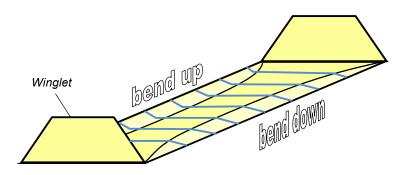


# **Tumblewing Glider**

### **FOLDING INSTRUCTIONS**

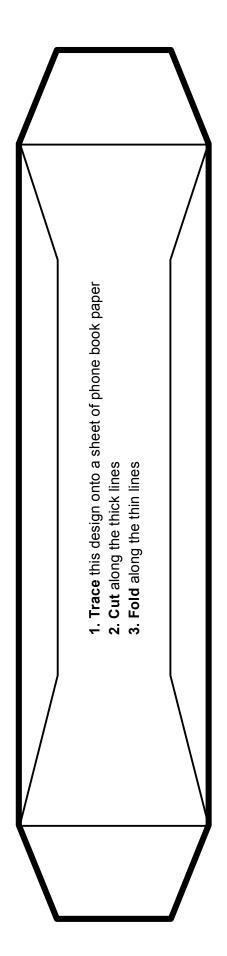
- 1. Tear a page out of the phone book (make sure it's not an important page) OR use thin notebook paper
- Print this page, lay it on top of the phone book paper and trace over the design (opposite) with a ballpoint pen pressing firmly
- 3. Carefully cut out the tumblewing design
- 4. Fold the winglets (outer edges) up at 90 degrees as illustrated below
- 5. Bend the leading edge (front) <u>down</u> slightly and the trailing edge (back) <u>up</u> as illustrated

The tumblewing will only fly straight if it is symmetrical



# FRONT VIEW 90° 90° 90° Winglets must be bent at 90° like this

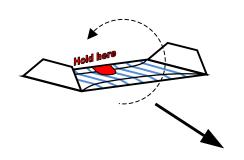
Winglets must be bent at 90° like this for a straight flight path



#### TEST FLIGHT INSTRUCTIONS

Check that your tumblewing falls forwards in a straight line before attempting to fly it with a paddle

- 1. Hold the tumblewing by the trailing (folded up) edge between your index finger and thumb as shown
- Release the tumblewing: it should fall forwards and away from you in a straight line, tumbling backwards as it descends
- 3. If your tumblewing curves to the left or right as it falls, make sure the winglets are both folded up at 90 degrees



#### **FLYING INSTRUCTIONS**

Flying requires a large, still space such as an empty hall. The slightest breeze makes steering a tumblewing almost impossible.

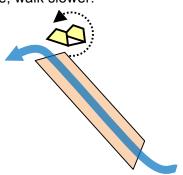
- You'll need a paddle made from a large piece of flat cardboard around 50cm × 60cm or bigger (at least as big as the top of a pizza box)
- 2. Hold the cardboard paddle by the top edge as shown
- 3. Hold the tumblewing above and slightly in front of the paddle
- 4. Release the tumble wing so that it falls away from you
- Quickly change your grip so you are now holding the paddle as shown, with the bottom edge tilted slightly further forward at about 30 degrees
- 6. Chase the tumblewing with your paddle, walking at just the right speed to keep it hovering near the top edge of your paddle steer the tumblewing by turning the paddle

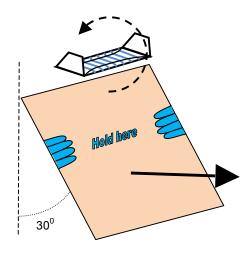


Launching

## How it works & Tips for flying

As you walk forward, air rushes up and over the paddle. This rising air prevents the tumblewing from falling to the floor. If your tumblewing falls too fast, walk faster or tilt the paddle further forward. If your tumblewing flies up and over the top of the paddle, walk slower.





**Flying** 

