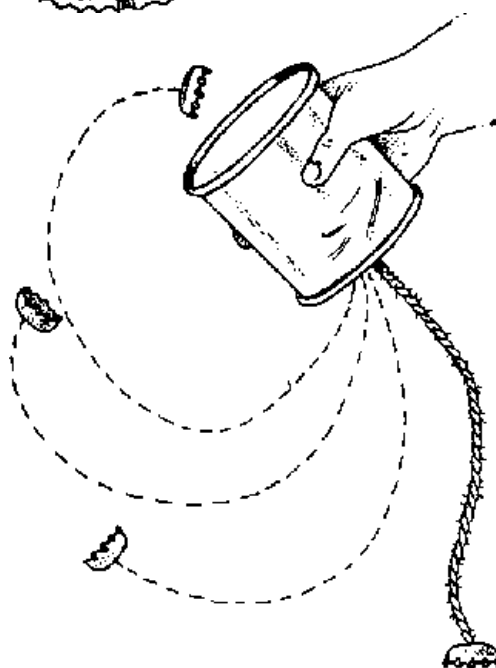
How to play

Hold the tin up to shoulder height and swiftly dip it downwards in order to 'catch' the cap.

Variation

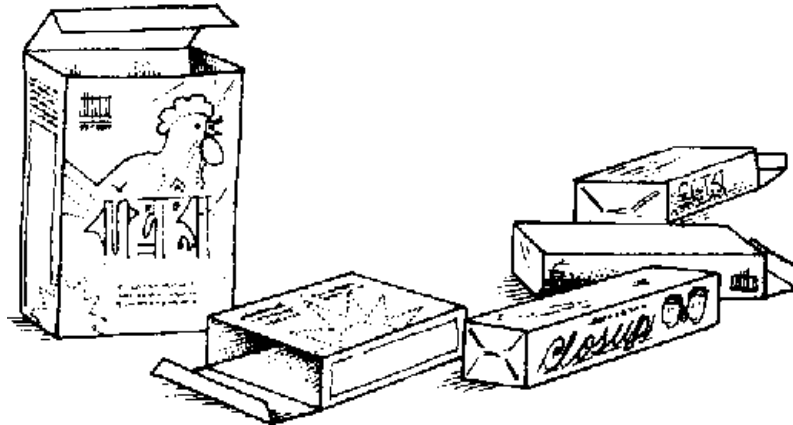
Try with 2 strings of the same length and different lengths and with 2 bottle caps.

Note: The string should be about twice as long as the height of the tin. The tin and bottle cap look very attractive when painted in bright colours or the tin could be covered with coloured paper.



CONSUMER PRODUCT PICTURE PUZZLES

· Eye-Hand Coordination · Fine Muscle Development Patience · Word Recognition

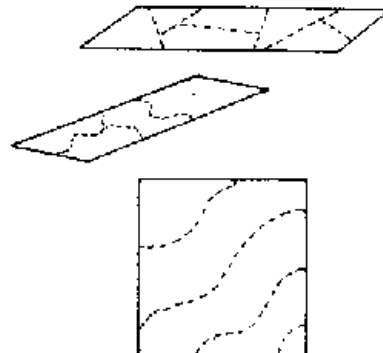
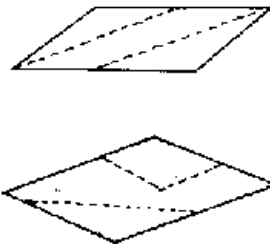


You will need

- A collection of consumer product boxes made of stiff card, preferably laminated.

How to make

- Cut out the front panels; sometimes the back panels which have big words or interesting pictures can be used too.
- Cut each panel into several pieces.
- Store each picture in a separate envelope or plastic bag.



Section 4

SOCIAL STUDIES, ROLE-PLAY AND PLAY



PUPPET with MATCHBOX HEAD and BODY

· Vocabulary Development · Story-Telling · Dramatisation · Socialisation

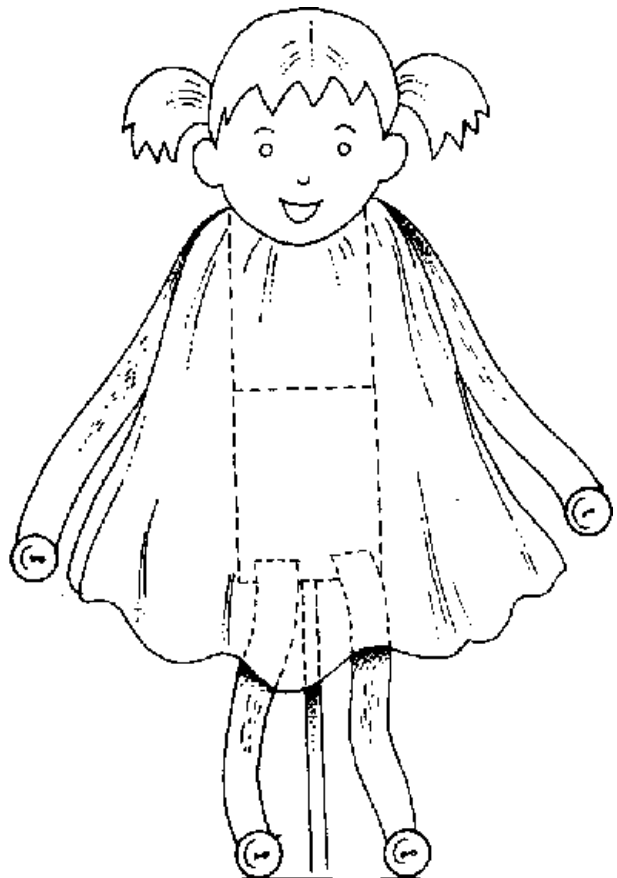


You will need

- Two matchbox lids and one tray
- A broomstick.
- Four small shirt buttons.
- A small handkerchief or a piece of cloth.
- Narrow satin or nylon ribbon.
- A face drawn on a card and coloured.
- Fevicol, needle and thread.

How to make

- Apply Fevicol on the back and long sides of the matchbox tray.
- Push lid 1 and lid 2 half way over each end of the tray. Press gently till dry. Attach the broomstick to the back of the boxes. Use a big needle and strong thread.
- Tie or stick or stitch a piece of cloth around the bottom of lid 1. Cut a small opening on each side, so that the ribbon ends come out.
- Attach the ribbon ends to the top of lid 2 to make the arms. Attach the 2 other ribbon pieces to bottom of lid 2 to form the legs.
- Sew buttons at the ends for hands and feet. Paste the face on lid 1.



Courtesy: Loreto Day School, Sealdah

PUPPET or DOLL with MATCHBOX HEAD

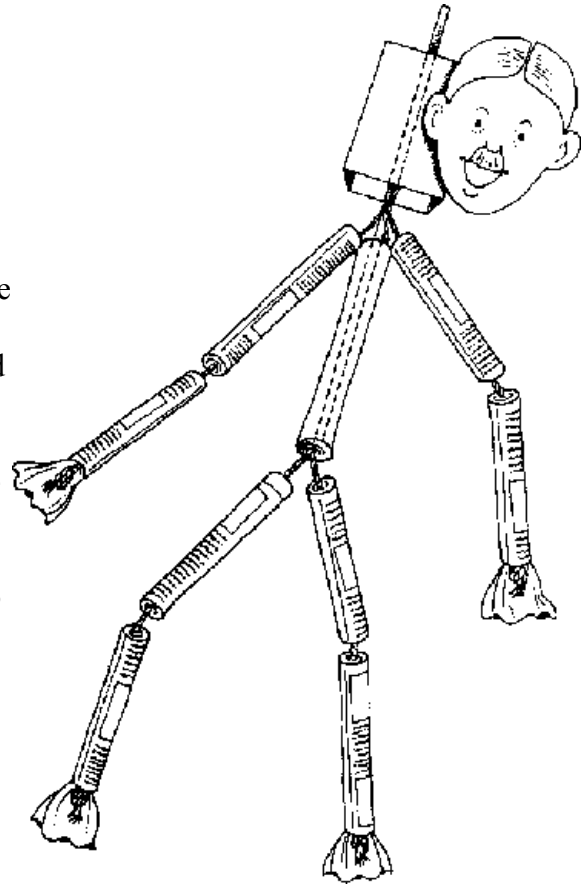
· Vocabulary Development · Dramatisation · Story-Telling · Socialisation

You will need

- Newspapers.
- Rope.
- A matchbox lid and a broomstick.
- A face drawn on a card and then coloured.
- Fevicol.

How to make

- Fix with broomstick Fevicol a broomstick inside the entire length of a matchbox lid; two-thirds of it should be sticking out below. Later this will be fixed in the centre of the body roll.
- Paste the head to the matchbox with Fevicol.
- Take 9 sheets of newspaper and roll each separately around a pencil. Paste the last layer of paper with Fevicol. Remove the pencil by sliding it out.
- Cut sheets of newspaper into long strips of 7 to 12 cm wide.
- Tightly roll a strip around a pencil. Paste with Fevicol the outside edge. Push the pencil out.
- Make 9 such rolls.



- Pull a long string through 2 rolls to form an arm. Tie a knot at the 'hand' end. Tie the centre of the string round the broomstick 'neck' and thread the rest of it through 2 more rolls to form the other arm. Tie a knot for the other hand.
- In the same way, make the legs and feet. The string for the legs must be pulled up through the 'body' roll and knotted round the 'neck' broomstick at the top. This makes the body roll the centre of gravity for the deli. If you want to make it into a stick-puppet, then use a stronger and longer stick.
- Paste the face on the front of the matchbox lid. Add clothes made from colour paper, scraps of cloth or even colourful bits of old plastic carry bags.

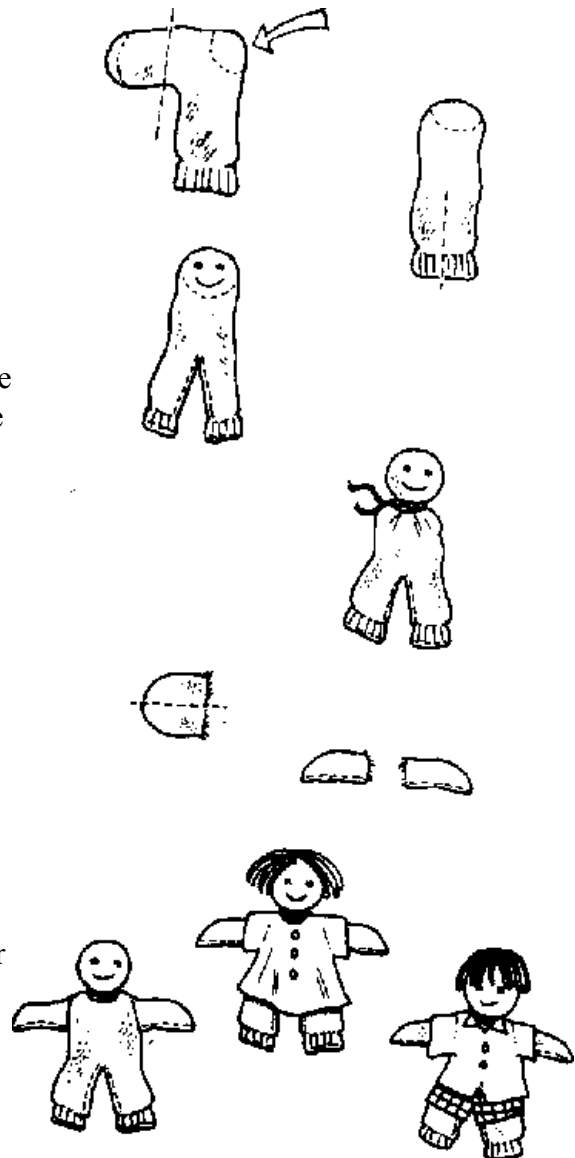
Courtesy: Loreto Day School, Sealdah

SOCK DOLLS

· Imagination · Role Play · Verbal Expression Sense of Security and Contentment

How to make

- Cut off the toe part of an old sock.
- Turn the sock around and cut it about half way up the centre.
- Turn the sock inside-out and back-stitch along the bottom and centre cut to form the legs. Turn right-side out.
- Embroider or paint a face.
- Stuff the legs and body with cotton or sponge or rags (sponge is best, because it is more cuddly and washable). Sew up the opening behind the face.
- Tightly tie a string around the neck to form the head.
- To make the arms, cut the toe of the sock in half.
- Turn the two pieces inside-out and do a back-stitch along the long sides. Leave the end open for stuffing. Turn each piece right-side out and stuff them.
- Sew the arms onto the back of the body, just below the head.
- Stitch or paste black wool on the head for the hair and make some clothes for the doll to wear.

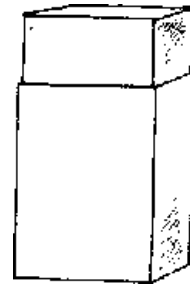


MATCHBOX PEOPLE

· Vocabulary Development · Story-Telling · Social Studies

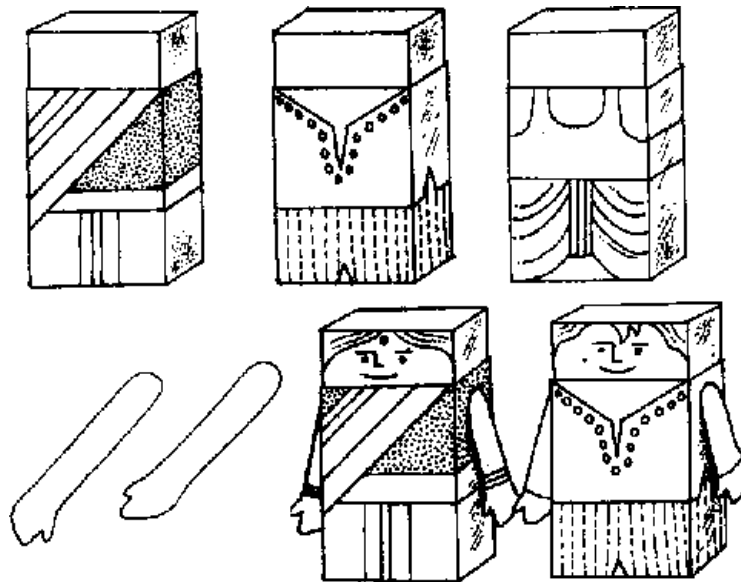
You will need

- Empty matchboxes.
- Scraps of white and coloured paper.
- Gum.
- Pens or coloured pencils.



How to make

- Gum the 2 parts of a matchbox in the position as shown in the picture.
- Cover the top part with a light-coloured paper. Draw or paint the face. Add hair by drawing or pasting coloured paper.
- Paste coloured paper round the bottom part. Add bits of another colour of your choice to indicate clothing.
- Two strips of paper of the same colour as the face can be pasted to each side for forming the arms.



Courtesy: Zofin Moochala

MATCHBOX VEHICLES

Vocabulary Development · Social Studies

You will need

- Matchboxes (cardboard).
- Scissors.
- Fevicol.
- Scraps of coloured paper.

How to make

Small Cart:

- One tray and two-and-a-half matches.

Large Cart:

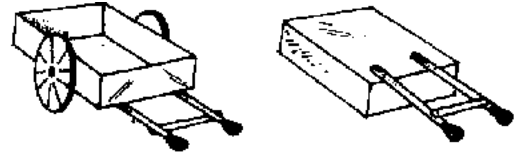
- Two trays and two whole boxes.
- Bits of cards for wheels.
- Clear cello-paper to make the windshield of the jeep or lorry.
- Few used matches.

Jeep:

- One cover and one whole box.
- Take the cover and stick clear cello-paper over the front opening. This will form the windshield.
- Cover its back, top and sides with coloured paper.
- Now take the whole matchbox and slide it one-third open. Turn it upside down. Put some Fevicol on the sides to make it stay in position.
- Cover with the same coloured paper as above.
- Stick the cover on top of the whole matchbox as shown in the picture. Add wheels, headlights, number plate, etc.

Top view

Bottom view

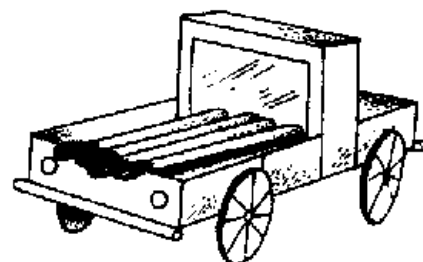
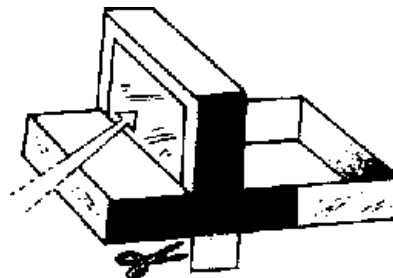
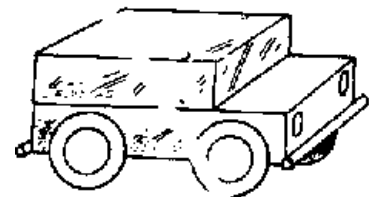
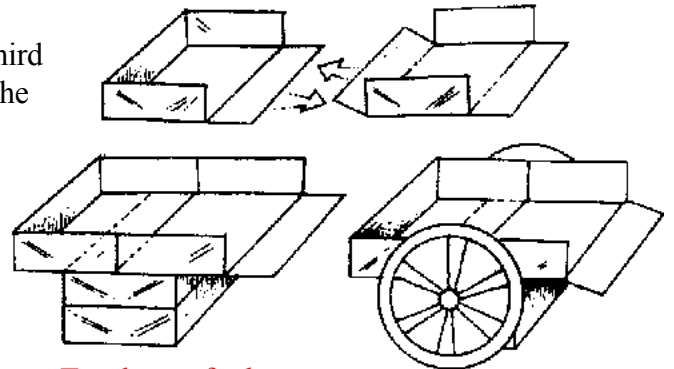


Lorry:

- One tray and 2 covers.
- Cut the portion as shown in the figure from the front and back of both the covers. Keep the long, black sides intact.
- Fit the tray into one cut cover as shown in the picture. This forms the engine and the body of the lorry.
- For the driver's cabin, fit the other cover over the engine. Snip off a little extra from the front side so that the driver has a window. Also snip off the extra side endings.
- Paste strips of coloured paper. Add wheels, number plate. Put some 'goods' in the back and off you go!

Two boxes for base

Wheels from cards



MATCHBOX ANIMALS

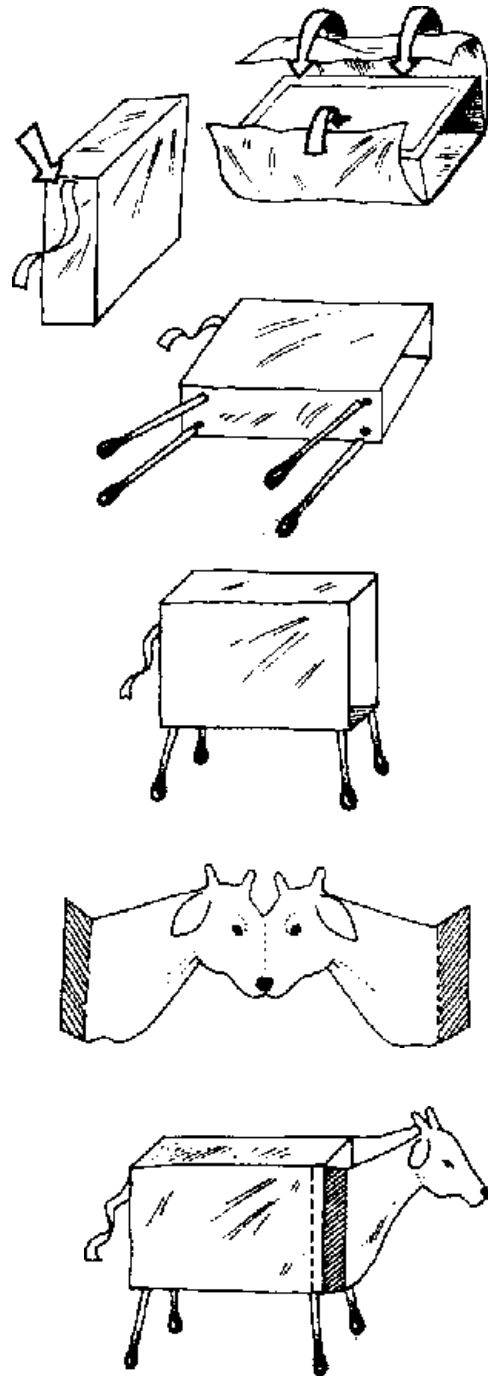
· Story-Telling · Vocabulary Development · Social Studies

You will need

- Empty matchboxes.
- Used matchsticks.
- Old brown envelopes.
- Gum.
- A compass.

How to make

- Cover the closed matchbox with brown paper cut out of an old envelope or paper bag..
- Insert a piece of brown paper at the back to serve as a tail. Apply some gum to make it stay in place.
- Apply a bit of Fevicol at the centre of the back of tray and push the tray into the cover. Press till dry.
- Using a compass point, make 4 small holes at the bottom. Insert old match sticks for the legs.
- Draw a double image of the head. Cut it out. Fold it in half. Insert the shaded portions between the cover and the inner tray. Add a bit of gum so that the head stays in place.



Courtesy: Zofin Moochhala

RUBBER CLIMBING TOY

· A Lively Accompaniment to Nature Study Lessons and Nursery Rhymes

You will need

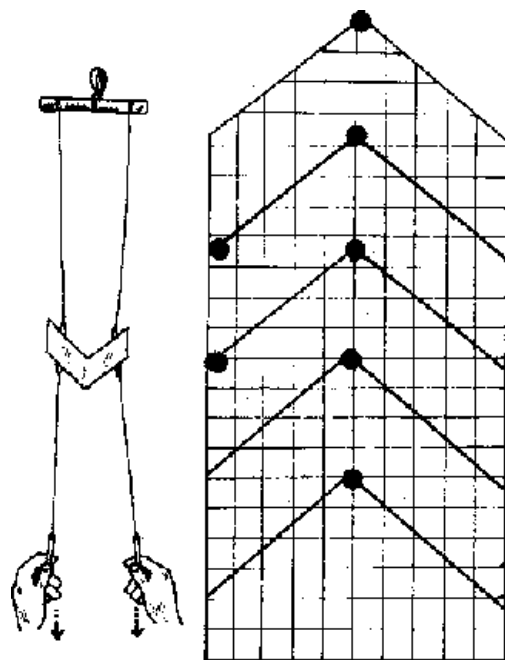
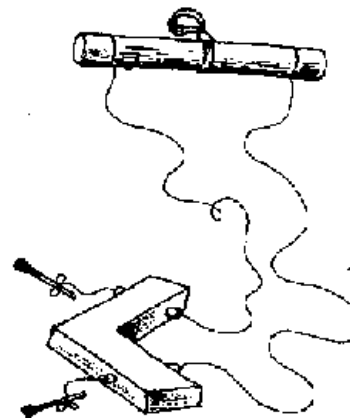
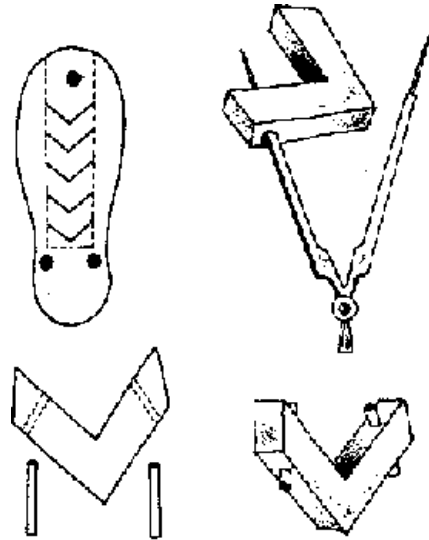
- An old rubber slipper.
- A compass.
- Used dot pen refill.
- A thin bamboo stick.
- Thin string.
- Thick string.
- A used match.
- A very sharp knife. A thick wad of newspaper to use as padding when cutting the rubber, so that the knife blade does not get damaged.

How to make

- Cut a 5-cm wide strip from the slipper. Cut 'V' shaped pieces from it.
- Puncture a deep hole at each end. The slant of the angle of the hole should be slightly inwards.
- Insert a bit of a dot pen refill into the holes.
- Take 2 pieces of strong, thin cotton string, each 125 cm long. Tie one end of each string to the notches made near the ends of the stick. Tie a loop of thick string to a notch at the centre of the stick (the notches keep the string from sliding off).
- The other end of each string should pass through the dot pen refills and be knotted round half of a matchstick as shown in the figure.
- Hang the centre loop from a nail.
- Hold a matchstick in each hand. Pull down to create a slight tension. Then tug alternately: left, right, left, right. See the rubber 'V' climb up! When you release the tension, the rubber 'V' slides down. Repeat the action.

Note: Paste a picture of a bee or a butterfly to the rubber 'V' and hang a flower from the centre of the stick. Or use a picture of a frog and a fly or a lizard and an insect. Place Jack and Jill on the rubber 'V' with a picture of a wall at the top. Or use a mouse and a clock for 'Hickory Dickory Dock', etc. Pattern for rubber climbing toy (actual size)

Courtesy: Arvind Gupta



MATCHBOX TIK-TAK-TOE

· Eye-Hand Control · Taking Turns · Planning a Strategy You will need

You will need

- One matchbox (card-board).
- A compass or ice-pick. · Twelve used matches. · Cello-tape in two different colours.

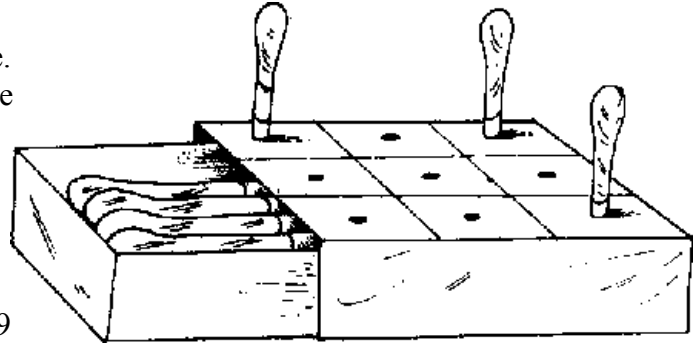
How to make

· Cover and strengthen the lid of matchbox by pasting a strip of paper round it twice. Paper from the inside of old envelopes can be used. Be careful not to paste it shut, for the tray must be able to slide in and out.

· Slide the tray in to give support to the box.

· Mark 2 black lines across the top and 2 lines from top to bottom so as to divide into 9 equal spaces. · Using a compass point, puncture a hole in the centre of each space. Make the holes large enough to accommodate the matchsticks. · Wrap one colour of tape around the top of 6 matchsticks and another colour round the rest.

· Sharpen the wooden tip a bit with a blade.



How to play

· Each player takes 6 matchsticks of the colour of his/her choice.

· The first player begins by putting a matchstick in one of the holes.

· The second player inserts 1 stick in a hole of his choice. Each player tries to make a straight (horizontal, vertical or diagonal) line of 3 matchsticks while trying to outwit the other by preventing him from doing so.

· Very often, the game results in a stand-off. To earn a point, one has to succeed in making a row of 3.

· After the game is over, store the matchsticks in the tray for safe-keeping and close the box.

