template (download to one piece of $11 \times 17$-inch 20 or $24-\mathrm{lb}$. bond paper)
one additional piece of $11 \times 17$-inch 20 or $24-\mathrm{lb}$. bond paper
two 12 -inch bamboo skewers (grocery or garden variety)
two 7-3/4-inch drinking straws (straight, not flexible), 1/4-inch diameter
one regular-size (\#1) paper clip
scissors
Scotch tape (clear instead of "Magic" recommended)
kite line \& winder
(1)


Download and print the Dihedral Diamond template (11x17-inch). Align the printout of the template with the other sheet of $11 \times 17-$ inch bond paper, as shown, with the 17-inch sides together. Tape along the entire 17inch length (overlapping short pieces of tape, if you wish) to create a $17 \times 22$-inch rectangle. Hint: to keep the papers' edges from shifting during taping, first lightly tape one piece of paper, at the top and bottom of the 17 -inch length, to the work surface. When you have finished taping the two pieces of paper together, fold over or trim any tape extending beyond the top and bottom of the sail.

2


Fold along the vertical taped seam, with the printed template facing up. Cut the six ( $3 \times 2$ ) 3/4-inch strips for the tail first. Then cut out the small central vent and the kite sail (outside edges) along the solid line. Take care not to cut off the triangular ends of the kite sail (dotted line). Retain the printed drawing of the dihedral for \#3-\#5, below. Decorate the kite sail and tail strips on the unprinted side, if you like. Re-crease the vertical fold in the opposite direction, so that the angle of the fold looks like " V " instead of " $\wedge$ " when you place it, printed (undecorated) side up, on the work surface.


Put fingers and thumbs together at the center of the paper clip, and bend it to approximately 140 degrees, as pictured. Young children may need adult assistance, and should be careful of the unrounded ends of the clip. You may not be able to bend the clip's interior loop, and its prongs, to the same angle-don't worry. Measure the angle of the clip against the drawing of the dihedral on the drawing.


Slide the end of one straw over the wider side of the folded clip (the one that ends with the prongs), down to the bottom of the angle. The straw should fit snugly; the interior loop of the paper clip may help to hold it in place. Align the straw with the horizontal dotted line on the kite sail, with the unclipped end of the straw at the vertical dotted line at the left edge of the sail, and the clip positioned in the middle of the vent. Tape the straw in 2 or 3 places, with short pieces of tape at a right angle to the straw. Fold the triangular end of the sail over the straw spar on the dotted line and tape in place.


Slide the end of the second straw over the narrower side of the folded clip, again down to the bottom of the angle. The second straw will stick up at the angle you created when you folded the clip. The straw may fit more loosely, but should stay in place once you have taped it to the sail. Being careful not to flatten the angle of the paper clip, roll the left half of the sail gently up, so that the untaped spar comes to rest against the right half of the sail and the work surface. Tape down the second spar, as above. Fold the triangular end of the sail over the straw and tape in place.


0


8


Note: Longer straws can be trimmed to the 7-3/4inch length. Straws of wider diameter may require a bigger paper clip to maintain the fixed angle-and a bigger clip is heavier and may affect your kite's flight.
Do not use this kite kit with children younger than age 3.

Create two lengths of tail by taping three strips of tail end to end. Lay one length of tail on top of the other, or side by side, and tape both lengths to the bottom of the kite.
Align the bamboo skewers along the vertical taped seam, with the blunt ends of the skewers at the horizontal dotted lines at the top and bottom of the seam. The skewers will overlap in the middle of the kite sail. Tape every 3 to 4 inches over both skewers, with short pieces of tape at a right angle to the skewers. At top and bottom, fold the edge of the sail over the skewers on the dotted line and tape in place.

Tie kite line with two secure overhand (shoelace) knots at the small central vent where the spars intersect. Make sure that the line is tied from the front of the kite sail (the unprinted, or decorated, side). The clip should keep the straws at the fixed angle (measure against drawing).


