

It's fair to say that most of the real problems encountered by children, when making technology models, are concerned with joining. It doesn't matter how brilliant the design concept is if the resulting piece of work falls apart. Below are listed a few important points that could make gluing and joining easier. (In no particular order!)

Do not try to glue 'end-grain' of wood. This is the surface you get when you cut across a strip of wood - a surface more or less at right-angles to the direction of the grain. There are two good reasons. The first is that it's almost impossible to cut 'square' with a junior hacksaw (so the surface won't be flat against the piece it's being glued to). Secondly, end-grain is very porous, it's the ends of all the tubular fibres etc. that once transported water and nutrients up the tree. It will transport your glue from the joint just as efficiently. The glue gun is more effective, but we've already explained why we think that's not a good idea. See the page on building frames for alternative approaches.

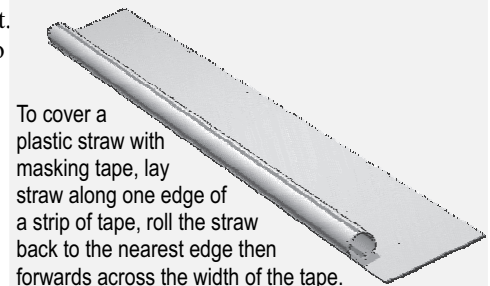
A thin, evenly spread layer of glue is enough. If you can provide pressure while the glue is setting so much the better. This often isn't practical but, when it is, try bulldog clips, clothes pegs, G-cramps or a weight. When gluing two pieces of wood side by side make a rubbed joint. All this means is that you slide the two pieces backwards and forwards together a few times while applying a little pressure with the fingers. This will dispel air and surplus glue, making the joint stronger.

If it is at all possible, assemble pieces to be glued before you add any glue. When you are satisfied that things fit correctly take them apart, apply glue and reassemble. It can be very messy if you discover a part is too big just after you've covered it with glue!

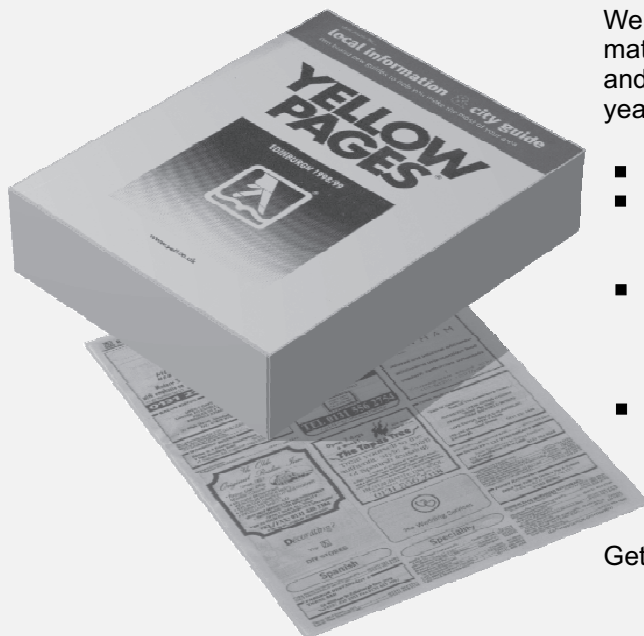
If you want to glue a plastic straw to a piece of wood, it might be an axle housing you need to fasten to a chassis, first wrap the straw with paper masking tape. Then you will be able to glue successfully using PVA.

The model doesn't always need to be the right way up while you're working on it. If gravity is trying to separate the two pieces you've just glued (ie. one's trying to fall off!) then try turning the whole thing over so you can use gravity to hold them together.

Be prepared to use the work surface or table top as a tool. If you want things level, or to line up correctly, it's possible that pressing them flat on the table will do the job.



To cover a plastic straw with masking tape, lay straw along one edge of a strip of tape, roll the straw back to the nearest edge then forwards across the width of the tape.



We have discovered that Yellow Pages make excellent glue mats! They come in handy packs of several hundred sheets, and cost nothing if you collect them at the right time of the year. So... why Yellow Pages?

- The paper is thin and lies very flat.
- Children can be encouraged to replace their glue mat when it inevitably gets covered in glue. The pages, when screwed up, take up very little room in the litter bin!
- When gluing up frames you can, if it seems useful, lightly glue the pieces to the page to stop them moving during assembly. The thin paper is easy to remove when the glue is dry.
- Best of All - most pages have a number of rectangles printed on them. This is ideal for arranging components - at right angles - parallel - protruding equal amounts - and so on.

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Don't completely overlook mechanical fixings. There are times when an adhesive won't work so be prepared to try things like stitching (wire or string), clips, wedges, pins, nails, screws, nuts and bolts, staples. They can all have their place. Be careful of nails, however, when using 10mm square wood (or less!). Nails force their way between the fibres and so are likely to split the wood. Use only thin nails, such as panel pins, or drill a small hole first.

*A combination of methods might be applicable. For example, if you want to fasten an upturned plastic yoghurt pot to a cardboard box you could make a card ring to slip over the pot and so grip the narrow lip. Then you could glue the card ring to the box without any trouble (but with spacers, perhaps!)*