



# Balloon Explorium

## Backyard Ballooning

The following instructions are adapted from: "Ballooning - The complete Guide to Riding the Winds" by Dick Wirth and Jerry Young, 1980 Random House Inc.

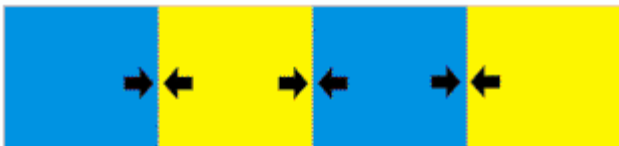
The Montgolfier brothers' eighteenth-century experiments can be readily imitated in miniature. Model balloons, made of paper, effectively illustrate the simple principle of lighter-than-air flight. They can be purchased cheaply, but it is infinitely more fun to construct your own. The pleasure of making and chasing aerostats is heightened if there is competition. Build several and "race" them.

The principle of hot-air balloons could not be more simple. Enclose a "bubble" of warm air and it will float around until the warm air cools. Two people should be able to make a paper balloon in a couple of hours. All you need are 48 sheets of 12 inch square tissue paper, glue, scissors, a piece of string and wire. To launch the results of your efforts, you will need an open space, preferably in the country, and a simple source of heat. Weather conditions will determine how far the balloon travels. One "home-built" balloon survived four flights, flying as much as 50 miles in one trip.

The best way to inflate the balloon is with an electric fan heater, although a blowtorch, camping stove or even an open fire can be used. As with anything that has the dangerous potential of causing a fire, it should only be done with adult supervision and insuring adequate safety precautions are followed. When the balloon takes off, the game is to keep up with it. It can be a great sport on foot on a calm day, but in certain conditions, your "bubble" could fly for miles and it is wise to have transport even if it is only a bicycle.

### Step 1.

Make 12 long strips by gluing the squares of paper together with a 1/2 inch overlap. By alternating the colors of the squares a checkered design can be achieved.



### Step 2.

Fold the strips in half lengthwise and pile them up, clipping the folded edges together with spring clips.

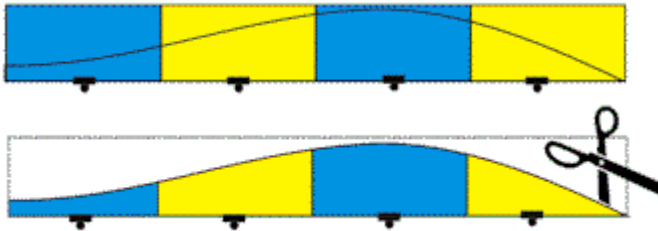


### Step 3.

Draw a "fish" shape on the top sheet and cut it out through all of the sheets. Keeping the spring clips in position, place the fish shapes on a flat surface with the straight edges away from you.

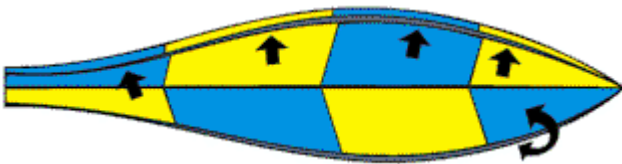


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## Step 4.

Fold back the top "fish" and apply glue to the curved edges of the following two "fishes". Continue gluing the rest in twos. When you are left with one "half fish", roll the glued sections toward the straight edge and glue the edges of the first and last "fish" shapes together. Then apply glue along the top side of the seam and press it back on the balloon's surface.



## Step 5.

Tie the "crown" of the balloon tightly with string. Make a circle of thick wire and glue it to the throat of the balloon making a "hem". The paper Montgolfier is now ready to fly.

