

Blueprint for Leonardo da Vinci's Flying Machine

Name of the object	Leonardo da Vinci's Flying Machine
Recommended ages (from...)	Starting from 14-15 years old – level of difficulty: Moderate-Difficult
Thematic areas combined (STEAM)	Technology and Engineering Leonardo da Vinci's futuristic invention turned into a successful powered aircraft in 1903.
Materials needed	<ol style="list-style-type: none"> 1. (Royleco) Antique paper 2. Mini craft sticks 3. White glue 4. Pencil 5. Scissors
Instructions step by step	<p>Step 1. Setting up all the materials and looking at the instructions and models.</p> <p>Step 2. Designing and constructing the base of the flying machine.</p> <p>Step 3. Drawing and cutting the wings & tail.</p> <p>Step 4. Drawing lines and cutting mini craft sticks and gluing the paper wings & tail on them.</p>



Step 5. Gluing all the wings and tail to the base structure.

Step by step: how to build Leonardo da Vinci's “Flying Machine”

Step 1

Time needed: 5-10 minutes

Set up all the materials and look at the instructions and models.

Mini craft sticks should be cut according to preference using the scissors.

All the pieces should be ready to mount.

These are the materials needed:



[Source](#)

Step 2

Time needed: 30-45 minutes

Design and construct the base of the flying machine.

Using the mini craft sticks, design and construct the base of the flying machine. Mini craft sticks should be cut with scissors and glued together with any white glue. Make sure you leave a space on the sides wide enough to glue on the wings and a space to glue on the tail.

Bases can look like these:



[Source](#)



Step 3

Time needed: 15 minutes



Draw and cut the wings & tail.

Get a piece of the antique paper and fold it in half. Draw half of a tail design on the fold and one wing (not on the fold). Cut out the pieces.

The wings should look something like this:



[Source](#)

The process can be found in this video at 0:48:

<https://www.youtube.com/watch?v=IPhTS-hxnwc>

Step 4

Time needed: 10 minutes

Draw lines and cut mini craft sticks and glue on the paper wings and tail.

Draw lines on your wings and tail where the wooden reinforcements (mini craft sticks) will go, for added stability. Cut the mini craft sticks and glue them on the paper on the lines drawn.

Tip: You can place them on the drawn line, mark their length with a pencil and cut the remaining (extra) pieces off.

Then, place the tail and wings on a flat surface and leave them to dry, with the wooden parts face up, not touching the surface.

The sticks on the wings & tail should look like this:



[Source](#)

The process can be found in this video at 01:44:

<https://www.youtube.com/watch?v=IPhTS-hxnwc>



Step 5

Time needed: 5 minutes

Glue all the wings and tail to the base structure.

The final step is to glue everything together. Glue one end of the wing to one end of the base and the other end of the wing to the other end of the base. There should be one wing on the left and one on the right. Glue the tail on the base as well.

The gluing process will look like this:



[Source](#) at 02:55



The final product should look something like this:



[Source](#)

There are also many variations to follow, and you can create different bases and shapes of wings with the same effect.

Sources

- Palermo, E. (2014) "Flying Machines? 5 Da Vinci Designs That Were Ahead of their Time", LiveScience, <https://www.livescience.com/49210-leonardo-da-vinci-futuristic-inventions.html>
- United Art & Education (2020) "Da Vinci-Inspired Flying Machine – Project #48", <https://www.unitednow.com/da-vinci-inspired-flying-machine-project-48>
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