

DOING THINGS, MAKING THINGS

The best thing a child can do with a toy is to break it, pull it apart, peer inside and satiate her curiosity. Before children can understand a thing they need experience—seeing, tasting, hearing, touching, smelling, choosing, sorting, arranging, putting things together, taking things apart.

Children need to work with a variety of materials—cutting them, shaping them and putting them together. Each material has its own individual properties and one learns a great deal by working with different materials.

Young children learn best from simple things. And naturally it is best for them to first understand those things that are around them in their daily lives. It is best for 2 or 3 children to work together on these activities so that they can share materials and help each other. Thus they begin to learn cooperation.

Whatever children do with their hands goes to the head and the heart. Learning by experience is profound knowledge. It is more deeply imprinted in memory than words or formulae.

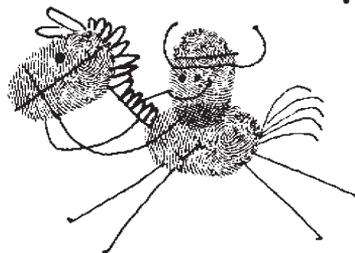
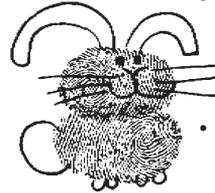
These activities need simple materials. This pull-out is just a small sample of the possibilities of doing wonderful things. For more log on to www.arvindguptatoys.com

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Thumbprints

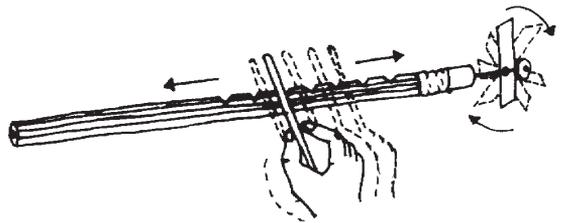
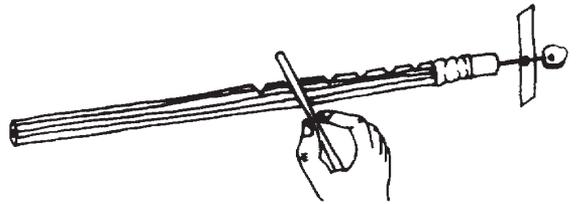
- Of all the little things we seek Our thumb appears, to be unique.
- Have you seen your own thumbprint? It has a unique imprint.
- No two thumbprints, look the same. But they make a very good game.
- Six billion people, throng the globe. Each with a unique thumb lobe.
- Every thumbprint, in the world, Has different lines, different whorls.
- Print your thumb, look up or down. You might find, in it a clown.
- A bird, a lion, a crawling snail. A fish, a peacock, snorting whale.
- In your thumbprint, you will find, lots of things, to open the mind.



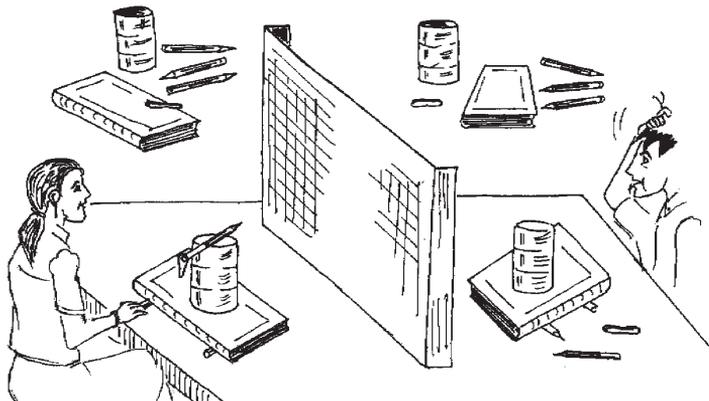
Perplexing Pencil

This toy has been around for over a hundred years. It has been a darling of physicists and has been quite a hit with children. It is very easy to make.

- 1 Take a pencil with a rubber on one end. Make 5 - 6 "V" shaped (deep) notches near the rubber end with a penknife. Cut a 5-cm x 1.5-cm rectangle from a greeting card. Make a hole in its center. This makes the propeller fan. Poke a paper pin through a small piece of rubber stopper and fan. Insert it deep into the rubber end of the pencil. Make sure the fan rotates smoothly on the pin.
- 2 Now rub an old ball pen refill along the notches of the pencil.
- 3 For best results hold the refill near one end and rub it hard. The fan will start rotating. Can you make the fan rotate in the opposite direction? The fan rotates because of the vibrations in the pencil produced by the refill. The physics behind the toy is a bit complex and several learned research papers have been written on it!

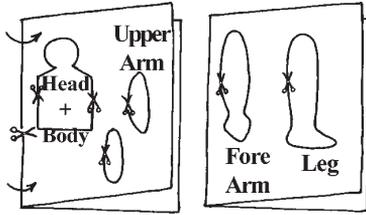


Following Instructions

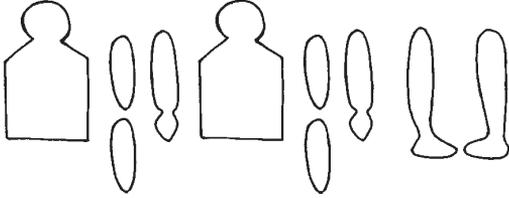


How good are we at giving and following precise and unambiguous instructions? This lovely activity tests this out. Two players sit across a table with a screen between them. Both are given the same set of objects—exactly the same. In the picture the girl puts these things one by one in a pattern. While arranging she also explains her actions in words to her partner. Her partner cannot see her arrangement but has to follow her instructions and make a similar arrangement. This is often not very easy. You will be absolutely surprised at the goof ups! This activity develops an ability to communicate precisely without mincing words. After finishing one round the partners reverse roles.

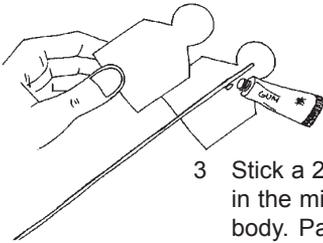
Acrobat



- 1 Take two thick card sheets and fold them in half. Draw a head and body, two forearms, one arm and leg as shown.

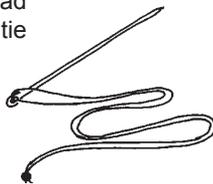


- 2 After folding these there will be 10 pieces as shown in the picture.

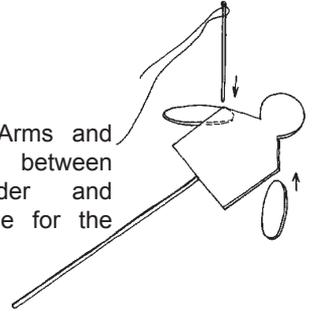


- 3 Stick a 25-cm long broomstick in the middle of one head and body. Paste the second head and body on the first (apply glue only to the broomstick).

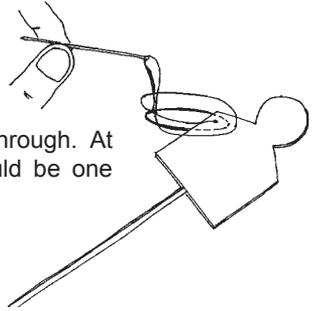
- 4 Weave a doubled thread through a long needle and tie a knot.



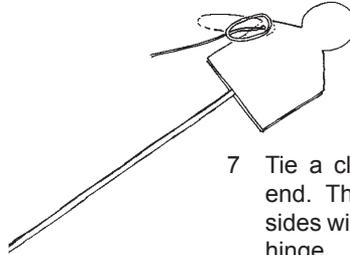
- 5 Take two Upper Arms and place them in between the left shoulder and sew. Do the same for the right shoulder.



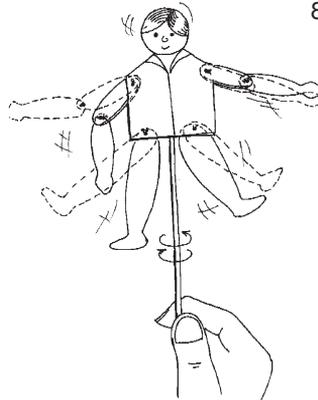
- 6 Pass the needle through. At one end there would be one knot.



- 7 Tie a close knot at the other end. The two knots on both sides will make a nice movable hinge.

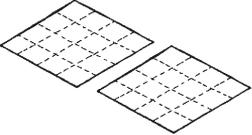
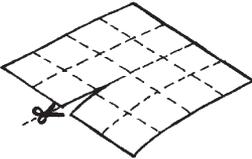
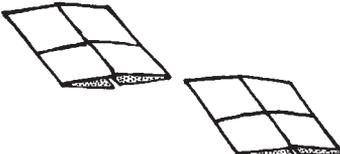
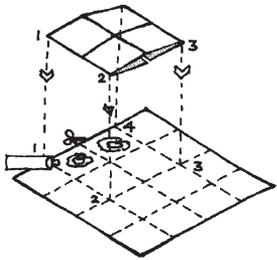
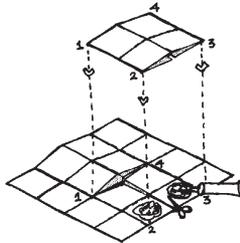
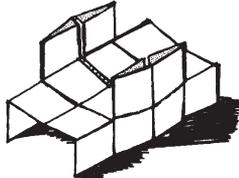
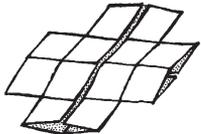
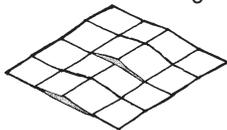
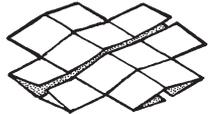


- 8 Similarly, sew the forearms and legs (one piece each), with thread hinges. The acrobat is now ready. Hold the broomstick between the thumb and index finger. Try to twirl the broomstick. The acrobat will wildly swing its arms and legs. You can make creative variation in this dynamic puppet.



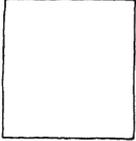
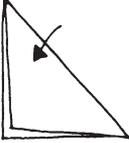
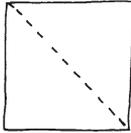
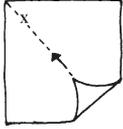
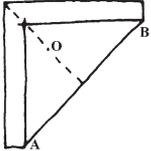
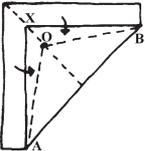
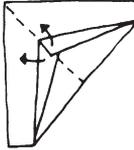
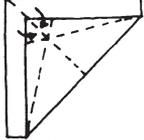
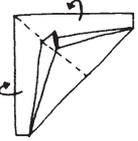
The Never Ending Book

You could flip this fourteen-page book from start to end, and then automatically return to the start!

 <p>1 Fold 16 small, equal sized squares in two squares (10 - cm). They will look like 4 x 4 pieces.</p>	 <p>2 Take one 4 x 4 piece and cut it along the midline to make two 4 x 2 pieces.</p>	 <p>3 Fold the doors of both 4 x 2 pieces.</p>
 <p>4 Take the other 4x4 square and cut it along the midline only up to the centre point. Apply glue to the two little squares and stick one 4 x 2 piece as shown.</p>	 <p>5 Again cut the midline from the other end to the centre point. Apply glue on the two little squares as shown, and stick the second 4 x 2 piece in place. The flexagon is complete now.</p>	 <p>6 The assembly shows two 4 x 2 beds, placed side-byside. The two 4 x 2 pieces have their folded doors facing each other.</p>
 <p>7 Now hold the tips of the head and foot rest and fold them outwards to get a flat, cross shape.</p>	 <p>8 On opening out the middle flaps of the cross there will be a flat formation with 16 little squares in it. You can start your 14 page, picture book from here. Each 2 x 2 piece would represent one page.</p>	
 <p>9 Once again open out the middle flap to get the next four pages. There will now be 12 (2 x 2) pages. These will be the first four pages. Open out the middle flaps again to get the next four pages.</p>	 <p>10 On opening the middle flaps of the doors you will get a cross shape and pages 13 and 14.</p>	

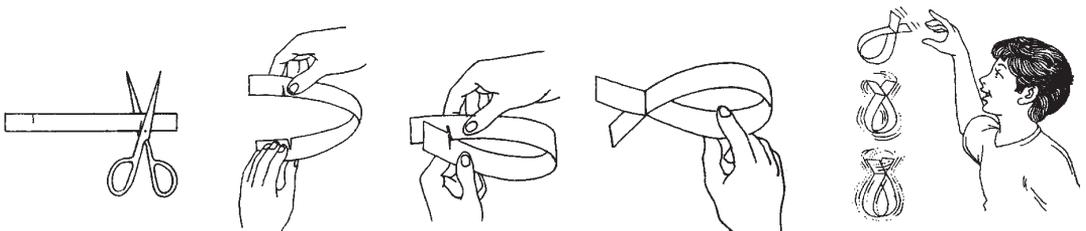
Flapping Butterfly

This simple paper butterfly flaps its wings like a real one.

 <p>1 Take a 15-cm square paper.</p>	 <p>2 Fold it along the diagonal.</p>	 <p>3 And reopen.</p>	 <p>4 Fold right corner to X, 2-cm before the top left corner.</p>
 <p>5 Mark a point O about 1.5-cm from X.</p>	 <p>6 Crease the lines OA and OB.</p>	 <p>7 Fold them up.</p>	 <p>8 Fold little triangles into a standing nose.</p>
 <p>9 Fold the model along the dotted diagonal...</p>	 <p>10 into half.</p>	 <p>11 Cut along the dotted lines to make the wings and antennae.</p>	 <p>12 Hold the front tip of the butterfly with your left hand and pull the arrow down with you right hand to make the butterfly flap its wings.</p>

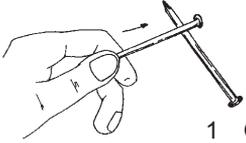
Flying Fish

Cut a long strip of paper about 2-cm wide. Leave 1 cm from the ends and cut halfway slits as shown. Interlock the slits to make the Flying Fish. Throw it in the air see it come tumbling down. Experiment with different papers, shapes and sizes of fishes.

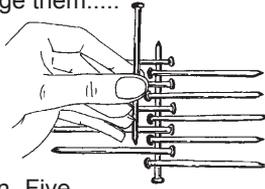


Balancing Nails

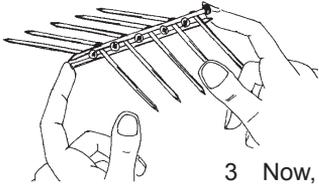
Can you balance a dozen nails on the head of one nail?



- 1 Get a dozen 10-cm long nails. Arrange them.....

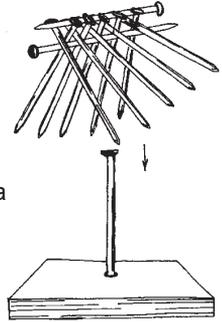
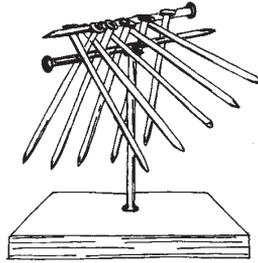


- 2 ...in the order as shown. Five nails have heads to the right: the other five have heads to the left.



- 3 Now, grip the ends of the two vertical nails and lift up the entire assembly.

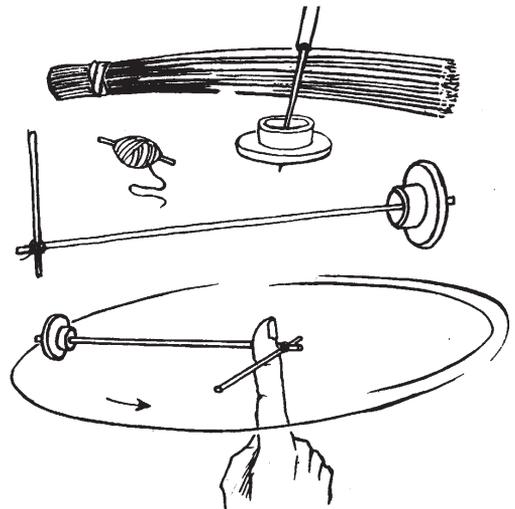
- 4 On a wooden block hammer a 12-cm long nail.



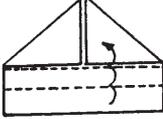
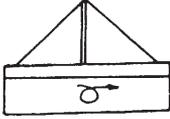
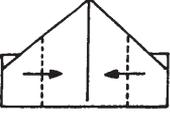
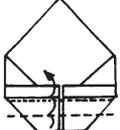
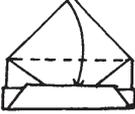
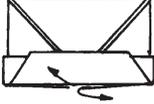
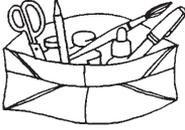
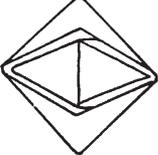
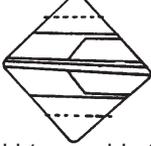
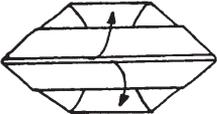
- 5 Gently place the assembly on the head of this nail. You will be surprised to see the entire assembly neatly resting on a dozen nails resting on the head of one single nail. The assembly is quite stable and you can rock the nails sideways like a swing.

Sudarshan Chakra

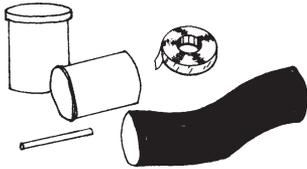
Cut two sticks from a broomstick - one long 15 cm and the other short 6 cm. Tie the sticks tightly with a string as shown in the drawing. Poke a hole in the rubber cap of an injection bottle, or else in the eraser from your geometry box. Insert the rubber cap in the long broomstick. Now place the joint of the sticks on your right hand index finger and rotate the assembly as shown. You will be surprised to see that the sticks rotate around your finger like a Sudarshan Chakra without falling. As a matter of fact, the faster you rotate the sticks, the more stable and balanced is the assembly. This simple toy will give children a good feel for Centrifugal and Centripetal force.



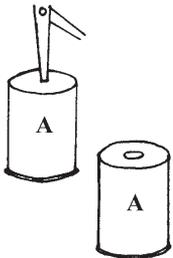
Raja Cap, Nehru Cap, Kulu Cap

 <p>1 Take a double spread newspaper sheet and fold it into half.</p>	 <p>2 Keep the folded edge on top and fold the top left and right corners to the middle fold line.</p>	 <p>3 Fold up the top layer of paper from the bottom into half. Then double fold it.</p>	 <p>4 Now upturn the paper.</p>
 <p>5 Bring the right and the left edges to the middle line and crease.</p>	 <p>6 Hold the bottom right and left hand corners.</p>	 <p>7 Fold the bottom portion into half and tuck the edge inside.</p>	 <p>8 This cap looks like a KING'S CAP.</p>
 <p>9 Now fold the top point of the King's cap to the mid-point on the base and tuck it in.</p>	 <p>10 Open out the long edges and wear it like a ...</p>	 <p>11 NEHRU CAP.</p>	 <p>12 Invert the Nehru cap and use it as a very nice purse.</p>
 <p>13 Slowly press the purse and squash to flatten it.</p>	 <p>14 Fold top and bottom points along dotted lines and tuck them in the pocket.</p>	 <p>15 Open out the line in the middle to make a new cap.</p>	 <p>16 This is a BOX CAP or a KULU CAP.</p>
 <p>17 This famous cap is worn in Himachal Pradesh.</p>	 <p>18 The corners of this cap can be straightened to form a square box.</p>	 <p>19 One box can be overturned as a lid on the other to make a closed gift box.</p>	

Balloon Pump

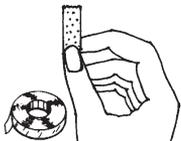
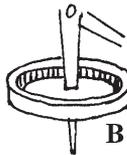


- 1 You will need two film-reel bottles, 15 cm of old cycle tube, old refill or Frooti straw, and cello-tape.



- 2 Make a hole in the base of film-reel bottle A by using a divider point. Widen this hole by gently rotating the pointed end of a scissors. The hole should be about 1-cm in diameter and should not have any burrs.

- 3 Make a similar hole in cap B.



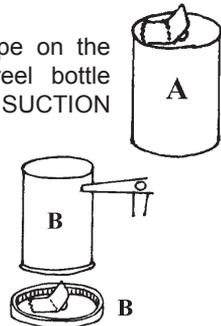
- 4 Take 3-cm of sticky tape. The dotted side shows the 'sticky' side.

- 5 Fold 1-cm of the sticky part on itself. The lower 1-cm would still be sticky. Prepare two such tapes.



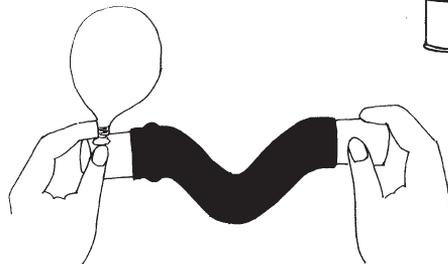
- 6 Stick the glue part of one tape to the cap. The tape will act like a hinge. It will open and close like a valve. This will be the DELIVERY VALVE.

- 7 Paste the other tape on the base of the film-reel bottle A. This will be the SUCTION VALVE.



- 8 Take another film-reel bottle B and make a small hole on its cylindrical surface. Press fit a short add gel pen refill in it for the delivery pipe. Fix the cap with the delivery valve (Fig 6) to bottle B.

- 9 Cut a 15-cm long piece from an old bicycle tube. Stretch and slide the tube over both the bottles as shown. The bottles will be separated by 7-8 cm of cycle tube. This rubber tube acts like a pair of bellows.



- 10 Now hold a medium size balloon in the delivery pipe. Fix it to the pipe with a rubber band to prevent any air leak. Now on repeatedly pumping the cycle tube by holding the two bottles, the balloon can be inflated. You can "POP" a balloon with this simple pump.

