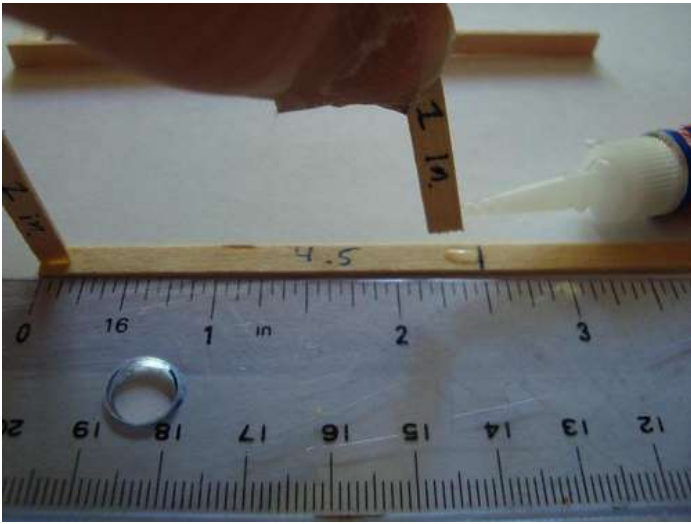


Ornithopter

by [Captain Molo](#) on April 15, 2009

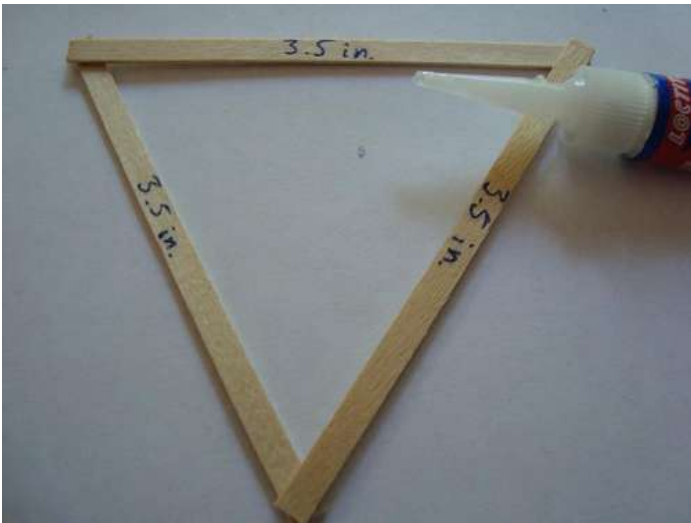
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Step 2: The Tail

Then glue your three 3 1/2 together in a triangle.



Step 3: The Wire

After that bend your wire as shown in the picture.

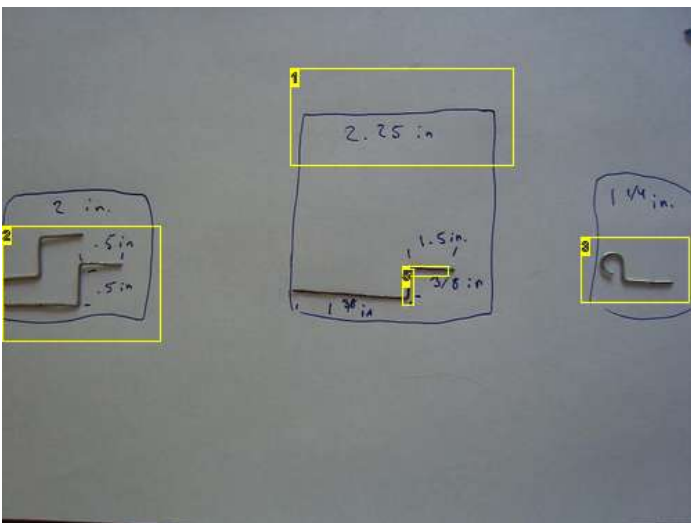


Image Notes

- 1. This is the 2 1/4 piece
- 2. This is the 2 in. piece
- 3. 1 1/4 piece

- 4. 3/8 in.
- 5. 1/2 in.

Step 4: The Beads

then you can glue your beads on, And put the wire pieces on (don't glue the wire! they should turn freely.)

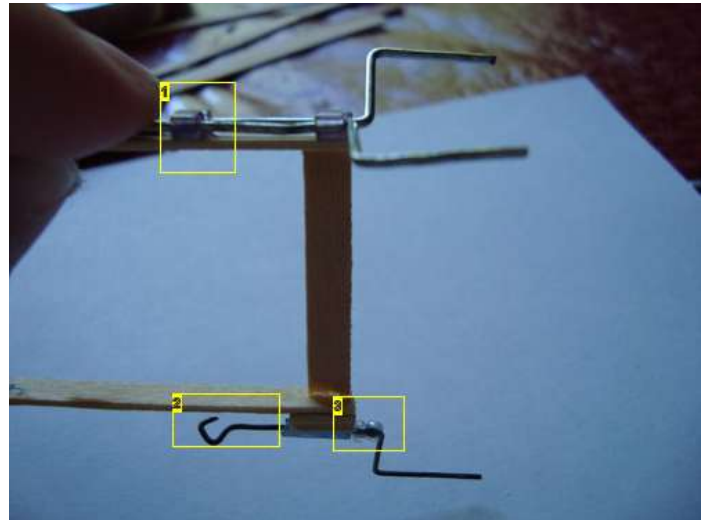
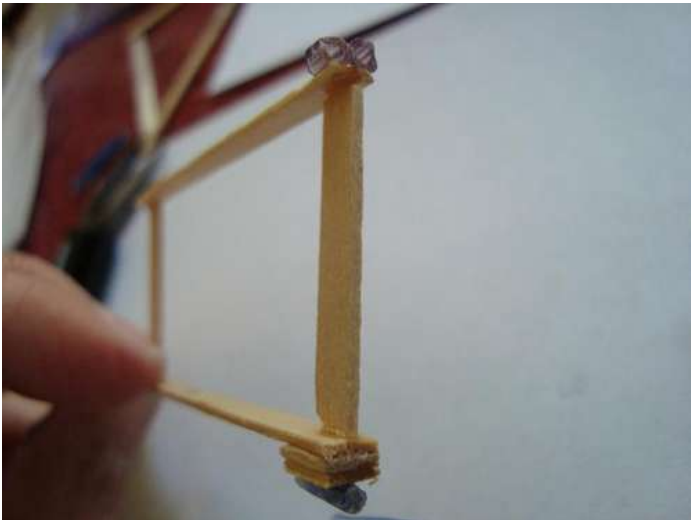


Image Notes

- 1. you might have to add an extra bead here
- 2. Make sure this looks like a hook
- 3. More beads

Step 5: Tail

Glue this wire piece on

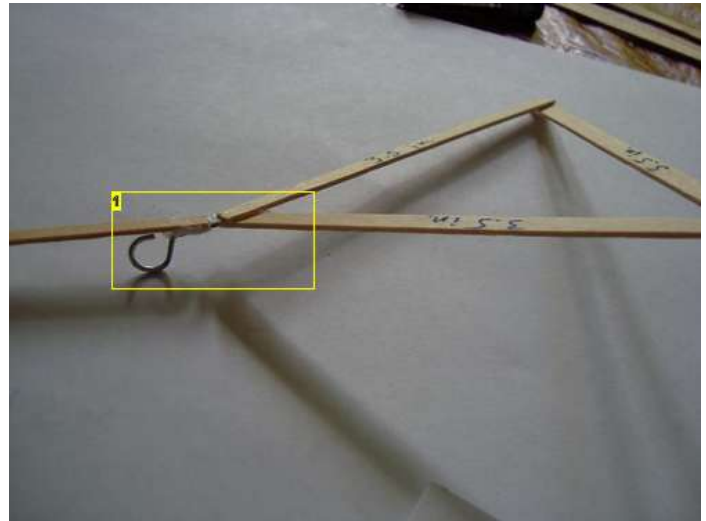
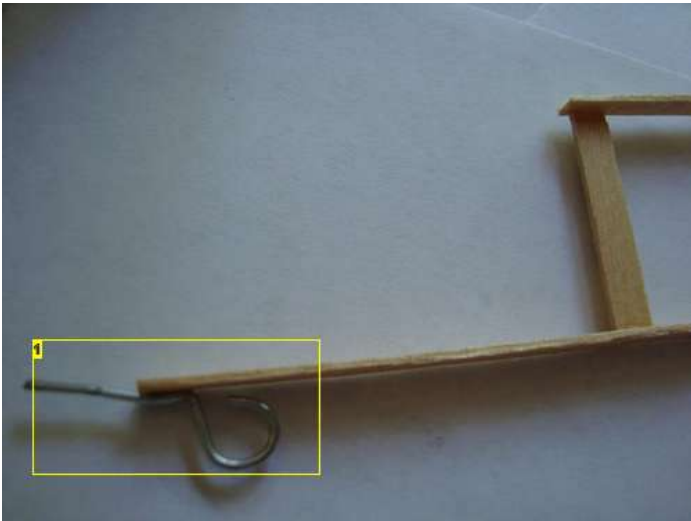


Image Notes

- 1. You might have to use hot glue here

Image Notes

- 1. Hot glue again

Step 6: Wing Spars

You'll need to glue the 5 in. sticks to the wire pieces. then take the 1 1/2 pieces and punch two holes in the end and slip the ends through as seen in the picture.

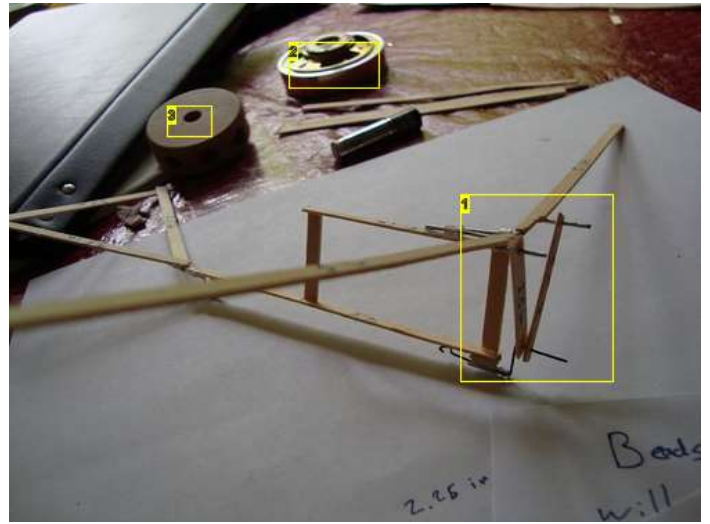
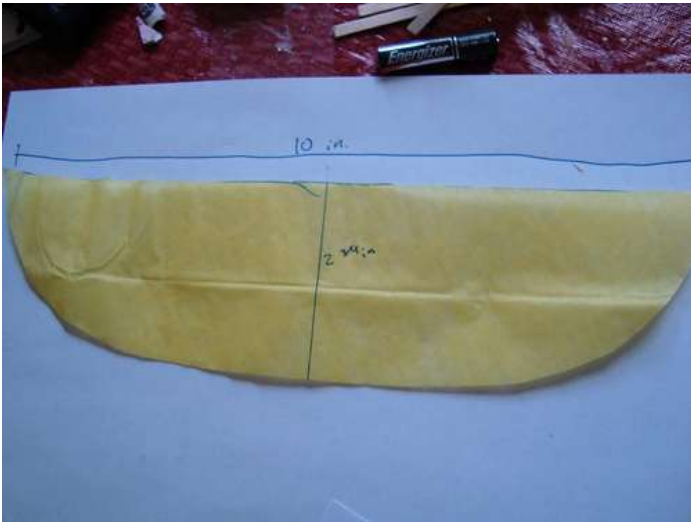


Image Notes
1. Here they are
2. Arc reactor!!!
3. Tinker toy!!

Step 7: Wings

Here's the wings you'll need to hot glue them to the spars. as for the tail just trace it and cut it out.



Step 8: Finish

Here's when its finished just attach a rubber band, wind it and give it a toss!

Ask me for any questions

Enjoy!



Related Instructables



rubber band powered ornithopter by aby05



The Flying Scrooge: Ornithopter of Household Items by royalestel



How to make a rubber band powered plane (ornithopter) by fireblast_1212



Building an Ornithopter by kfay



make an ornithopter/chirot by budsiskos



Desktop Ornithopter by Jezza Bear

Comments

50 comments

[Add Comment](#)

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sek98 says:
hey thanx buddy ,nice job

Feb 28, 2011. 4:20 AM [REPLY](#)



ninja_boy1012 says:
what if you dont have tissue paper? what other kind of peper would you use? i dont have tissue paper. only paper towels and toilet paper. and the toilet paper is to small lol.

Nov 30, 2009. 4:32 PM [REPLY](#)

so if you had to choose between wax paper, tin foil, napkins, or paper towels to make the winds, what would you choose? lol. please help. :D



dombeef says:
Plastic bags

May 29, 2010. 6:08 PM [REPLY](#)



pie popper says:
lets see... out of those i would choose wax paper, but i think plastic bags would work better, tissue paper also works great

Jun 5, 2010. 8:04 AM [REPLY](#)



Captain Molo says:
oops! signed into the wrong account! so the above comment is actually from me

Jun 5, 2010. 8:06 AM [REPLY](#)



dombeef says:
Oh ok, won't wax paper be too heavy?

Jun 5, 2010. 1:32 PM [REPLY](#)



Beduk says:
wax paper is not heavy. But i think aluminum foil will be better since it is light and sturdier.

Nov 19, 2010. 11:21 PM [REPLY](#)



dombeef says:
Aluminum foil is too thin, it rips easily, and it crumples easily too

Nov 20, 2010. 9:25 AM [REPLY](#)



J.A.R.V.I.S. says:
you should also take into account aluminum foil is kinda heavy because it is technically metal, well... yeah, by the way thanks for the instructable! I used it for a science fair project with which wing material works better, aluminum foil (Iron Man) or plastic bag (Plastic Man) Marvel and DC collide again.

Feb 19, 2011. 10:12 PM [REPLY](#)



J.A.R.V.I.S. says:
can you be a little more specific? it's like you think anyone can figure it out by seeing the picture, and all we need are the measurements.

Feb 19, 2011. 6:17 PM [REPLY](#)



orniboy says:
thanks

Jan 20, 2011. 11:48 PM [REPLY](#)



hobbitboy says:
Awsome ible if you wanted it more awesome you could add a video that would show people how awesome it is

Dec 16, 2010. 1:00 PM [REPLY](#)



77Kapn Krunch77 says:
Odd, the first picture doesn't have the same set up as the last one...

Oct 25, 2010. 11:09 PM [REPLY](#)



Captain Molo says:
how's it different, im pretty sure it took the pictures at pretty much the same time...

Oct 26, 2010. 7:18 AM [REPLY](#)



Captain Molo says:
except for the missing rubberband

Oct 26, 2010. 7:19 AM [REPLY](#)



javajunkie1976 says:
I couldn't get the arms to flap using the beads as a rotational point. Also, the wings tend to bind when in the up position. The wire crankshaft, I feel, needs more than just the one spot to attach the actuator arms. It needs to be more like a automotive crankshaft than just an "S" shape. Finally, whenever I try to rotate the current crankshaft, the torsion ends up ripping off the support beads. Great idea, though but the execution needs another look.

Jul 24, 2010. 4:23 PM [REPLY](#)



mr.incredible says:
Cute but doesn't fly. I made it exactly as above. There is not nearly enough wing for the coffee stirrers. It doesn't even glide. I may try again with balsa and a little larger wingspan.

Jun 20, 2010. 6:40 PM [REPLY](#)



dombeef says:
Here is what I built

Jun 5, 2010. 6:09 AM [REPLY](#)



kill1234 says:
Mine doesn't want to flap!

May 22, 2010. 3:49 PM [REPLY](#)



Captain Molo says:

ok few tips:

1. the two cranks might be to tight, try making the holes bigger
2. The wire might not fit through the beads properly
3. the wires could be bent wrong
4. the rubber band might not be strong enough
5. the wires might have gotten glued to the beads

Ornithopters are pretty challenging to make so dont get frustrated when it doesnt work the first time, took me forever to get a working model

if any of that doesnt work please let me know

May 23, 2010. 9:50 PM [REPLY](#)



kill1234 says:

Never mind, here's what I did:

1. I changed the bearings to paperclip coils
2. expanded those 1.5 in pieces to 2 in
3. bent some wire ends to stop them from escaping
4. bent the crank slightly forward

It flaps well in my hand, but then it doesn't flap really well when it flies!

May 25, 2010. 6:34 PM [REPLY](#)



Captain Molo says:

k, now i would find a thicker rubber band and if that doesnt work i would make the wings a tad bit smaller

May 25, 2010. 8:10 PM [REPLY](#)



anthonybui says:

(removed by author or community request)

May 11, 2010. 3:19 PM



anthonybui says:

(removed by author or community request)

May 1, 2010. 7:38 AM



Captain Molo says:

yes and yes

May 1, 2010. 7:50 AM [REPLY](#)



anthonybui says:

(removed by author or community request)

May 1, 2010. 7:41 AM



Captain Molo says:

yes it holds the wire in

May 1, 2010. 7:49 AM [REPLY](#)



anthonybui says:

(removed by author or community request)

May 1, 2010. 7:27 AM



Captain Molo says:

once you make the wing spars, take the two 1 1/2 in. peices and fit them over the two wires, look at the second picture

May 1, 2010. 7:48 AM [REPLY](#)



anthonybui says:

(removed by author or community request)

Apr 30, 2010. 12:06 PM



Captain Molo says:

yup, then just wind it up!

Apr 30, 2010. 12:48 PM [REPLY](#)



anthonybui says:

do you put the wire on the beads or in it?

Apr 30, 2010. 12:03 PM [REPLY](#)



Captain Molo says:
you put the wire through them, you could use small tubes instead

Apr 30, 2010. 12:47 PM [REPLY](#)



anthonybui says:
(removed by author or community request)

Apr 30, 2010. 12:01 PM



Captain Molo says:
you'll need the wire pieces in this picture, this step shows the dimensions for each piece

Apr 30, 2010. 12:46 PM [REPLY](#)



razhang says:
it might fly better if you took off one of the 3 1/2 pieces for the tail

Apr 18, 2010. 6:21 PM [REPLY](#)



77Kapn Krunch77 says:
do you cut the wings apart

Dec 31, 2009. 12:20 PM [REPLY](#)



Captain Molo says:
no

Mar 8, 2010. 8:27 AM [REPLY](#)



philipwoodall says:
how many beads?

Jan 13, 2010. 8:48 AM [REPLY](#)



Captain Molo says:
one or two

Mar 8, 2010. 8:27 AM [REPLY](#)



77Kapn Krunch77 says:
oh nevermind

Jan 1, 2010. 2:06 AM [REPLY](#)



77Kapn Krunch77 says:
sorry sorry i mean 1.25

Jan 1, 2010. 2:04 AM [REPLY](#)



77Kapn Krunch77 says:
how do u connect the 2.25 to the 1.5 at the bottom

Jan 1, 2010. 2:03 AM [REPLY](#)



77Kapn Krunch77 says:

Jan 1, 2010. 2:04 AM [REPLY](#)



ninja_boy1012 says:
also for the wings, does the height say 2 2/4 of 2 3/4?

Dec 6, 2009. 7:43 PM [REPLY](#)



Captain Molo says:
2 3/4

Dec 7, 2009. 11:23 AM [REPLY](#)



Captain Molo says:
well I would use wax paper but if you have any plastic bags that would probably work a lot better

Dec 1, 2009. 6:38 AM [REPLY](#)



ninja_boy1012 says:
(removed by author or community request)

Nov 26, 2009. 11:17 AM



Captain Molo says:
you mean the body? the beads? I don't understand

Nov 27, 2009. 8:34 AM [REPLY](#)



ninja_boy1012 says:
srry i didnt make it clear. i mean both. i cant find any beads at home. =/

Nov 27, 2009. 1:11 PM [REPLY](#)

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