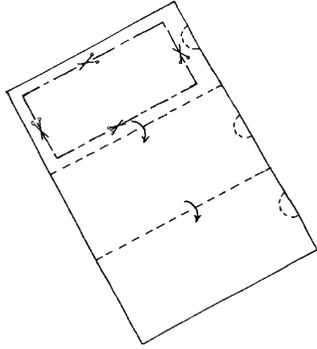
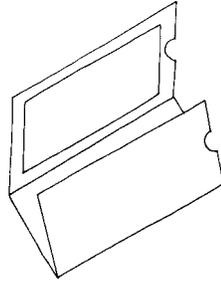


A COLOURFUL SURPRISE

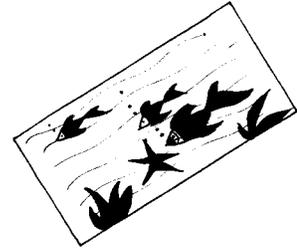
You need a card sheet, an old transparency, glue, scissors and sketch pens to make this toy. As you pull the transparency, the outlines of the fish in the aquarium surprisingly become colourful!



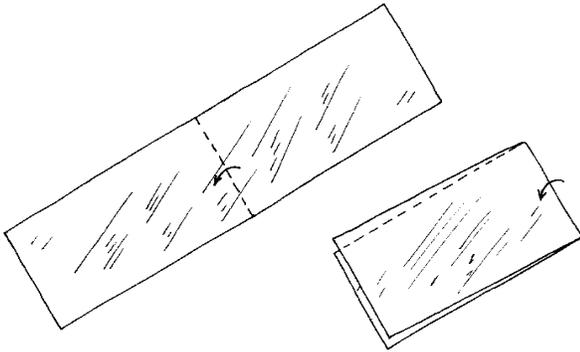
1. Take a card sheet 21 cm x 12 cm. Fold it into three. Cut out a window from the top rectangle. Cut semicircles on the right edge.



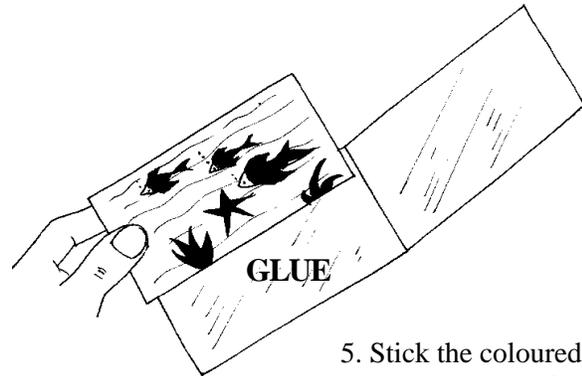
2. Fold the card sheet into such that the window comes on top. This is the folder.



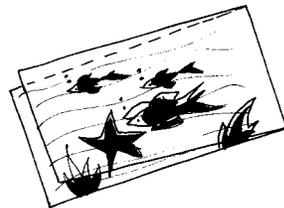
3. On a white card sheet 6.5 cm x 6 cm draw a picture of an aquarium with fish swimming. Colour the fish.



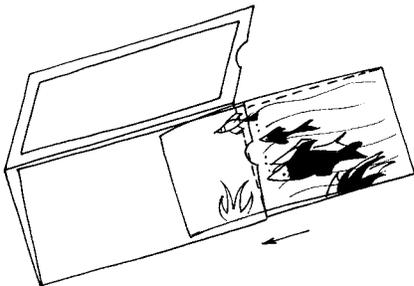
4. Cut a piece from an old transparency 6.5 cm x 12 cm. Fold it into half.



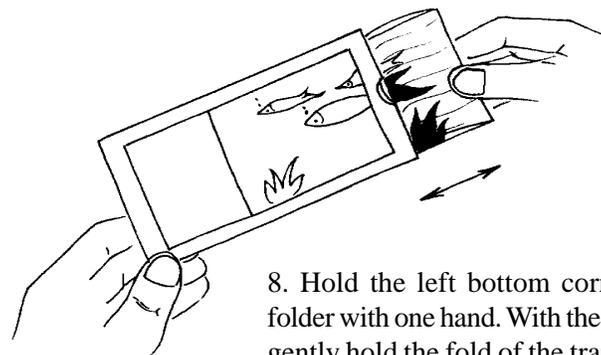
5. Stick the coloured card sheet on one half of the transparency as shown.



6. Fold the transparency in half. Now draw the outlines of the fish etc. on the top transparency with a sketch pen.



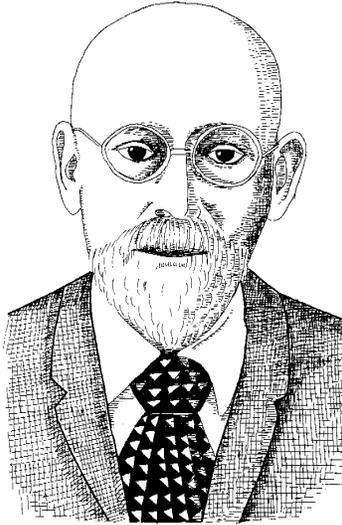
7. Slide the transparency in the folder. The colourful card sheet will be hidden. The transparency with the outline will be on top. Now close the folder window.



8. Hold the left bottom corner of the folder with one hand. With the right hand gently hold the fold of the transparency and pull it out. You will be surprised to find a colourful aquarium emerge out.

POLISH PEDAGOGUE

CHILDREN ARE THE OLDEST PROLETARIAT OF THE WORLD!



Few people would have ever heard of Janusz Korczak, a Polish-Jewish children's writer and educator. He was a trained medical doctor who specialised in children's diseases. He founded the first national children's newspaper, trained teachers and worked in juvenile courts defending children's rights. His books *How to Love a Child* and *The Child's Right to Respect* gave parents and teachers new insights into child psychology. Generations of young people had grown up on his books, especially the classic *King Matt the First*, which tells of the adventures and tribulations of a boy king who aspires to bring reforms to his subjects. He set up orphanages in the dark slums of Warsaw and lived among children in real life, not just in the imagination, for he saw them as the salvation of the world.

Janusz Korczak was born Henryk Goldszmit – a Polish Jew. But it would be by his pseudonym Janusz Korczak that he would be remembered. Korczak felt that within each child there burned a moral spark that could vanquish the darkness at the core of human nature. To prevent that spark from being extinguished, one had to love and nurture the young, make it possible for them to believe in truth and justice. The titles of his books are suggestive of his innate sensitivity – *Confessions of a Butterfly*.

Because Korczak was determined to live both as a Pole and a Jew in pre-war Poland, he was not above criticism. Jews saw him as a renegade who wrote in Polish rather than Yiddish or Hebrew. The right-wing Poles never forgot that he was a Jew. The radical socialists and the communists of the interwar period saw him as a conservative because he was not politically active, and the conservatives saw him as a radical because of his socialist sympathies.

The children in the orphanage often performed the famous play *The Post Office* written by Tagore.

Korczak loved children deeply; he devoted all the

moments of his life to them. He studied them and understood them more thoroughly than most. Since he knew children, he did not idealise them. As there are good and bad adults, all kinds and sorts, so too Korczak knew there are all kinds of children. Korczak saw children for what they were, and was at all times deeply convinced of their integrity. He suffered from the fact that

often children were treated badly, not given the credit they deserved for their intelligence and basic honesty.

On August 6, 1942 the Nazis ordered the two hundred children of the orphanage to be taken to the train station, to be packed into railroad carriages. Korczak, knew that the carriages were to take the children to their death in the gas chambers of Treblinka.

To assuage the children's anxiety, Korczak told them that they were all going for an outing in the country. On the appointed day the oldest child led them. As always, even in this terrible situation, Korczak had arranged things so that a child rather than an adult would be the leader of other children. He walked immediately behind this leader, holding the hands of the two smallest children.

Korczak sacrificed himself to keep his trust with the children, when he could have easily saved himself. With his many friends in high places it was very easy for him to escape. But as the head and leading light for thirty years of the Jewish orphanage in Warsaw, Korczak was determined not to desert any of the children who had put their trust in him. As he said to those who beseeched him to save himself: "One does not leave a sick child in the night," and "One does not leave children in a time like this."

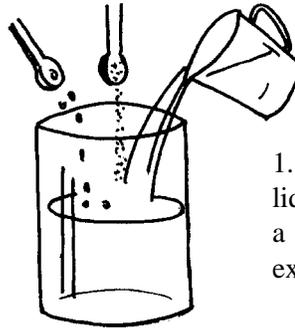
The children remained calm throughout, as if in silent protest, or contempt of the murderers. One of the German guards told Korczak to leave. But Korczak refused, as before, to separate himself from the children, and went with them to the gas chamber in Treblinka.

(Janusz Korczak's biography *KING OF CHILDREN* by Betty Jean Lifton can be downloaded from <http://arvindguptatoys.com>)

SOAP BUBBLES

Making soap bubbles is fun.

While playing with them you can also learn some basic principles of science.

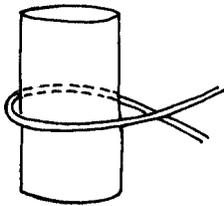


Glycerine

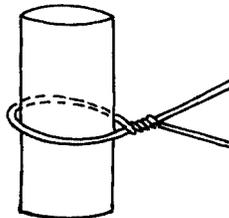


Water

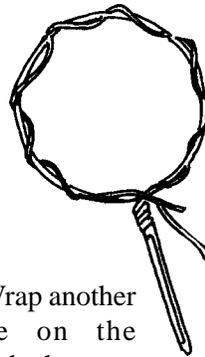
1. Mix bits of scraped soap, detergent, liquid soap and water in a glass. Add a spoon of glycerine. Try and experiment to get the right mix.



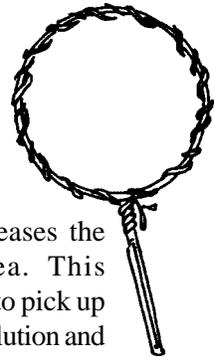
2. Wrap a piece of thin wire on a cylindrical object.



3. Twist the ends of the wire to make a handle.



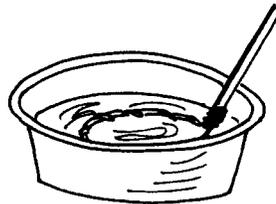
4. Wrap another wire on the circular hoop.



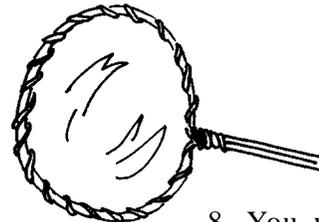
5. This increases the surface area. This enables you to pick up more soap solution and make bigger soap bubbles.



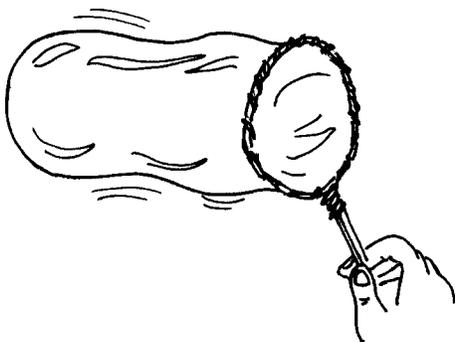
6. Bend the handle upwards at an angle of 45 degrees.



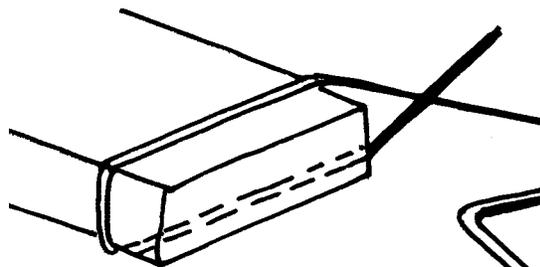
7. Dip it in soap solution.



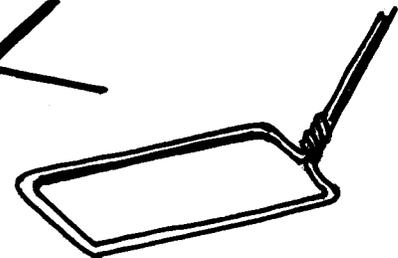
8. You will see a soap film on the hoop.



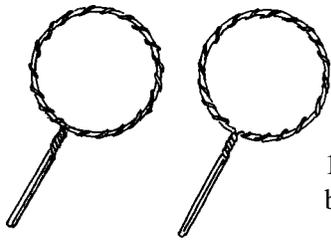
9. Now move your hand briskly to produce an elongated soap bubble.



10. Twist the wire on a rectangular piece of wood...



11. ...to make a rectangular soap bubble blower.



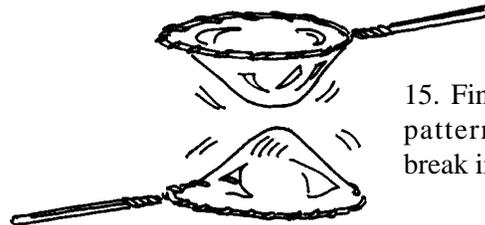
12. Make two circular bubble blowers.



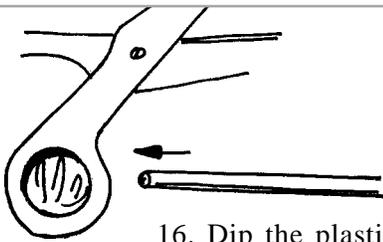
13. Dip them in soap solution and bring them close.



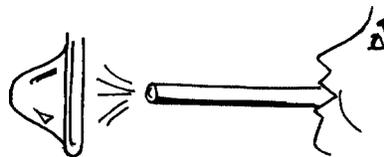
14. Now slowly separate them to see a beautiful conic section.



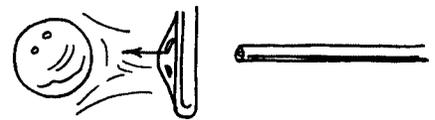
15. Finally the pattern will break into two.



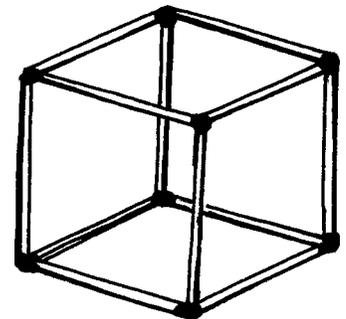
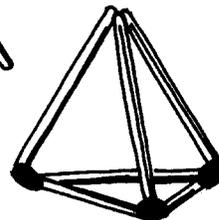
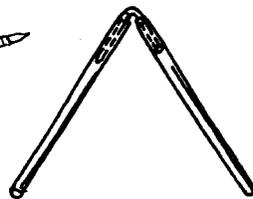
16. Dip the plastic handle of a scissors in soap solution.



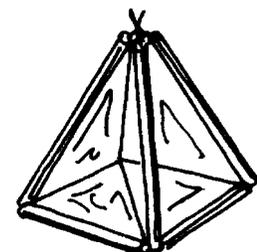
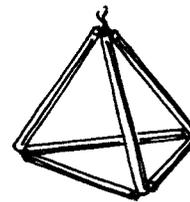
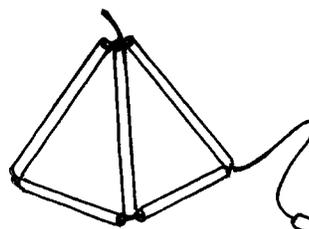
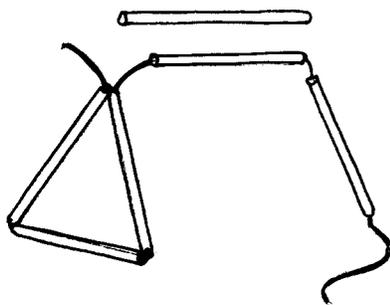
17. Blow with a plastic straw...



18. ...to produce a perfect soap bubble.



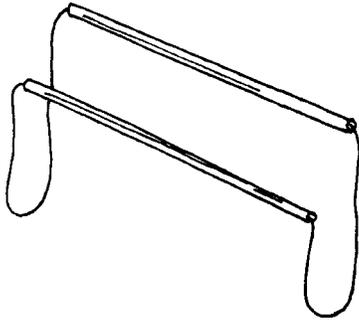
19. Bend paper pins and insert them as joints in old ball pen refills to make tetrahedrons, cubes etc. Apply M-seal on all the vertices. Let the adhesive dry. Tie a thread and dip these shapes in soap solution. On lifting, you will see an amazing pattern of soap films.



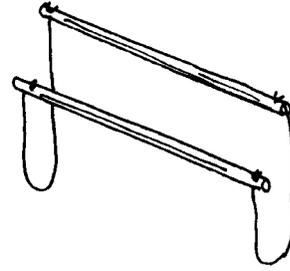
20. Cut several stiff plastic straws of the same length. Weave thread through them to make a 3-D shape like a tetrahedron. Tie the ends of the thread to keep the tetrahedron shape intact. Dip the tetrahedron in soap solution. Then remove it to see a wonderful soap film pattern.

LARGE SOAP FILMS

Adding glycerine to the soap solution makes the film more elastic. The films last longer and look shiny.



1. Take two long straws and string. Thread 90 cm of string through two plastic straws. Knot the strings.



2. Make holes with needles on the ends of the straws and attach the threads as shown.



3. To make long lasting films add a few spoons of glycerine to the soap solution. Drop the straw-thread frame into the soap solution.



4. Holding the straws, gather a film across the strings. Pull the straws apart to stretch the film open. Pull upwards, gently filling the film with air. With a small jerk, snap the bubble free of the frame. You will be delighted to see large, glistening soap bubbles floating in the air.

BRAILLE CUBE

Visually impaired people can learn the Braille language with this wonderful cube.
It is being manufactured by a charity *Vidya Vrikshah* based in Chennai and sold for just two rupees!

The device is similar to a Rubik's cube, but has different patterns of raised dots on its sides corresponding to the Braille representation of letters in any language. The raised dots appear in one or more of the six positions arranged in three columns of two rows on each side of the cube.

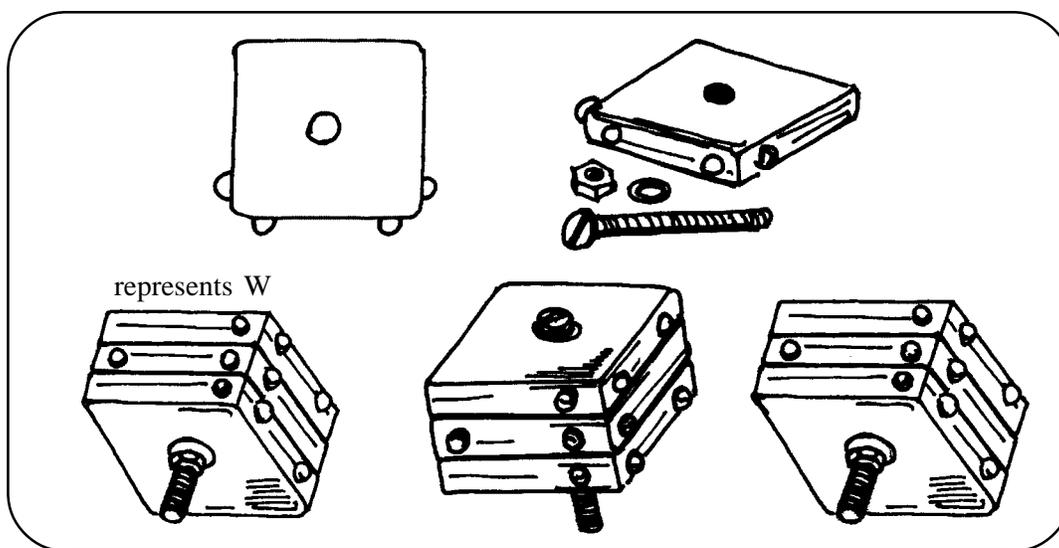
The cube consists of three segments which can be rotated about a common axis. Thus different dot patterns corresponding to different letters can be formed on its sides.

Each letter of the alphabet of any Indian language (or

for that matter, any world language) can thus be represented on any one side of the cube.

The dot positions are numbered 1 to 6 and different patterns of dots on the cube and the letters to which they correspond are as seen in the pictures below.

With six dot positions, Braille admits of a maximum of 63 dot patterns, more than enough to represent for representing all the letters of any alphabet. All these can be formed on any side of the cube. With a ready chart containing the letters (and their dot patterns) any person can learn the use of the cube within an hour.

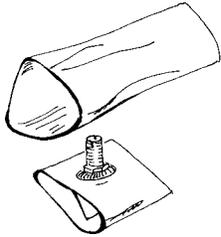


a	b	c	d	e	f	g	h	i	j
k	l	m	n	o	p	q	r	s	t
u	v	w	x	y	z				

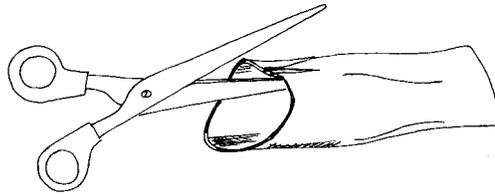
More details can be found at: <http://www.vidyavrikshah.org>

RUBBER STAMPS

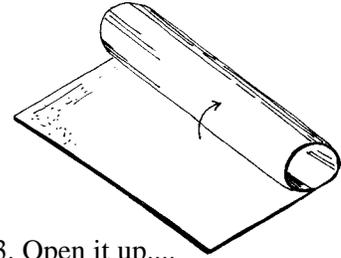
Simple rubber stamps can be made using pieces of old cycle tube, blocks of wood and glue. Children can make lovely collages using these low-cost rubber stamps.



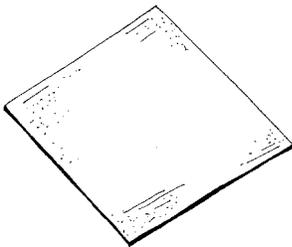
1. Take a piece of old cycle rubber tube.



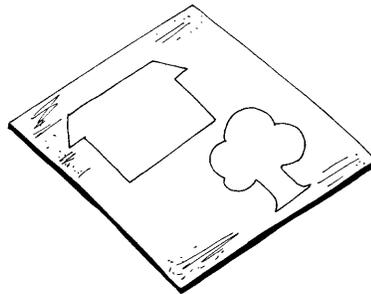
2. Cut it along the length.



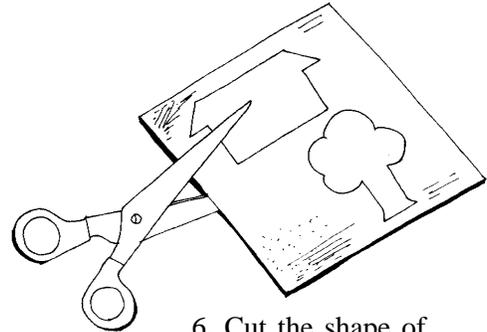
3. Open it up....



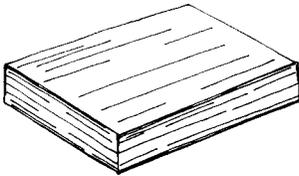
4.to make a flat rubber sheet.



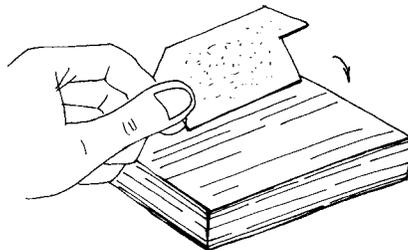
5. Draw a picture of a tree and a house on it.



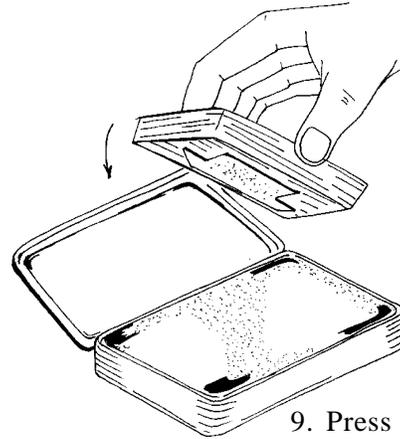
6. Cut the shape of the house and tree.



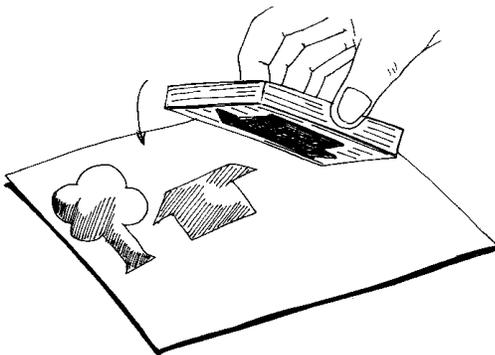
7. Take a block of flat wood.



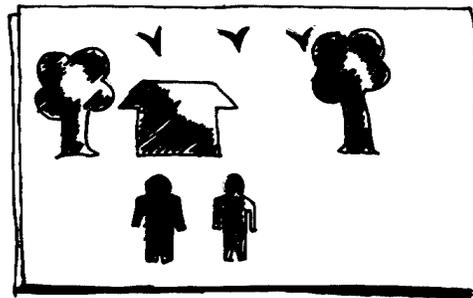
8. Stick the rubber house cutout on the block using rubber adhesive (cycle puncture solution).



9. Press the rubber stamp on the ink pad.



11. Print these shapes on a sheet of paper.



12. Children can make lovely pictures using these low-cost rubber stamps.

LIGHT THE LAMP WITHIN, TEACHER

Inclusion is important. Without inclusion, I will not be able to know that boundaries are meant to be pushed... not to be lived in. Take for example the fact that I clean my house but empty my garbage on the road. That is because the road is not “included” in what I deem to be my own. I feed my own child but do not enquire if the maid has eaten today. This is because her hunger is not included in my hunger.

Teach me to communicate with the simplicity of the child and the nakedness of a flower. Teach me to communicate with people less gifted, less privileged than I am.

I pray to you to teach me to understand the nature of things. Teacher, teach me “to make sense” in an increasingly senseless world so that I am able to understand things around me without the intermediation of soothsayers and spiritual Gurus. In moments of crisis, teach me such that I am able to come to my own conclusions.

As you teach me to deal with moments of crisis – teach me how to come out of them without residual toxicity. For there will be moments in life when I will see cracks in the walls of those who had taught me the meaning of strength and solidity. In those difficult moments, I should not become cynical.

Help me to learn newer ways to learn. And that will make learning a joy for me.

I pray to you to teach me to learn from unusual sources. As people come and touch my lives, as they do small things for me, teach me how I can learn from them – things that no classroom will ever teach. Teach me to learn my sense of duty from the driver of the school van who must rise before I do. Teach me to learn compassion from the Sisters of Charity in whose fragile arms – even death can sleep like a baby. Teach me to learn contentment from the traffic policeman who is paid to inhale carbon monoxide for the 76,800 hours of his life that he has to stand in the middle of the road. Teach me to learn to work unsupervised like the ant and the bee who do not need anyone to breathe down their neck so they add value each new day as they wake up to work.

I pray that you teach me to appreciate the interconnected nature of things. Teach me to appreciate that the trees I fell, the small creatures I kill with

indiscriminate use of fertilisers and pesticides on the ground, the urban decay I cause with my consumptive ways all cause awesome imbalances, in the natural state of things that cause death and destruction and can one day, engulf me. Teacher, tell me why the singing birds are going away. And tell me how I can see them again perched on my window sill.

I pray to you to teach me not just the ability to answer, but also the power to question. It is because everyone is telling me to do as told. Before I know, I might become enslaved in a social, economic and political state in which progress is held hostage because we do not ask questions.

Only if we ask questions, we can get answers. If we get the answers, we can explore how to establish a higher order of things. If we ask the questions, we will also learn to be accountable. We will be more willing to accept that when we ask the questions, we can be questioned too. In that mutuality, trust will emerge and balance itself.

I also pray to you to teach me to say “I do not know.” In all humility, I must admit Teacher, that not always will I have all the answers. When I do not have the answer, teach me to say, “I do not know.” I know it takes courage and self-confidence to say that I do not know. So often I see people keep silent when admission of ignorance could have opened them to new relationships and new knowledge. Teach me the power to say, “I do not know.”

Just as you teach me to say, “I do not know.” I pray to you to teach me to actively seek help.

Higher my achievements and greater my position of power, the more helpless I will become; the less I will know about the state of things. In those moments of my helplessness, my ego will come in my way of seeking help. My workplace will make me feel falsely that seeking help is a sign of weakness.

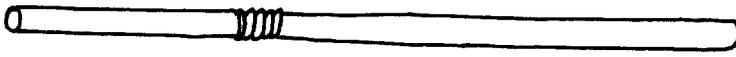
Teach me to seek help from small people. Teacher, teach me that flower needs help from the bee to pollinate. The water needs help from the air to raise itself to the sky.

O’ Teacher, please teach me such that I understand that even the lord of the universe can do with a little help from me. Hence, I have no shame in seeking help from others.

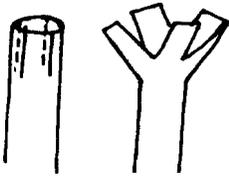
From: Subroto Bagchi’s Convocation Address

FLOATING BALL

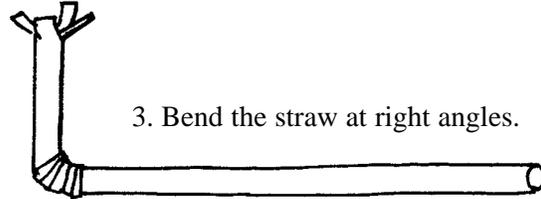
You need a flexi-straw, a film can, a card sheet, a thermocole ball and simple tools to make this toy.
As you blow on one end of the straw the ball surprisingly lifts and floats in the air.



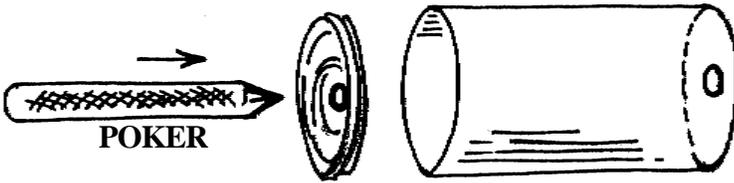
1. Take a plastic straw with accordion pleats. Such a straw can bend at right angles.



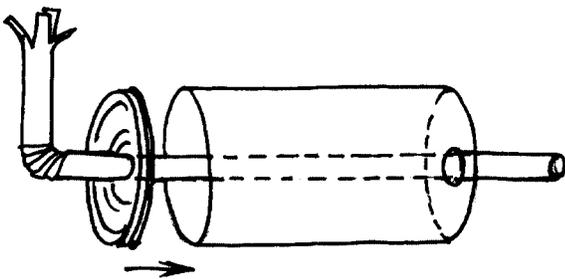
2. Make 4 symmetric vertical cuts (1 cm deep) and flair the petals to make a carriage.



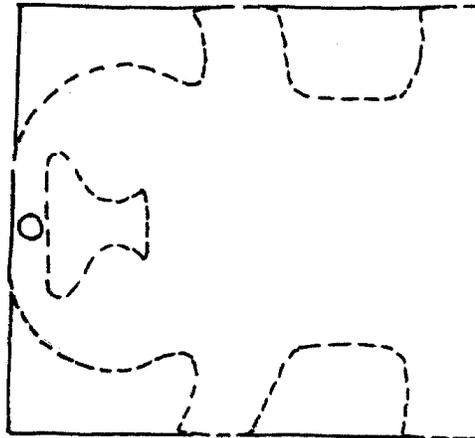
3. Bend the straw at right angles.



4. Make holes in the centre of the base and lid of a film can. The hole should be just big enough for the plastic straw to press-fit.



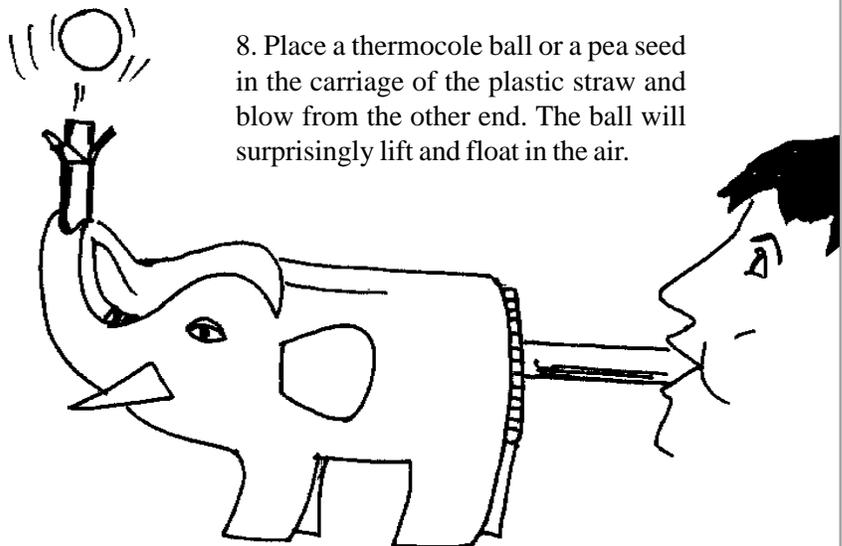
5. Insert the plastic straw in the film can.



6. Draw this picture on a thin card sheet. Cut along the dotted lines.



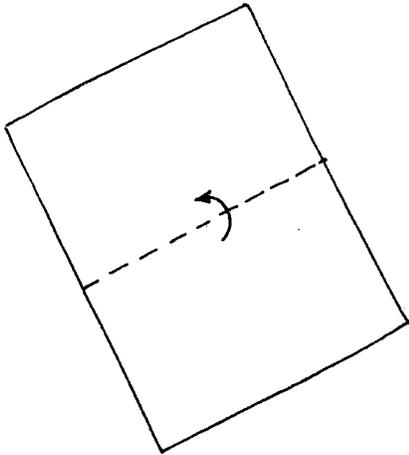
7. Take double pieces of card sheet. Cut the ears, tusks and eyes of the elephant and stick them in place.



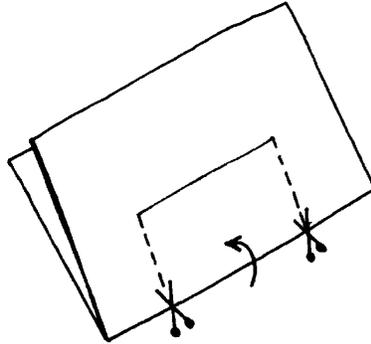
8. Place a thermocole ball or a pea seed in the carriage of the plastic straw and blow from the other end. The ball will surprisingly lift and float in the air.

PAPER POP-UP

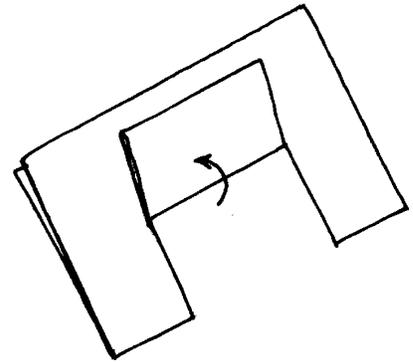
These double slit pop-ups offer a lot of possibilities.
Many more forms are possible with this configuration.



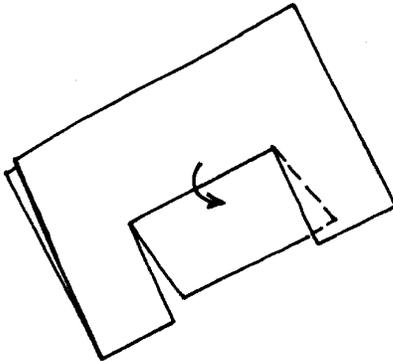
1. Fold a sheet of stiff paper in half.



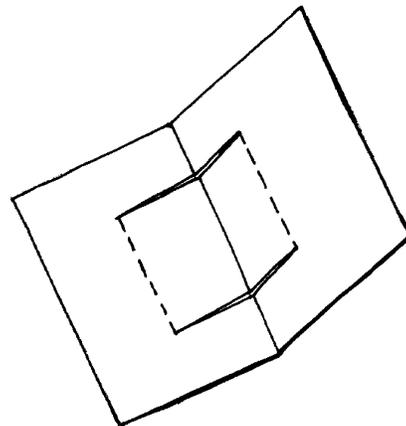
2. Draw two lines from the fold to the centre of the paper and then join them. Cut along the two dotted lines.



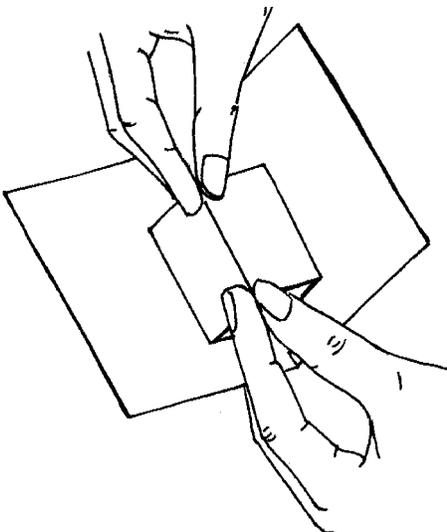
3. Carefully, make a crease between the two slits, folding the paper upwards.



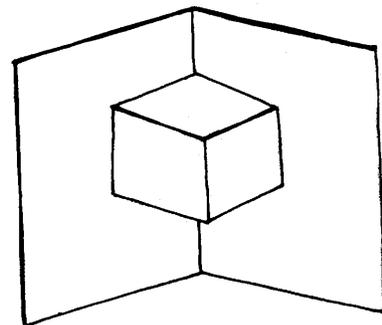
4. Then fold the flap backwards along the same crease-line.



5. Unfold the flap back to its previous position, then open out the card.



6. To form a pop-up. Pull up the central portion of the gutter crease to create a mountain. All the other creases remain as valleys. Close the pop-up shut and press it flat to strengthen all the creases.



7. This pop-up is made with two slits.