## TUMBLEWING GLIDER!

With this simple-to-make glider, you can observe aerodynamics and flight in motion!

The Tumblewing alternates between flying and stalling in air, allowing it to glide to the ground.



- TUMBLEWING GLIDER TEMPLATE AND PRINTER
- PAPER
- SCISSORS
- LARGE FLAT PIECE OF CARDBOARD (OPTIONAL)







- 1. DOWNLOAD AND PRINT THE TUMBLEWING GLIDER TEMPLATE.
- 2. CAREFULLY CUT IT OUT USING YOUR SCISSORS.
- 3. FOLD THE SIDE WINGS UP AT A 90 DEGREE ANGLE. PICTURE THE PAPER ON EITHER SIDE OF THE FOLD AS TWO SIDES OF A SQUARE, THIS IS 90 DEGREES.
- 4. FOLD THE FRONT EDGE DOWN AND THE BACK EDGE UP.
- 5. HOLD THE TUMBLEWING ABOVE YOU BY THE BACK EDGE YOU BENT UPWARDS AND LET GO.
  THE TUMBLEWING WILL FALL AWAY FROM YOU, TUMBLING THROUGH THE AIR!
  IF IT DOESN'T GO STRAIGHT, IT MEANS THE SIDE WINGS AREN'T PERFECTLY 90 DEGREES
  AND YOU CAN BEND THEM INTO POSITION BEFORE TRYING AGAIN.
- 6. NOW GET YOUR FLAT PIECE OF CARDBOARD; YOU CAN USE THIS TO CREATE AN ARTIFICIAL DRAFT AND KEEP YOUR TUMBLEWING IN AIR FOR LONGER! ANGLE YOUR CARDBOARD AT ABOUT 30 DEGREES FROM YOU AND DROP YOUR TUMBLEWING OVER IT. START WALKING FORWARD TO CREATE THE AIR FLOW AND, IF YOU PRACTICE A LITTLE, YOU CAN KEEP YOUR TUMBLEWING TUMBLING AS YOU GO FOR A RECHARGING WALK AROUND THE NEIGHBOURHOOD!



THIS EXPERIMENT IS GREAT FOR BEGINNER EXPLORERS, REQUIRES SCISSORS, AND USES HOUSEHOLD ITEMS.

IF NEEDED, A PRINTER CAN BE FOUND AT YOUR LOCAL LIBRARY.









## TUMBLEWING TEMPLATE





