## Materials You'll Need to Build This Kite

### Plan ahead: you may need a craft store for glue and tissue paper



* 24 plastic drinking straws
* spool of kitestring or kitchen string
* large sewing needle (\*\* or chopstick + twistie -- see below)
* strong, light tissue paper or mylar (Colored plastic wrap found in party stores works nicely, but tug on it to make sure it doesn't tear easily. Regular printer paper or wrapping paper is too heavy.)
* craft glue (I use rubber cement, but there's safer craft glues for kids)

\*\*NOTE: See "Extra Help” if you can't find a big needle, or if the store only has bendy straws.

## Making Your Kite: Extra Help

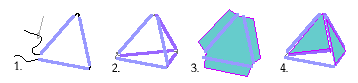
### Improvising Alternate Materials

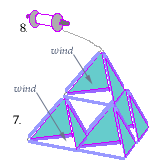


The twistie needle is probably more "kid safe" than the turkey-lacing needle I used to use. I trimmed a paper-and-wire twistie so that it would fit easily through the straw, then folded the end over to make the eye.  
  
It's also really quick -- drop it in one end of the straw, push it through with a chopstick, grab the end sticking out and repeat.  
  
When trimming bendy straws, use the bottom of the joint as a reference so you cut them all to about the same size.

## Printable Instructions for Making Kite

### (Copy and paste to a text document for printout).



1. String three plastic drinking straws together to form a triangle. The easiest way is to give your thread extra slack, use a heavy needle, and drop it down through one straw, letting gravity do the work for you. Tie the triangle's ends together securely, leaving as little slack as possible.
2. Thread and tie on two more straws to form a second triangle, using one of the first three straws for one side of the triangle. Then tie one more straw between the outer corner of the two triangles to form the back of the pyramid. Again, don't tie the thread so tightly that the straws bend, but don't leave so much give that your pyramid flops. It should stand up on its own once you've got all six straws in place.
3. Place your pyramid on your paper or wrap of choice. Trace or cut out a triangle about half an inch larger than the pyramid's base, nipping off the corners as shown. The shape is like the orange safety triangles on slow-moving vehicles. If this is an activity for children, you may want to prepare a cardboard pattern ahead of time which they can trace and copy. Repeat to get a second triangle.
4. For each of two sides of the pyramid: Curl the edges of the paper triangle over and around the straws, then secure with rubber cement.
5. Repeat steps 1-4, to create three more pyramids, each with two sides covered with paper.
6. Stack the four individual pyramids into one large pyramid: three on the bottom, one on top. Orient all of them in the same direction, so that, for instance, the papered sides on all of them are on the left and right. (They're like the wings of birds flying in formation. If they're facing different directions, the wind won't be able to pass through freely.)
7. When you've got all the pyramids arranged properly, tie together all the corners that touch, double and triple knotting, just to make sure.
8. Attatch your kitestring to one of the corners where two sides of paper meet, as shown in the diagram, and you're done!
9. If you want to be ambitious, you can make three more 4-cell kites like this one, then use them as the four cells of a larger tetrahedron to build a giant kite! Ever heard of fractals? You can just keep repeating the same pattern, larger and larger, to make the Great Pyramid!
10. New TIP 2010: This kite can be feisty in strong winds (see video above). I find it fun, but you might want to make a detachable tail for stability. Add a string loop on the "downwind" corner of the kite. Then cut a separate string as a tail. Tie cloth ribbons to it, or some other sort of weight like beads or paper clips. Tie a paper clip to one end of the tail to use as a fastener. That way you can add or remove the tail as needed.

## Finished Kite



Tie tetrahedrons together, oriented same way.

See website <http://www.squidoo.com/pyramidkite> for additional pictures.