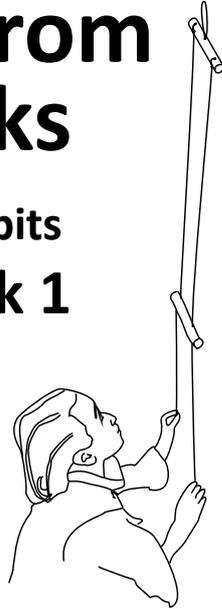


Toys from Sticks

And bits Book 1



Toys from Sticks gives an introduction to making easy toys and tools, and utilising basic materials.

Use must be at your own discretion, no liability can be accepted for damage or injury.

www.toymakersguide.org
croglintoys@gmail.com

Toys from Sticks is part of the 'toymakersguide' project.

Primarily designed for resource poor situations it also helps people be aware of how much can be done with immediately available materials and a bit of ingenuity.

Tools made yourself are empowering but take time and patience and can't compete with good quality equipment.

These toys give a good start to diy toy making. With assistance school aged children can make the toys, and there is always adding decoration for the younger ones.

This book has a minimum of information required for making, more information and problem solving can be found at:

www.toymakersguide.org.

Please let us know of successes and difficulties you encounter using these instructions so it can be improved for other users.
croglintoys@gmail.com

Toys from Sticks

and a few extra bits

Book 1

Extra bits include:

Bottle tops

String, cotton, (thin and medium)

Nails, (old or new)

Wire

Paper, light cloth or plastic and glue for use in 2 of the toys.

Tools can be made, but a hammer and file is needed to make the tools easily.

Toys from Sticks gives an introduction to making toys tools and utilising basic materials.

**Use must be at your own discretion,
no liability can be accepted for damage or injury.**

contactus@croglintoys.co.uk
www.toymakersguide.org

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Toys

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Roarer
Flapping paper
Sock Puppet
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Catch Ball
Pop-up Puppet
Windmill
Whirling Fan
3 bladed fan
Sewing Machine
Parachute
Balancing Dancers
Acrobat-Simple / full

Materials

Straw, tube, thread,
Glue, paper, papier-mache,
Sticks, wood, dowels

Toolmaking

Knife and saw
Binding
Tools from Awls

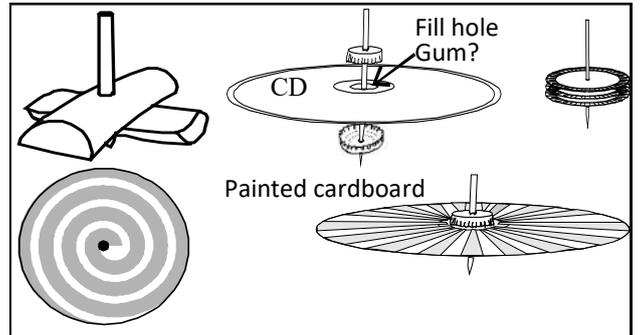
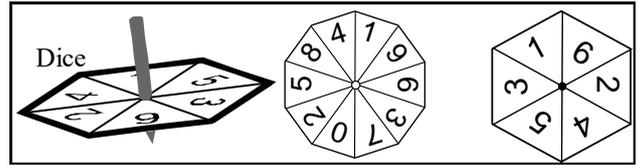
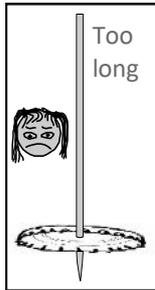
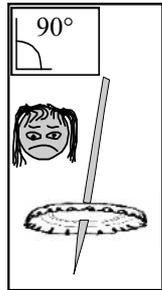
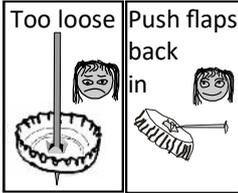
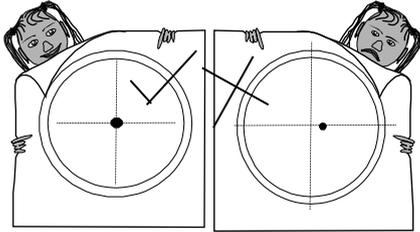
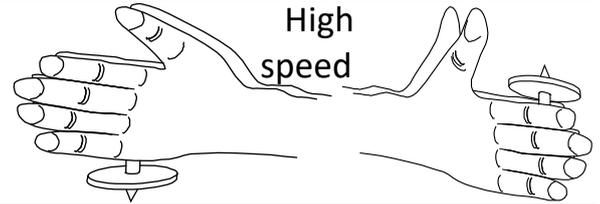
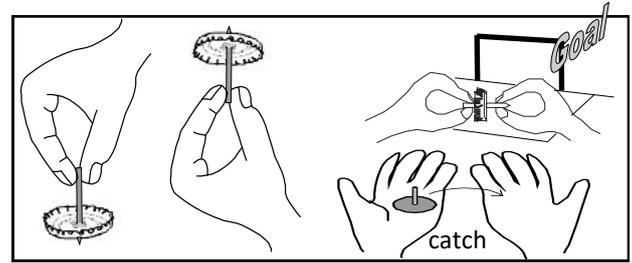
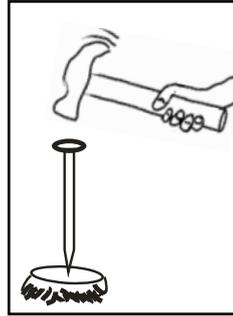
Techniques

Metal working: including
flattening bottle tops.
Woodworking: Cutting,
drilling, hammering.
Threading.

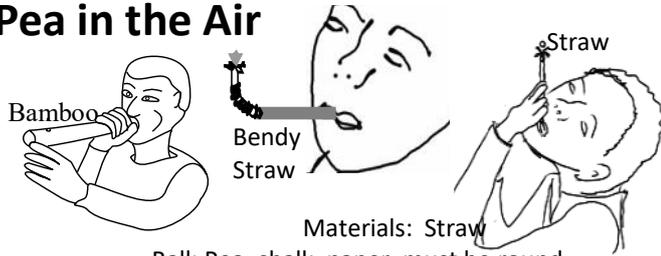
Spinning Top

Materials

- Bottle top
- Pointed stick



Pea in the Air

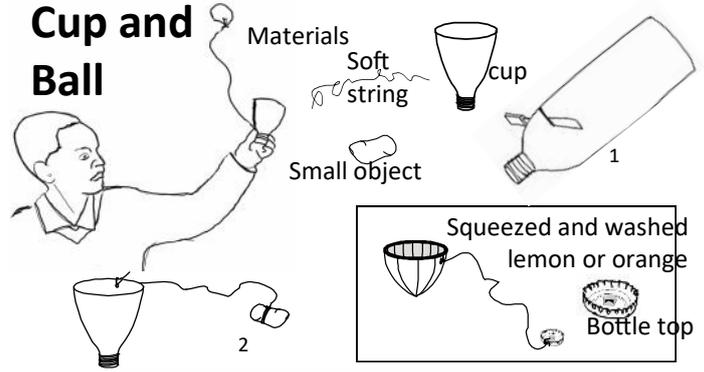


Materials: Straw

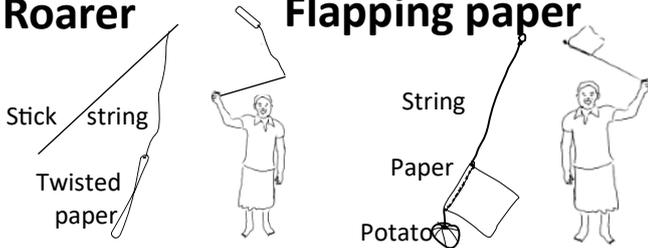
Ball: Pea, chalk, paper, must be round

Hole in the tube must be smooth round and 4-6mm

Cup and Ball



Roarer



Flapping paper

Sock Puppet

Materials:

A clean old sock, Needle and thread or glue or a pen to make the features.

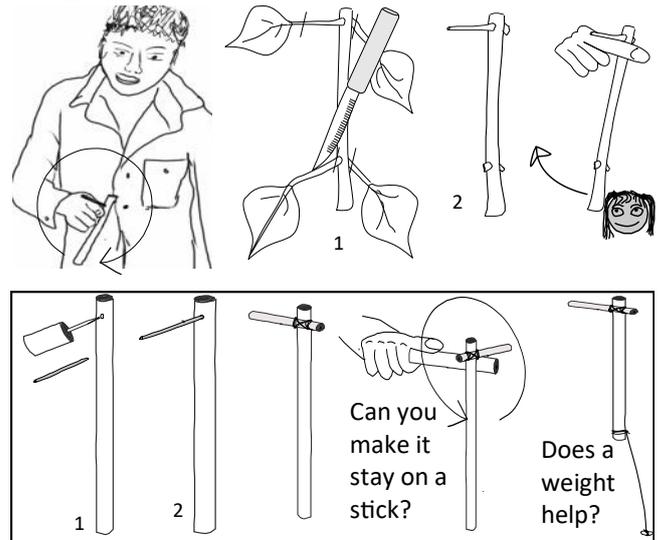
Making: Put your hand in the sock, make a mouth with your thumb.

No more is necessary but

.....Cut a hole for a mouth and glue in a folded card or cloth. Glue, sew or draw eyes, nose and hair.

Magic Stick

Can you make it stay on your finger?

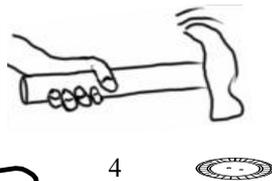
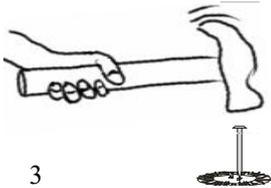
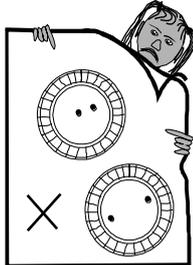
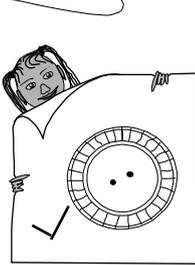
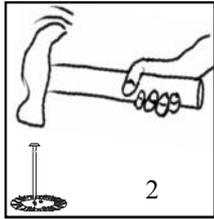
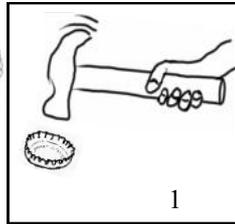


Whizzer

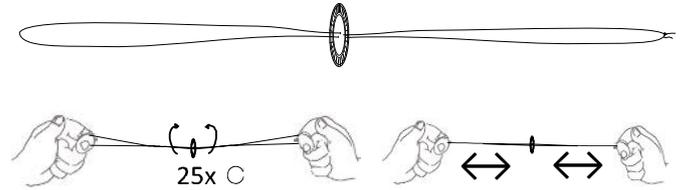
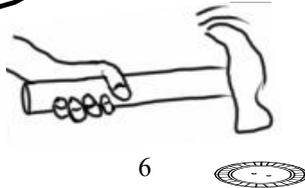
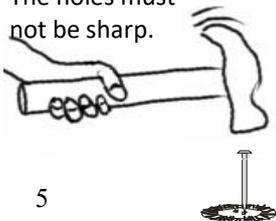
Materials

70cm
Strong cotton

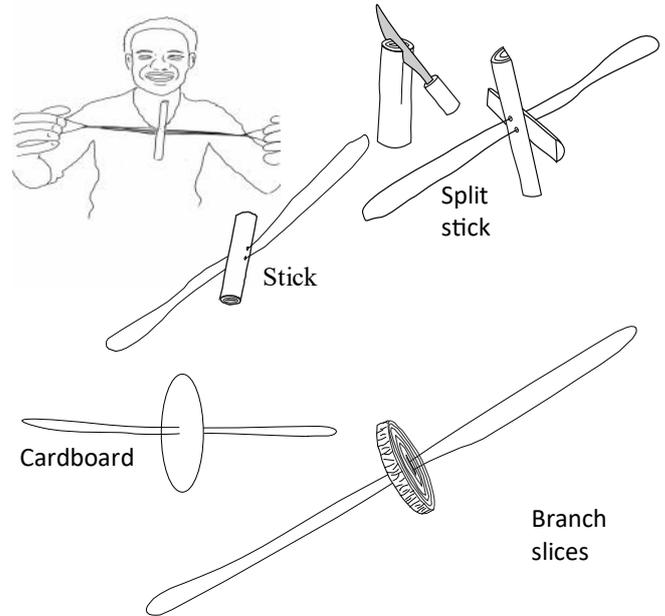
Bottle top



The holes must
not be sharp.

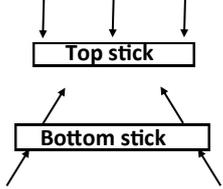


- 1) Spin the top x 25.
- 2) Pull your hands apart, it untwists and spins.
- 3) As the twists finish pull less so the spinning lid can twist the threads up again.



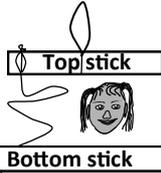
Climbing Stick Climbs to any height.

Materials; 2 short sticks, smooth string.



Drill holes large enough for the string as illustrated by the arrows
3 straight holes for top stick and 2 holes **at an angle** for the bottom stick.

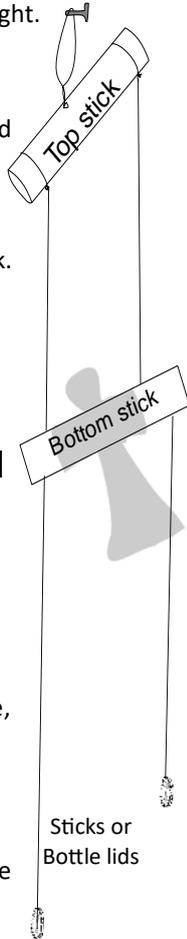
Tie sticks to the end of two long strings.
Thread the string through the bottom stick hole, **outside to inside.**
Tie to top stick.



Thread the other string the same.
Tie a long loop through the middle hole in the top stick.

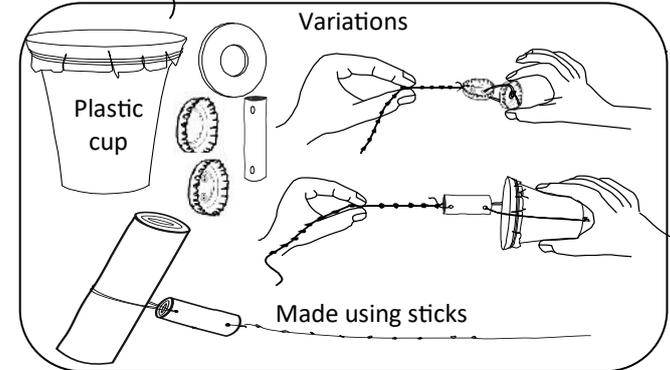
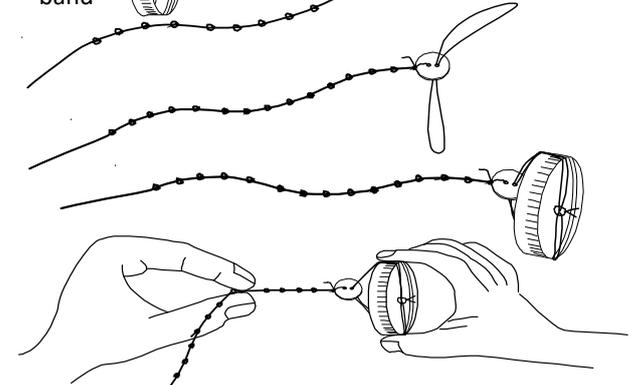


Hang from a high place, it can be on a wall.
The top stick must be able to swing up and down.
To Play Pull down more on one string and then more on the other.



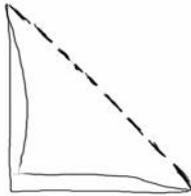
Rat a Tat, makes a lovely woodpecker noise.

Materials
Elastic band, lid, string, Button

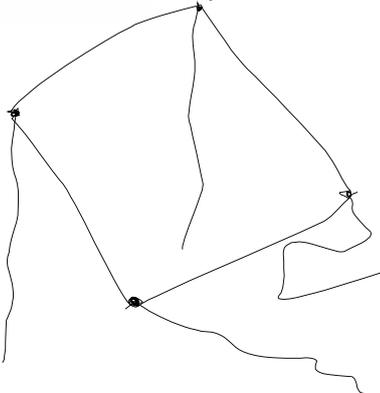


Parachute

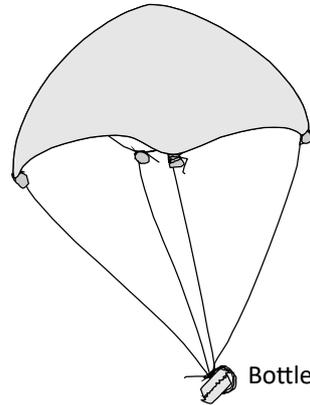
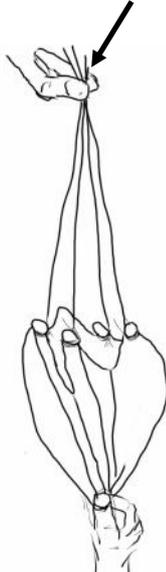
Materials: Paper, cloth or plastic bag, thread, weights (bottle lids).
4 dry peas.



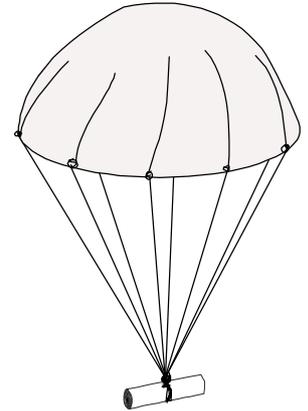
Use a string to tie a pea into each corner of the cloth.



Tie a knot here



Bottle top



Tie on a small weight, bottle lids or a stick.

Playing:

- 1) Loosely roll up the material and fold in the string and weight.
- 2) Throw as high as you can so it has time to unroll and float down.

Problem Solving:

Parachute doesn't open on descent; weight is too light, the strings are not the same length, the 'peas' used are too heavy.

Descent is rapid— weight is too heavy or material too small or rigid.

Developments

Try using more strings or round or rectangular material.
Try a small hole in the middle of the material.

Catch Ball

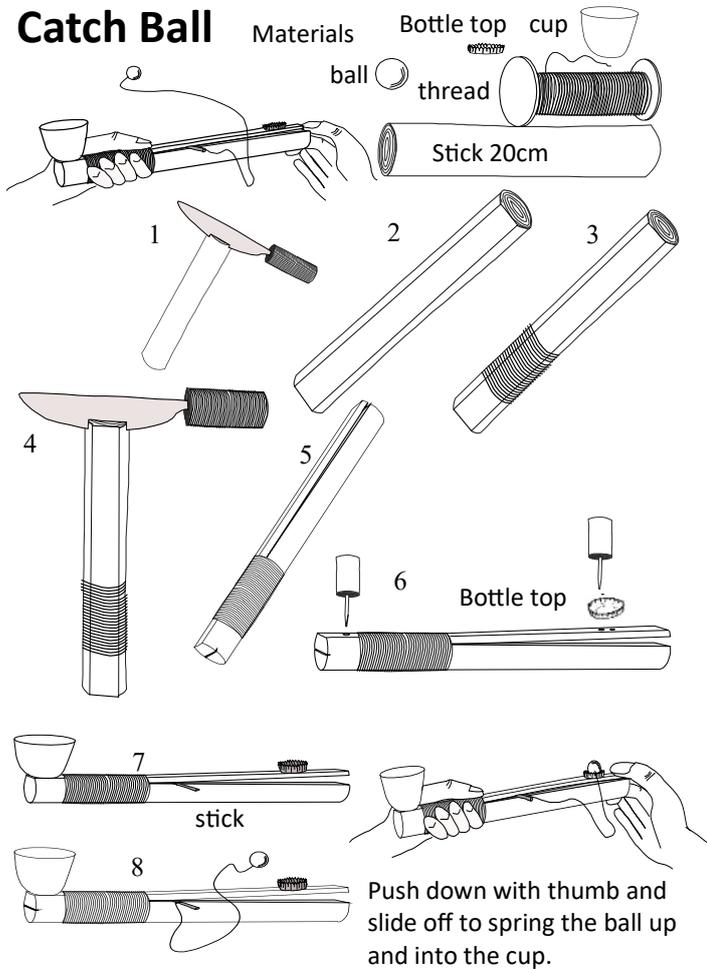
Materials

Bottle top cup

ball

thread

Stick 20cm



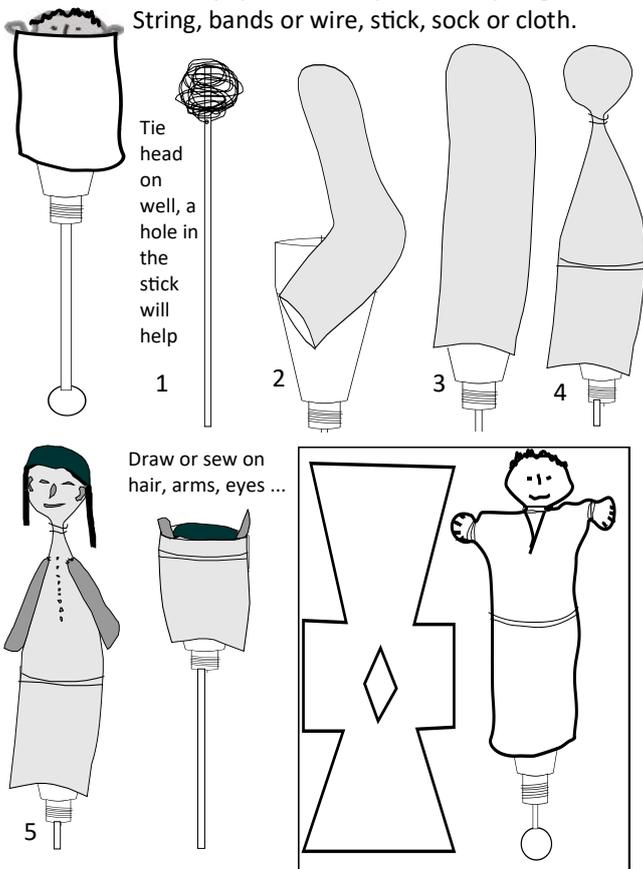
Push down with thumb and slide off to spring the ball up and into the cup.

Pop-up Puppet

Materials A cut plastic bottle or cone shape from paper.

Heads: papier mache, potato, clay or grass.

String, bands or wire, stick, sock or cloth.



Tie head on well, a hole in the stick will help

1

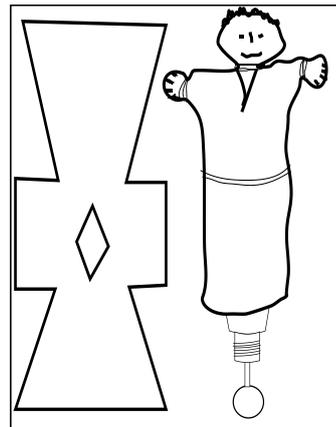
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3

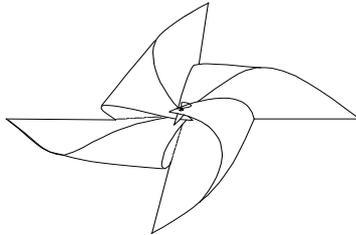
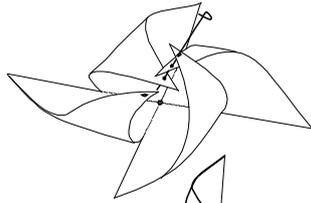
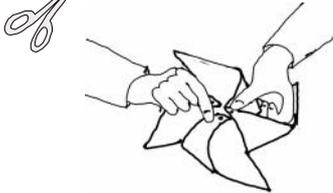
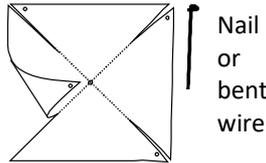
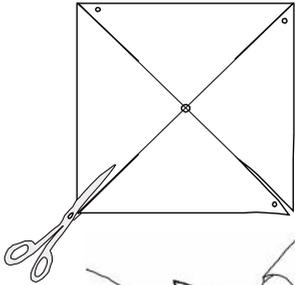
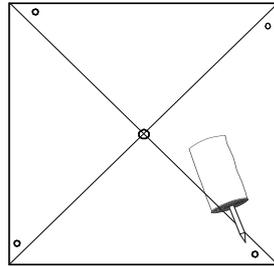
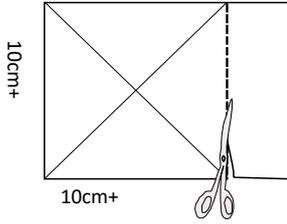
4

Draw or sew on hair, arms, eyes ...

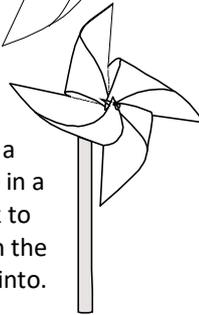
5



Windmill



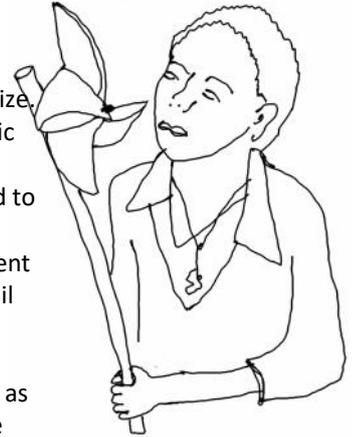
Drill a hole in a stick to push the nail into.



Materials

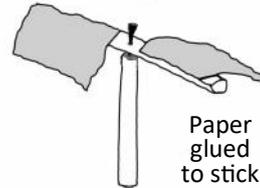
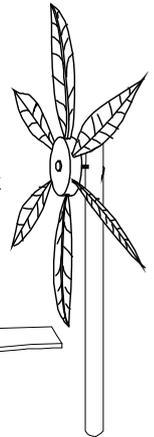
Paper, Wire or nail, Stick
 Beads or spacers
 Paper: 6cm square to any size.
 Waterproof paper or plastic can stay outside.
 Wire or nail, the holes need to be larger than the metal.
 Beads or washers will prevent rubbing on the stick and nail head.
 Some windmills work best with their back to the wind as the blades don't rub on the stick.

What it does: A good windmill will turn with blowing, running or the wind.



Twisted leaf with thorn

Feathers or leaves stuck in potato or clay

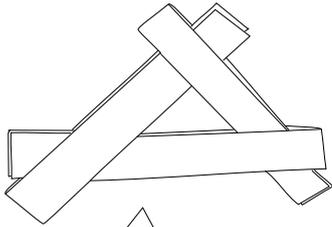
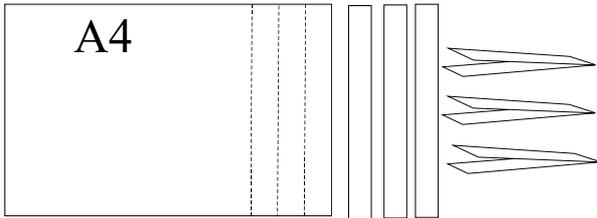


Paper glued to stick

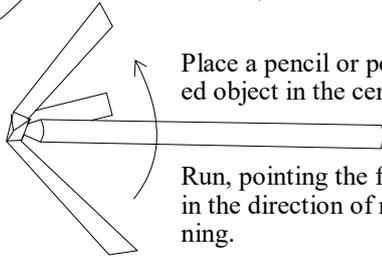


Twisted wood

3 Bladed Fan



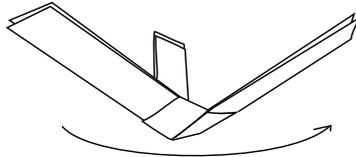
Pull each piece into the centre, pull quite tightly in turn until you start to make a cone.



Place a pencil or pointed object in the centre.

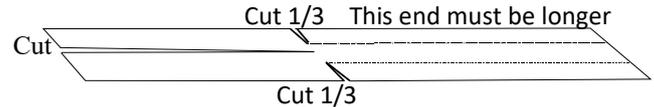
Run, pointing the fan in the direction of running.

3 bladed fans make good whirling fans when dropped.

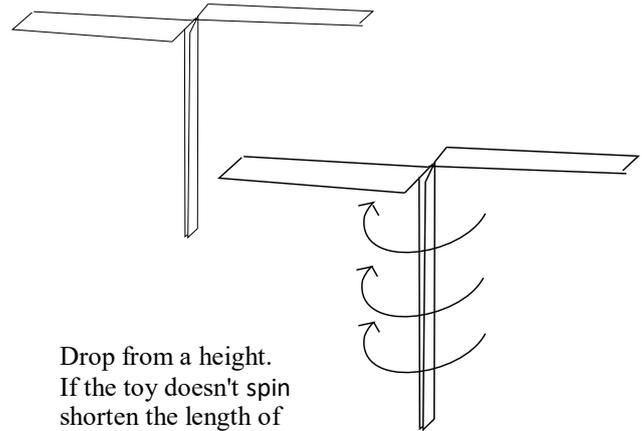


Whirling Fan

Materials; ordinary paper

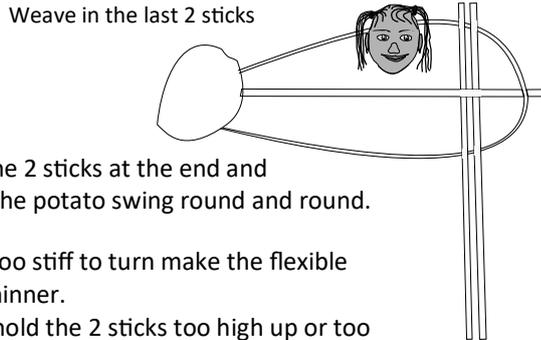
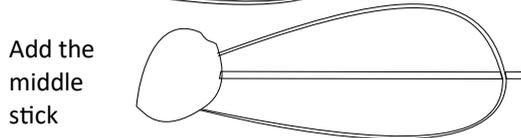
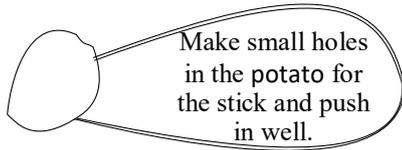
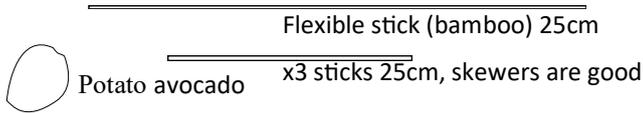


Fold out the blades



Drop from a height. If the toy doesn't spin shorten the length of the blades.

Sewing Machine



Hold the 2 sticks at the end and make the potato swing round and round.

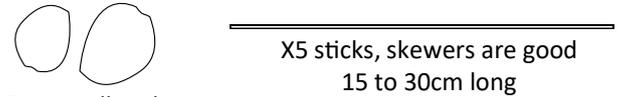
If it is too stiff to turn make the flexible stick thinner.

If you hold the 2 sticks too high up or too firmly it will not click.

Try making a small machine.

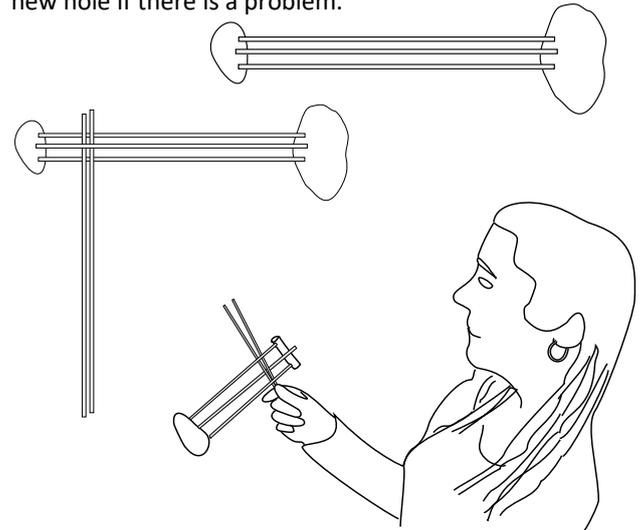
On larger machines a very dry leaf can be placed where the middle stick meets the 2 sticks. Holes will be punched if the leaf is thin enough.

Sewing Machine without flexible stick



One small and one medium sized potato, avocado seeds or onion etc. must be hard enough to hold the sticks well.

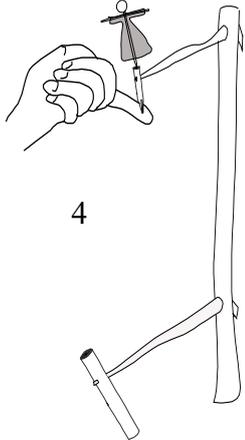
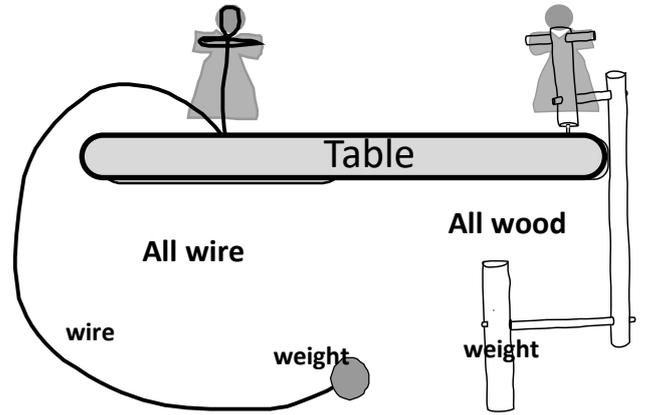
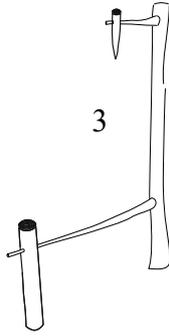
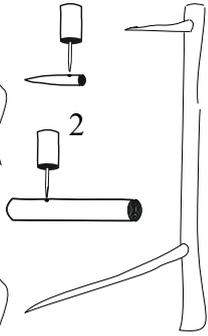
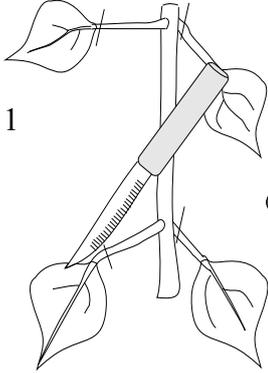
Make starter holes in the veg as shown. The middle stick must leave enough space for the 2 sticks to twist, not too loose or too tight. Easy to redo in a new hole if there is a problem.



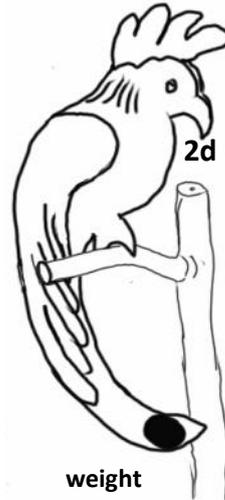
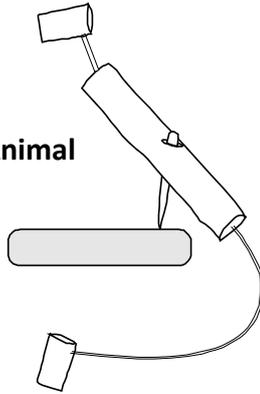
Balancing Dancers

5 styles

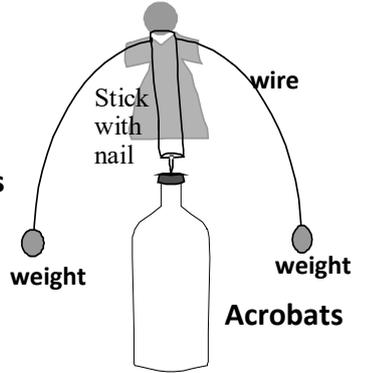
Natural



Animal



Parrot from plywood, cardboard or papier mache, A long tail is important.



Techniques

Cutting

Always cut wood away from you.

Cut paper and string on a smooth soft surface.

A sharp blade is safer to cut with as less force is used.

Sharpen the blade with a file, fine sandpaper, suitable stone or; find a barber, wood or metalworker who will help.

Drilling

The awl is used like a drill with lots of turning and removing the awl to let the waste out. The sharper the awl the better the hole will cut. Don't push too hard or the wood may split.

Holes can be enlarged with the square sharpened awl.

Large holes: Start with a small hole and then use a larger awl. If an even larger hole is needed the hole will need to be scraped with an awl sharpened to be a knife.

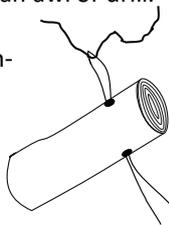
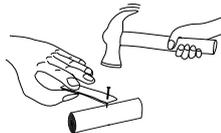
Hammering nails into wood, the more supported the wood is the quicker the job is done.

Small nails can be held in cardboard or a split stick to save finger bashing.

Nails are like wedges and will split small pieces of wood, make a small hole first with an awl or drill.

Threading

If the string wont go through a hole try pushing with a small stick. Try a hook made from an awl. Alternatively use a thin plant stem, fold in half, push through the hole until the bend appears, place the string in the bend and pull back.

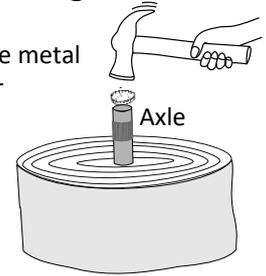


Techniques— Metal Working

Hammering

To shape and flatten metal, place the metal on a hard surface—a stone or better still, a piece of heavy metal, like an axle shaft from a car or bicycle, set in wood to be an anvil.

Soft thick metal (eg nails) can be hammered to any shape on the anvil, it can be filed and cut easily.



Filing: Any quality file will file wood and soft metal.

Cutting: Blue hacksaw blades cut wood and soft metal, the expensive red blades will cut anything.

Thin Metal:

A sharp wedge shaped awl will cut thin metal.

A blunt awl will **bend** the metal .

A pointed awl makes holes, use a soft surface (wood) to hit onto.

A blunt pointed awl punches holes, use a hard surface.

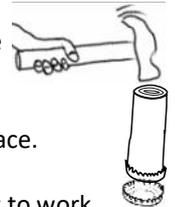
Flatten bottle tops .

Make a tool by bashing a bottle top onto the end of a branch, use this to hit the 2nd top.

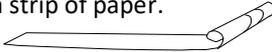
Remove the 2nd top and slowly knock the edges out. Make flat on a smooth hard surface.

Hard metal

Bike spokes, shiny knives, coins are difficult to work cold. Filing may work for you but easier is to ask a metal or wood worker who has a grind stone you can use.



Materials

Straws A straw can be made from a strip of paper.
Add glue where the paper joins. 

Tube or Cone The same but with more strips of paper.

Thread Tailors use lots of threads and can be helpful.
Make **stronger threads** by twisting 3+ threads together.

Shoe repairers thread is strong and will get softer.

Thread and yarn can be salvaged from clothes.

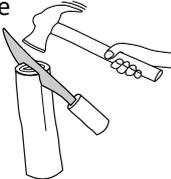
Glue Flour and water, rice, sugar, milk etc make a glue.
Woodworkers' pva glue is excellent, water can be added.
Prit sticks work for most jobs too.

Paper Dry quality paper is easier to crease, cut and make holes in. Paper needs sharp tools to cut well.

Paper can be made **water resistant** by rubbing with candle wax or painting with a thinned coat of paint, varnish or glue.
Gluing paper together will make a strong board.

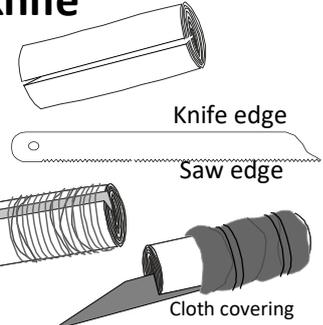
Papier-mâché Strips of paper soaked for a few hours in a weak glue mix can be used to strengthen corners. Strips around a frame will make heads for puppets.
Squash papier mâché into a lid and leave to dry to make wheels and spinning tops.

Sticks and Wood Woods are very different. Some are much harder than others, some sticks will have a soft centre that is good for hollowing out for a tube but not good if you want to make an awl. Splitting off a log will even make square section pieces.

Dowel/rod/smooth straight stick can be made by splitting a piece of straight grained wood and scraping off the edges. 

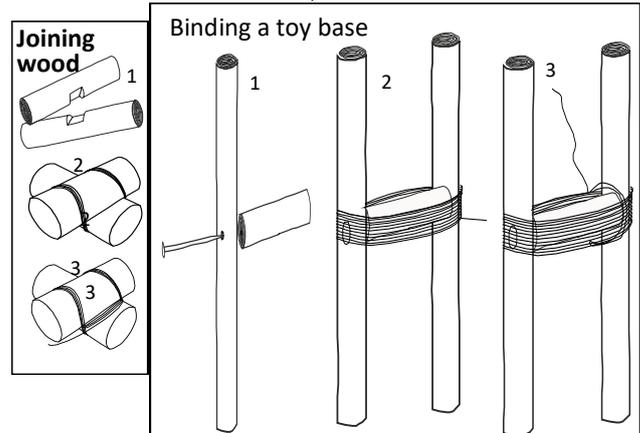
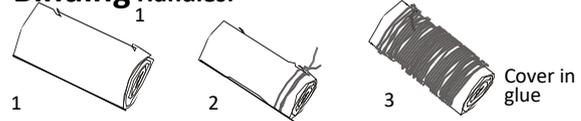
Tools Saw and Knife

An old hacksaw blade will cut wood and sharpen to a knife.
Only a new blade will cut metal well.



Make the knife edge with a good quality file or grind stone.

Binding Handles:



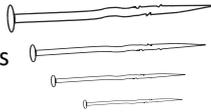
Tool Making

Awl

Hole maker and more.



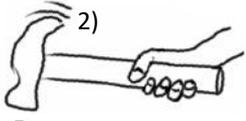
nails



Bike spokes are even better but harder to cut and hammer.

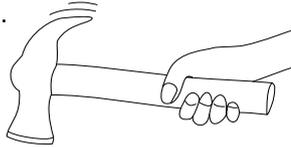


1) damage nail



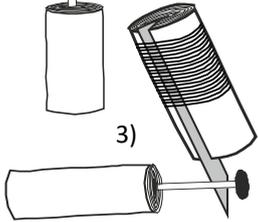
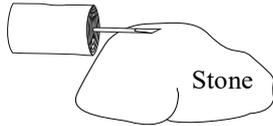
2)

Hard woods will need a hole drilled with a small awl to let the nail in without bending or splitting.



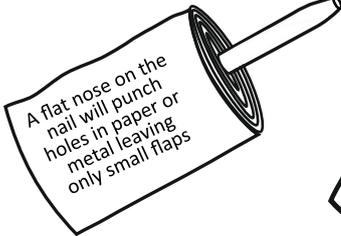
4)

Stone

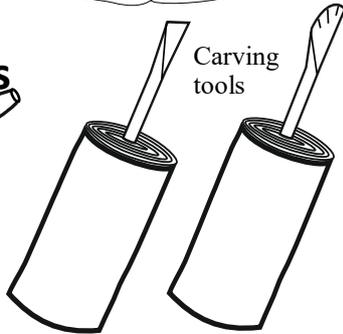


3)

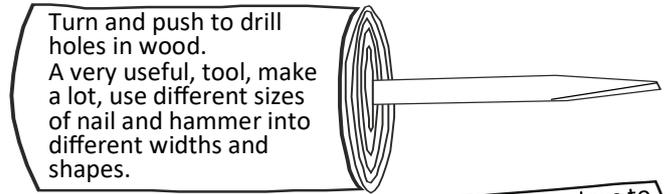
Tools from Awls



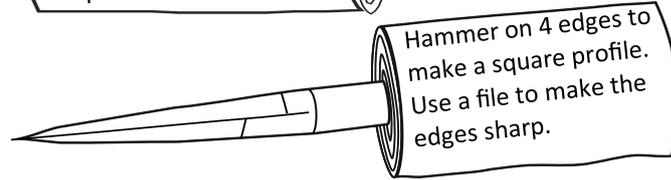
A flat nose on the nail will punch holes in paper or metal leaving only small flaps



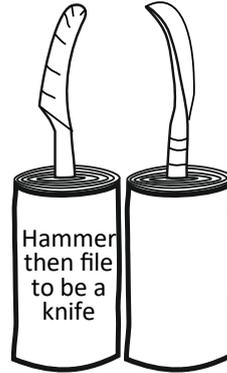
Carving tools



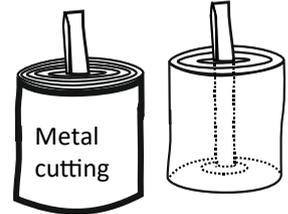
Turn and push to drill holes in wood. A very useful, tool, make a lot, use different sizes of nail and hammer into different widths and shapes.



Hammer on 4 edges to make a square profile. Use a file to make the edges sharp.

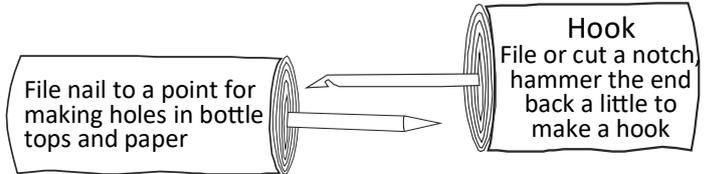


Hammer then file to be a knife



Metal cutting

Make a large nail go through the wood and cut it short. Hammer and file to a wedge shape. The wood will support the metal when cutting bottle tops and thin metal.



File nail to a point for making holes in bottle tops and paper

Hook
File or cut a notch hammer the end back a little to make a hook