

Bird Wing Inventions

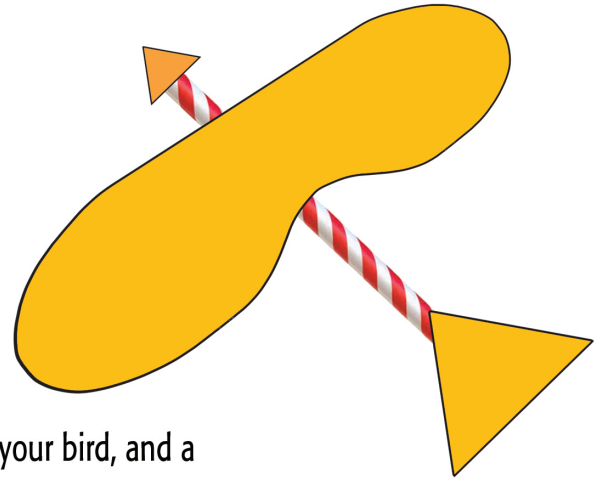


As humans dreamed of flying, they looked to birds for inspiration. Early planes were designed to mimic the shapes of birds. Learn about the different wing shapes and see how they fly. How can each wing shape be used for different flying inventions?

Materials:

Paper
Scissors
Tape
Straws

Bird Wing Shape worksheet



Steps:

1. Draw or print out the bird wing shapes and cut them out.
2. Cut out a small triangle, about 1 inch wide, for the beak of your bird, and a larger fan shape, at least 2.5 inches wide, to use as the tail.
3. Tape your head piece to one tip of your straw; tape the tail to the opposite end ; tape the wing shape of choice to the middle of the straw.
4. Test flying your bird like a paper airplane a couple times and see how it flies.

Did it fly fast? Did it fly far? Did it hang in the air?

Did it dive down to the ground?

5. Try testing out the other wing shapes.
6. Try out different tail shapes, adding more wings, or using completely different shapes! After each change you make, test out the flyer and make note of how it flies!

Many inventors working in aeronautics (the study of air flight) look to birds and their wings for inspiration. How could you use the different wing shapes in flying inventions? Are there other wing shapes that you could use? How do different shapes affect flight?

Are there more features that you could add? Do more wings help with the way that your bird flies?

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Bird Wing Shapes



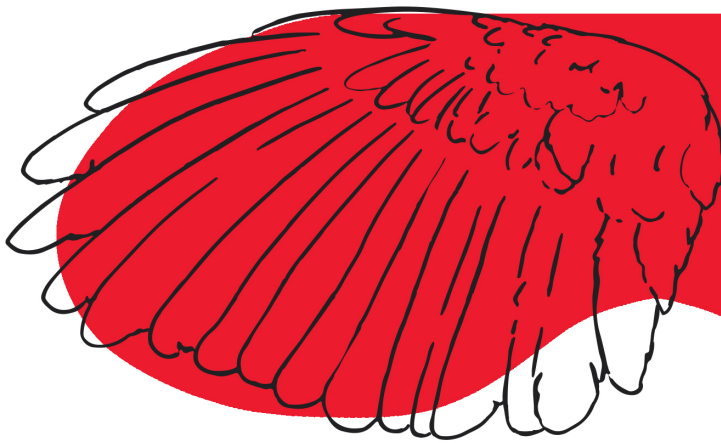
Active Soaring

- long and narrow
 - excellent for soaring (flying without flapping)
- Seen in gulls and albatrosses



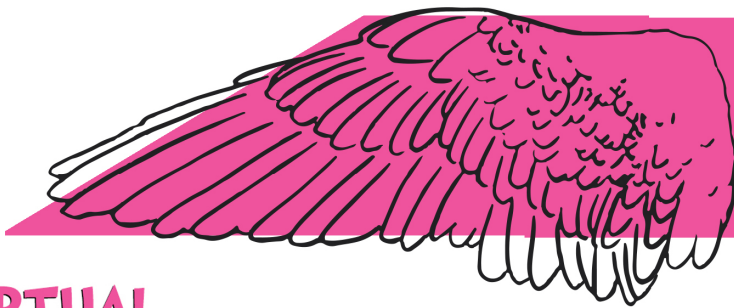
Passive Soaring

- long and broad
 - primary feathers with wide gaps at the end of each wing allows birds to soar without a reliable wind current
- Seen in vultures and eagles



Elliptical Wings

- short and round
 - best for bursts of fast, controlled flight
- Seen in sparrows and crows



High Speed Wings

- short and narrow
 - optimized for sustained speed
- Seen in falcons and swallows

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