How to Build a Paper plane Launcher

For fun let’s undertake this design challenge. Let’s see who in all my DC&T classes can make a launcher and a plane that travels the furthest.

**PAPER AIRPLANE LAUNCHER**

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Power up your paper airplanes!

FrugalFun4Boys.com
To make your launcher, grab some scrap board and two large nails or screws. I want all our launchers to launch the planes at an angle, so cut another scrap of timber no higher than 40mm high into two rectangles and used these to boost up one end.

To assemble it, all you need to do is, drive the nails into the board. Then use wood glue to attach the two rectangles under the nailed end of the board. You can screw or nail them if you do not have glue, remember to clearance drill the leg, before you attach it to the board.

The wood glue will take over night to dry. If you do not have clamps put a container of water on top of it to ensure you get a good stick.
Make a basic paper plane and let’s get designing!!!!!

Try launching planes by just holding the tail of the plane against the rubber band. Explain here what happens to the planes.

Remember to take lots of photos of building your launcher, your plane and measuring the distances of your test flights.

Discuss if the launcher is currently successful? What happened when you used it, how far did the plane travel? How do you think you can improve the design?

Now let’s develop some criteria.

Constraints (Must have)

Legs no more than 40mm high

One standard type rubber band, like in the picture.

A plane made from standard A4 sized paper.

Success Criteria

What is the longest distance your plane can travel?

Now I will change add one constraint, and let’s see how that effects the outcomes of our success criteria.

Let’s add a paperclip to the constraints list and see how that affects the success criteria.

Follow the instructions below to see how to add the paperclip.
Add a paper clip to the nose of the plane as shown in the next steps. The paper clip works as a hook and gives the plane a way to grab on to the rubber band. It’s easy to launch planes with plenty of power!

To modify your plane, you will need a paper clip, a hole punch, and tape.
Unfold your paper clip as shown. Then punch a hole in the plane. The smaller end of the unfolded paper clip will go through this hole.

Tape the paper clip to the nose of the plane as shown.

To launch planes, simply pull back and enjoy the ride. Use this paper plane launcher on the floor to record your official distances. Put it on top of a table to see if it affects the distances. Measure the height of the table and record it below.
The paper plane launcher makes planes fly MUCH farther than they would if you threw them. They also fly faster! So much fun.
Now to expand your ideas and record your results.

Use the ideas from above on how you might modify your plane and the launcher. Try them out and change the constraints, considerations and the success criteria to suit your modifications,

Constraints (Must have)
Legs no more than 40mm high
One standard type rubber band, like in the picture.
A plane made from standard A4 sized paper.

Considerations (Might have)
Paper clip
Table

Success Criteria
What is the longest distance your plane can travel?

Evaluation
What was the longest distance your plane travelled? ________________
Did you fly your plane inside or outside? ________________

Did you fly your plane off a table? What effect did it have? ________________
When launching from the table how was the experience for the end user of the launcher? Did it make it easier? Was it more fun to use? Did the rubber band snap your fingers more or less? Did the plane travel further? What feedback did you receive from other users of the launcher? Who could get the plane to travel the furthest in your family? What would be your recommended way of using the launcher?

Turn all of these questions into a paragraph about your launcher.