

# Drinking straws

Everyday drinking straws are an amazing material. Did you know that nature uses straw-like structures the same way we use common drinking straw. It is the most economical way to create structures. If you look carefully, you will see drinking straws everywhere: bamboo, stems of wheat, honeycomb...



## Drinking straws

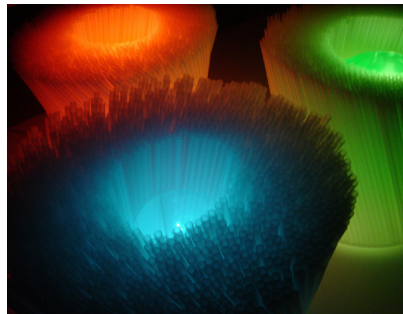
Hollow and lightweight

Strong if grouped together

Easy to cut

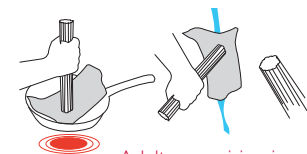
Has sharp edges

Round and smooth



### 1000 & I Straw Lamp

made from 1,000 drinking straws and one soda pop bottle. Low heat florescent light.

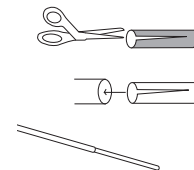
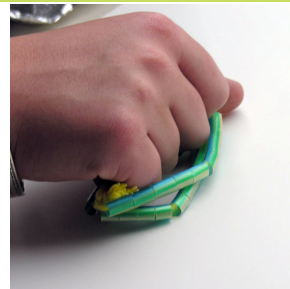


Adult supervision is required.

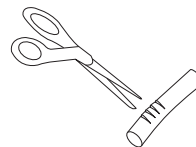


Drinking straws are made of polypropylene plastic. They can be fused together to create permanent structures. Line the bottom of frying pan with aluminum foil. Heat the pan. Press a bunch of straws against heated foil and watch them melt. Cool down foil and straws under cold water. Separate the straws from foil.

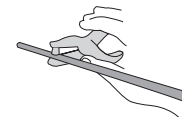
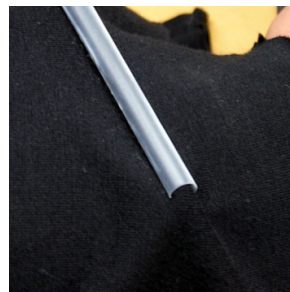
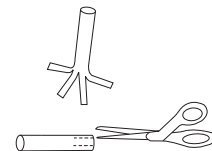
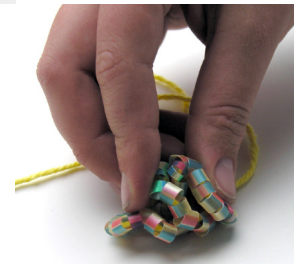
## Things to do with drinking straws



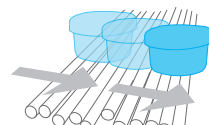
Attach them together.



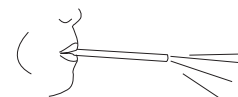
Cut and thread yarn through them.



Punch holes in them.



Make a conveyor belt with them.



Blow air or shoot things with it.

# Flat sticks

What do you see when you look at a stack of wooden sticks? Designers and architects see a miniature lumberyard. Architects create houses in small SCALE to test how they will work. Wooden sticks are perfect logs to build a house. If your house works in this SCALE, there is a good chance that it will work in the real scale too.



Cut things with it.



## Flat sticks

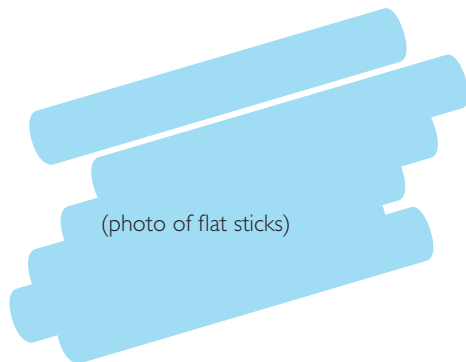


Easy to brake along the grain direction

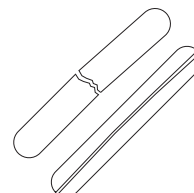
Easy to sharpen

Absorbs color

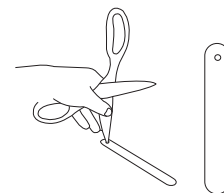
Slightly bendable



(photo of flat sticks)

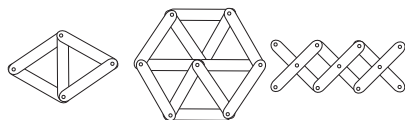


Brake them in half.

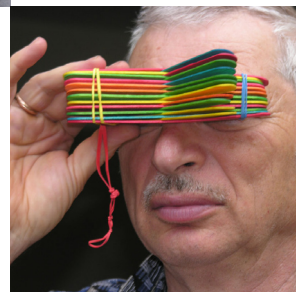


**Lamp shade "Coral"**  
by David Trubridge

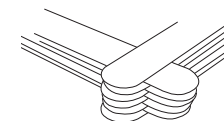
You can create different patterns with identical flat pieces. One way to do that is to make a hole at the same spot on every stick and attach them with fastener or even piece of yarn. To be structurally strong your creation should have cross beams as well as main structure.



Use them to control the light.



Make a clamp.



# Soda bottles

If you look at the bottom of clear or green soda bottles, you will see chasing arrows symbol and # 1 (PETE). This tells you the kind of plastic is used to make those bottles. These bottles are created using a process called blow molding. Imagine blowing up a plastic balloon inside a cookie jar and then removing the jar. After the beverage is consumed, the bottle can be reused or recycled.

## Soda bottles



Stubborn and slippery

It has flat areas

Sharp edges

Would float if filled with air



Canoe made from soda bottles

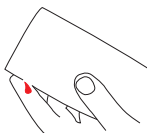


Fabric for this Patagonia PCR Fleece jacket is made from recycled soda bottles



(photo of soda bottle)

Since the bottle was designed to be air and water tight, it is ideal for making buoyant structures (float on the water).

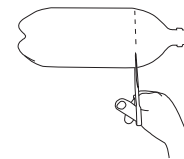


Warning: cut plastic has sharp edges

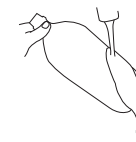
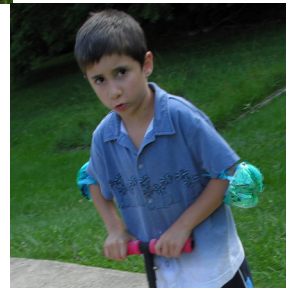
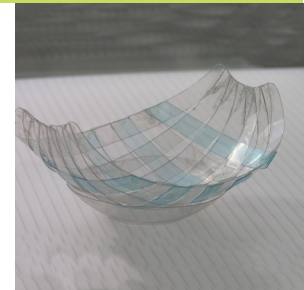
## Things to do with soda bottles



See through it.



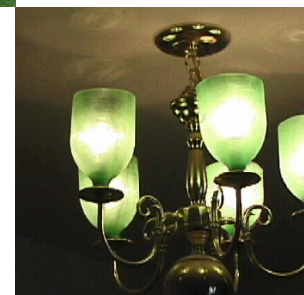
Cut it with scissors.



Protect things inside it from water or impact.



Make containers.



Diffuse light by frosting it with sand paper.



Clean with it.



Rattle paper clips in it.

**Making noise with soda bottles**

Any cupped shape can work as a sound amplifier. The shape of your ear makes the sound louder for you. A hollow closed shape like a bottom of the soda bottle can amplify sounds too.



Stretch a balloon over it to make deep low drum-like sound.



Stuff bottle bottoms with plastic bags to create a muffling effect to protect you from all that noise.



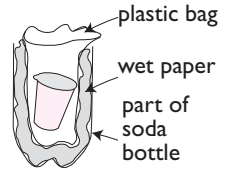
Scoop up the spilled liquids.



Dig soil or sand.



Keep your food cool.



Peel a carrot.



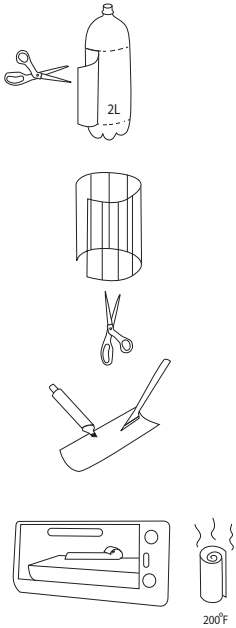
Make a spoon.



Cut bagels or other foods with it.

### Creating jewelry beads from soda bottles

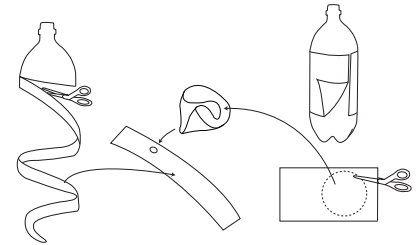
Rinse a used soda bottle and peel off the label. Cut off the middle part of the bottle. Cut it into one-and-a-half inch strips. Use edge of scissors or any sharp object to scratch and decorate the concave side of each strip. Use permanent markers to decorate it on the same side. Roll strips into rolls with decorated surface on the inside and tie with wire ties (the kind used to tie grocery bags). Loosely wrap it with the foil wrap (used foil or used soda can will work, too). Place it inside a toaster oven preheated to 200 F. In ten minutes remove and let cool. Remove the tie (you can reuse it for the next roll). Check if the bead stays in the same shape. If it unravels, repeat the rolling and heating steps.



Adult supervision is required.

### Bottle label projects

Soda bottle labels are colorful and waterproof stuff that can be used for many designs. Cut it into circles and use as a flower accessory for headbands, bracelets or shoes. Cut a spiral strip from the straight part of the bottle and use it as a band.



### Earrings

Cut bottle sides into squares or circles, and use them as beads for jewelry. Try the same technique with colorful bottle labels.



# Plastic bags

Plastic bags are made by blow molding plastic film. Imagine a huge balloon that is made into a bag. Plastic film creates a lot of waste in landfills. By reusing or not using bags at all we can help protect the environment.

## Plastic bag

Flat, smooth

Waterproof

Good barrier

Soft



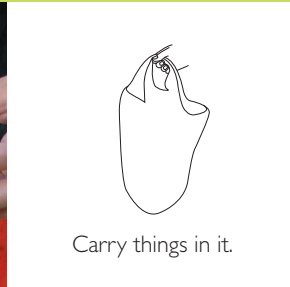
(photo of plastic bag)



The concept of "Fill it" furniture system is that you would buy an "empty shell" and fill it over the time with your own plastic bags. Eventually you could have a couch filled with bags that otherwise will be thrown away.



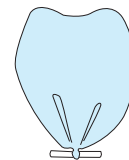
Fill things with it.



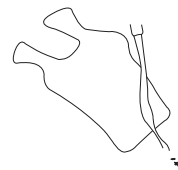
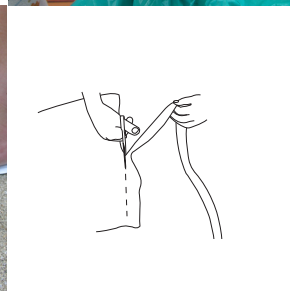
Carry things in it.



Make a sail or parachute.



Cut it into strips and used as a rope.



Create waterproof cover from it.



Adult supervision required.



## Fused bags projects

Create new materials by fusing several plastic bags together. Experiment with fusing different color plastic bags, or "sandwich" other objects between plastic sheets. If you place structural objects inside your "sandwich" you could create larger objects like a canopy above. Try to fuse open mesh fabric to create super strong material or draw designs on pieces of paper and laminate them for memory sake. Also try working your objects around shapes like aluminum soda cans to create vases or containers.

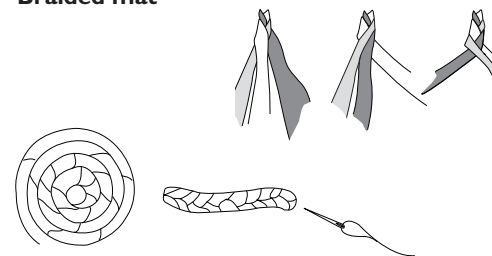
Always place smooth paper between your work object and hot iron and again one piece of paper on top your work surface.

## Basket

The basket is made by traditional basket weaving technique. But, instead of straw, the strips were cut out of plastic bags.



## Braided mat



## Crochet summer sandals

