

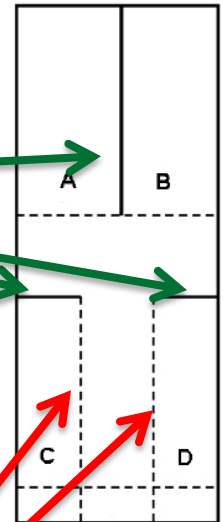
Materials:

- One paper helicopter template
- 2-3 paper clips
- Scissors

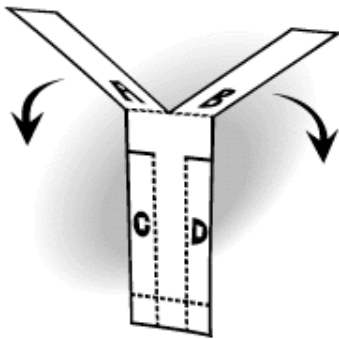


Making your paper helicopter:

- 1) The paper has three rectangles. Each rectangle will make a helicopter.
- 2) First cut the solid lines on the paper given to you. Do not cut the dotted lines.
 - Cut around the border
 - Cut the three places that the arrows point



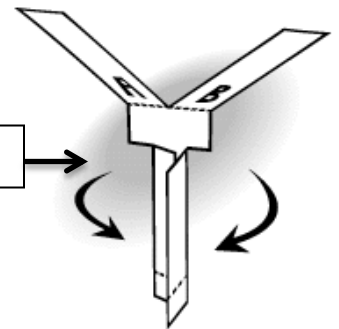
- 3) Fold A toward you and B away from you so that it makes a T shape



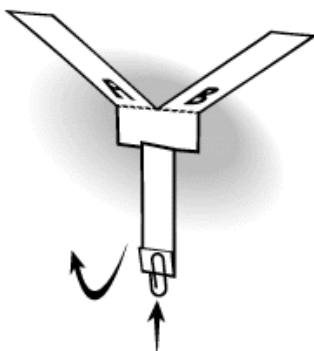
The flaps are the propellers

- 4) Next fold Section C and Section D along the dotted lines to make a tail.

The tail is where you hold it



- 5) Lastly, Fold the bottom up and use a paperclip to hold it in place.

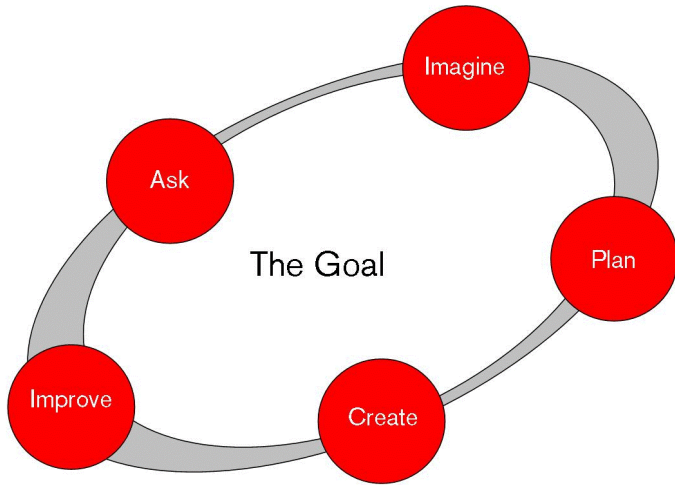


- 6) Now, test it for the first time.
Hold it up as high as you can and drop it!
What do you see?
Now use the back of the page to do an experiment.

Engineering Design:

Engineers like to make things and make things that work well. They must use science and carefully plan the best way to get an answer.

The goal for today is to make the best helicopter -- A helicopter that can hover the longest before hitting the ground.



The Goal: Longest Hover Time

Ask: What effects hover time?

Imagine: Length and width of the parts effect flight

Plan: Change only one width or length

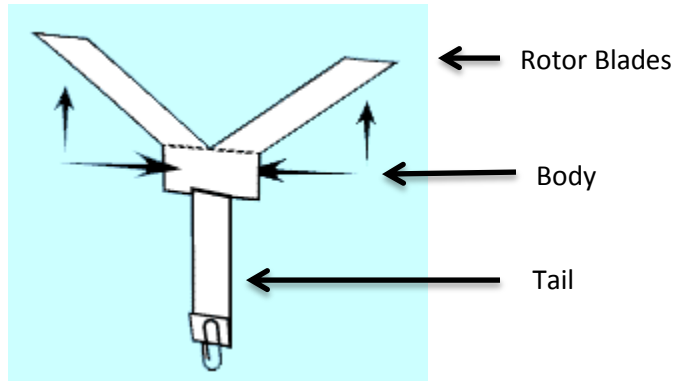
Create: Make a helicopter with only one change

Improve: Test my prototype and try other variables

Helicopter Parts:

What can be Changed?

<i>Rotor blade length</i>	<i>Rotor blade width</i>
<i>Body width</i>	<i>Body length</i>
<i>Tail length</i>	<i>Tail width</i>
<i>Weight</i>	



Data Table:

Test #	Description (Change)	Time
1	No changes to template – same width and length of rotor, body, and tail and the same weights	
2		
3		
4		
5		