

## Create a Pop-up Origami House with Burwood Library



This activity shows you how to create your own origami pop-up house using everyday craft materials that you can find at home. Use your imagination to design different rooms and spaces in this foldaway house.

This is a great introduction into physical model making and supports learning into creating virtual environments by having a hands on understanding of the 'x', 'y' and 'z' axis.

### Equipment:

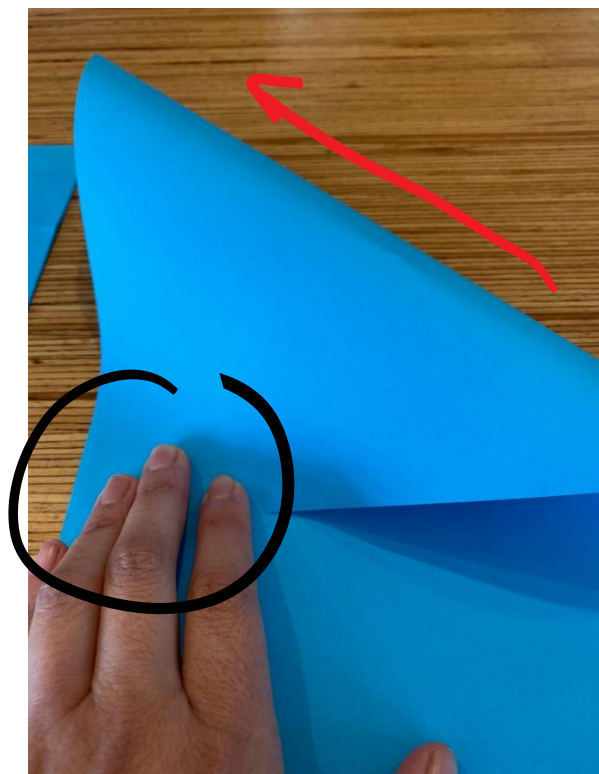
- 4 x A4 pieces of 80gsm paper (normal copy paper)
- Extra pieces of paper, these can be plain or coloured
- Scissors
- Glue
- Pens, pencils and textas (any utensils that you can draw with)



### Step 1: Create a square

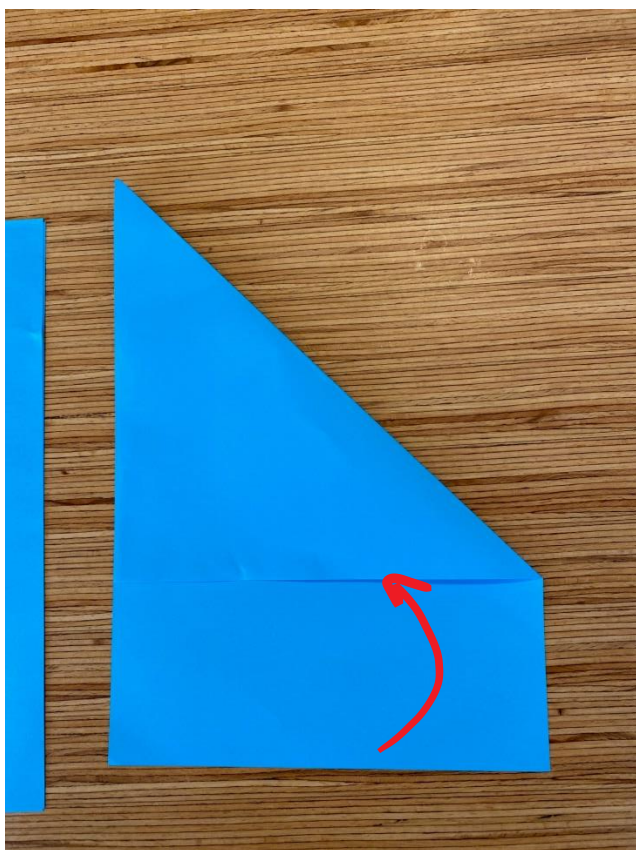
Take your A4 piece of paper and make sure that it is in a portrait orientation.

To make a square take the top right hand corner and bring it to the edge of the page, so that it makes a 90 degree angle triangle.



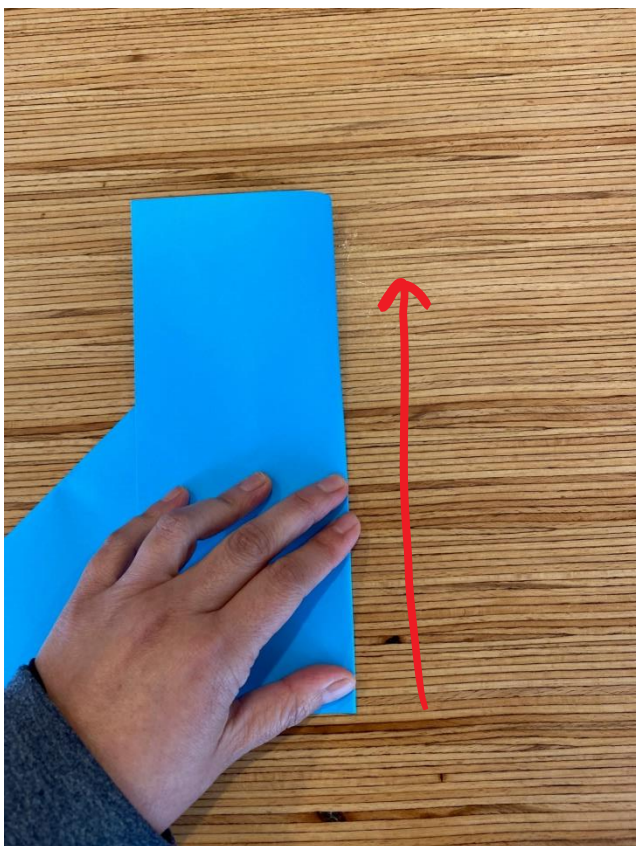
### Step 2: Flatten the edge

Flatten the long edge of the triangle with your fingers whilst holding the other corner down, so that your paper doesn't move.



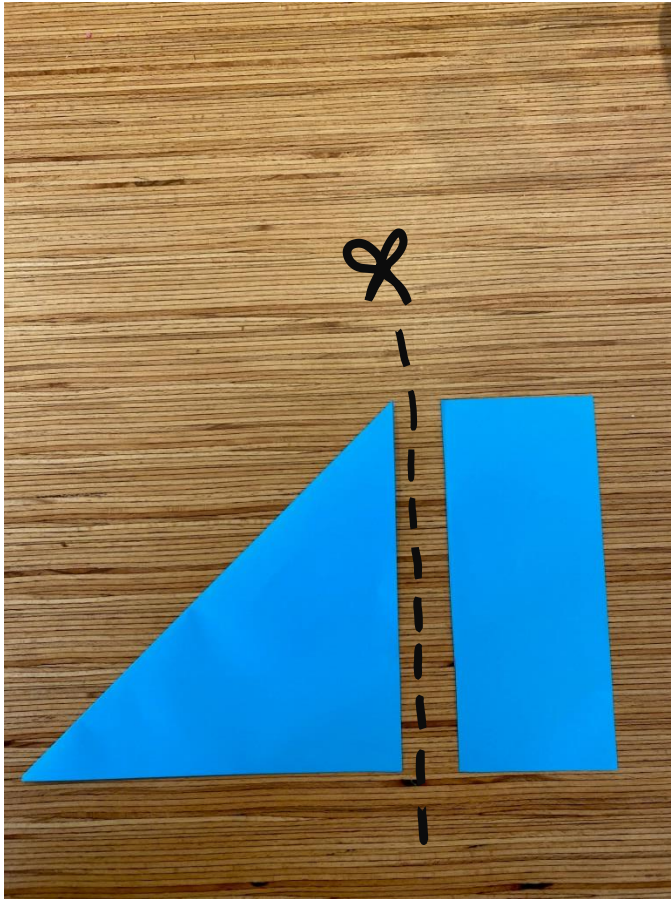
### Step 3: Excess paper

Underneath the right angle triangle there will be excess paper. Fold the rectangle, so that it is flush with the bottom of the triangle.



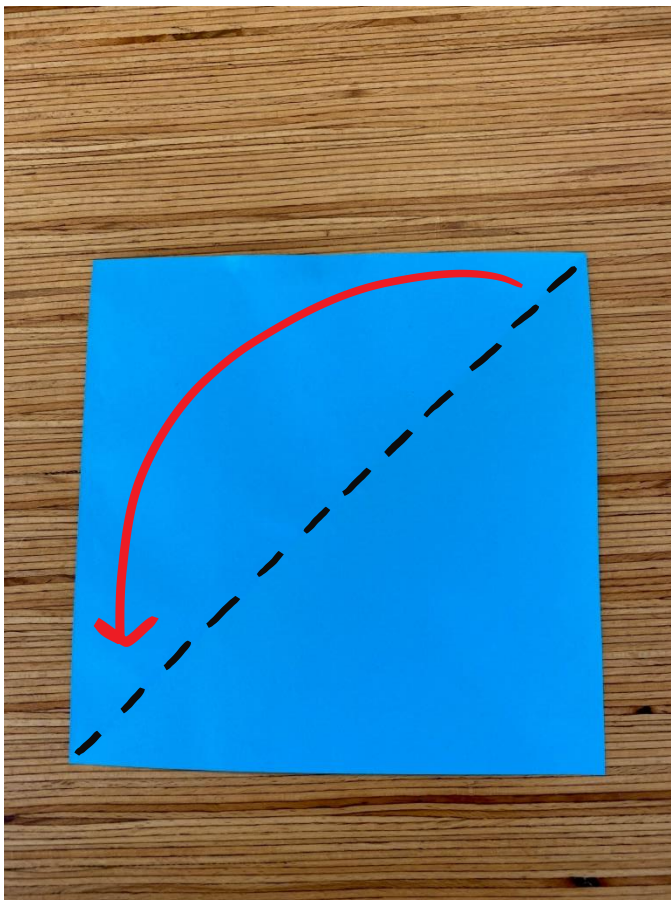
### Step 4: Flatten the fold

Flatten the fold with your fingers to create a crease to make a line along the edge that you will cut off.



### Step 5: Cut the excess

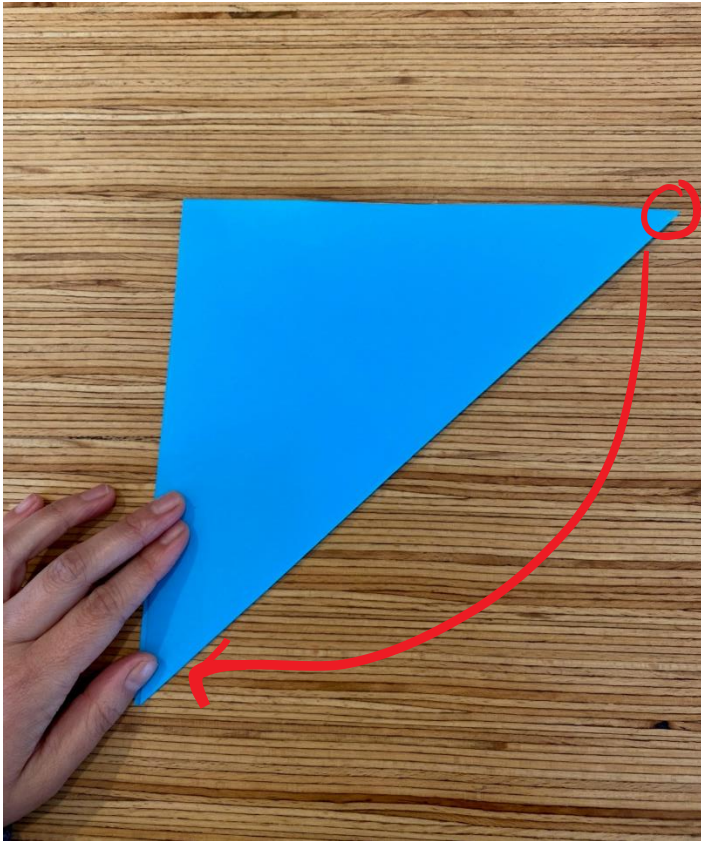
Using a pair of scissors cut along the fold line. When you open up the triangle, your piece of paper should now be a square.



### Step 6: Fold a diagonal line on the other side

When you open up the square there will be one diagonal crease running through the middle of the square.

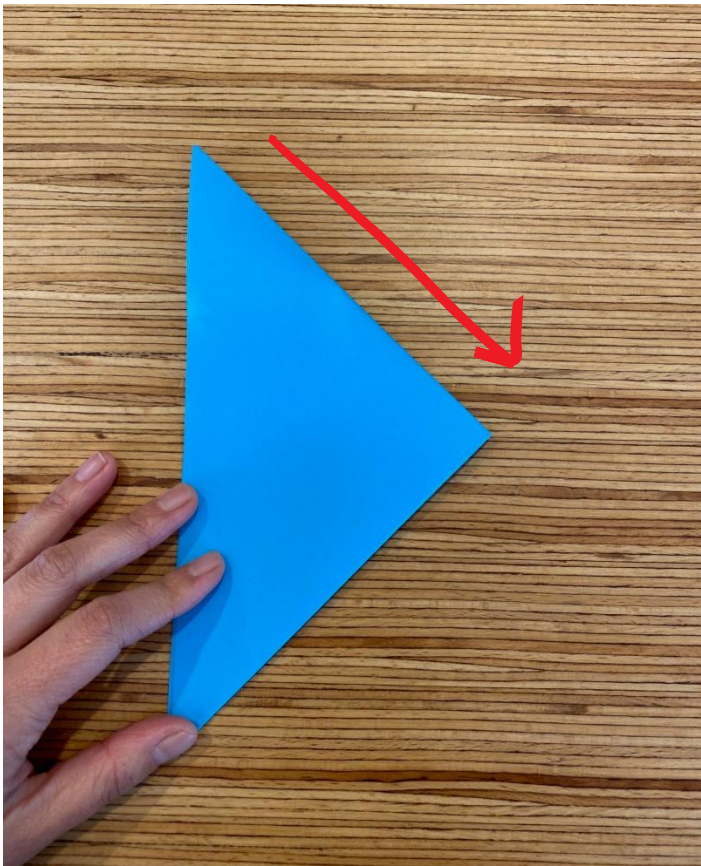
On the side there is no crease, create a diagonal crease, by folding the corners together.



### Step 7: Create more triangle folds

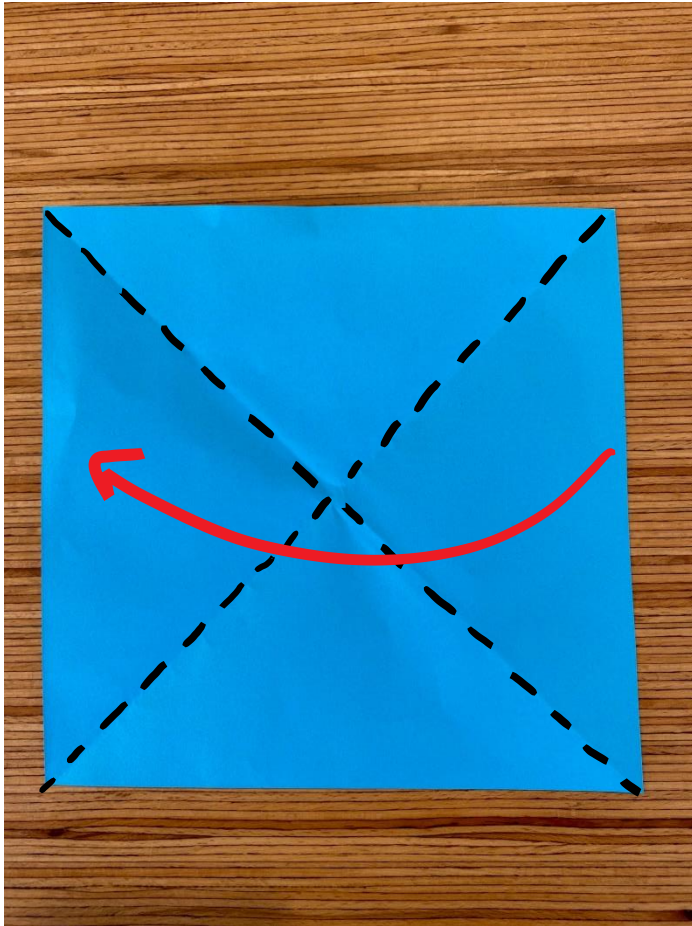
From the large triangle fold, take the corner from the long side and bring it to the other side to create a smaller triangle.

This will help define the crease, so it makes the structure easier to fold in and out.



### Step 8: Flatten the fold

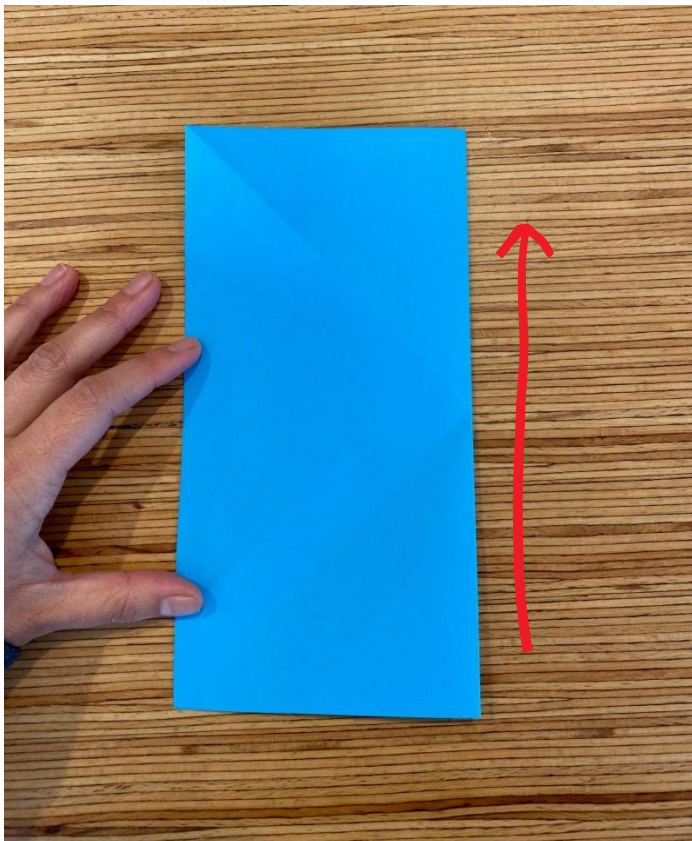
Using your fingers flatten the fold, making sure all sides are lined up to one another.



### Step 9: Rectangular folds

When you open up your square you should see an 'X' in the middle where your fold lines were.

Take one long side of the square and bring it to the other side.

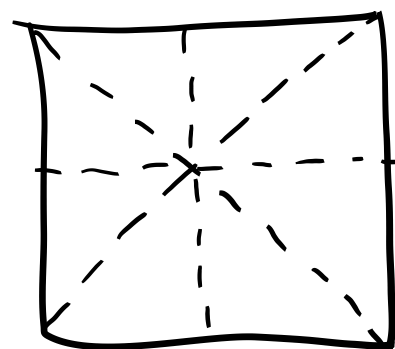


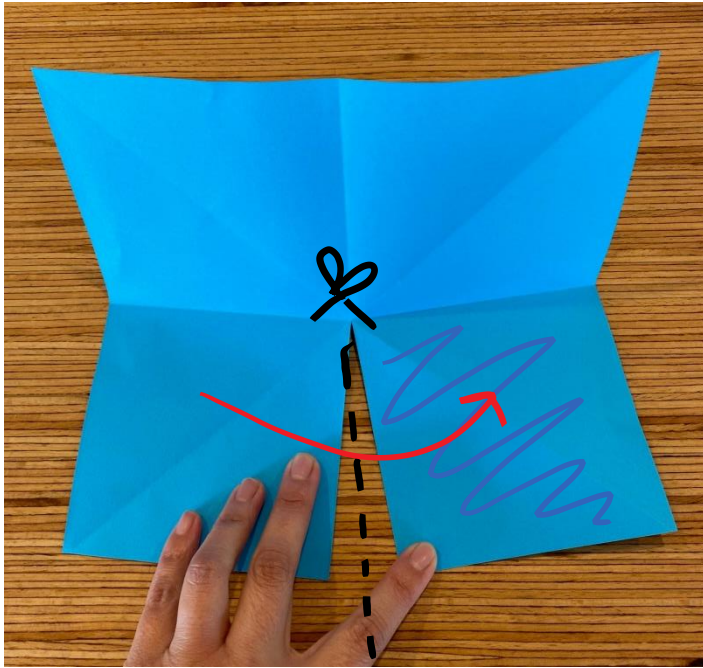
### Step 10: Flatten the fold

Flatten the fold and your shape should be a long rectangle.

Repeat Steps 9 and 10 on the other side.

When you open up the square you will see a diagonal cross and a vertical cross running through the centre of your square.



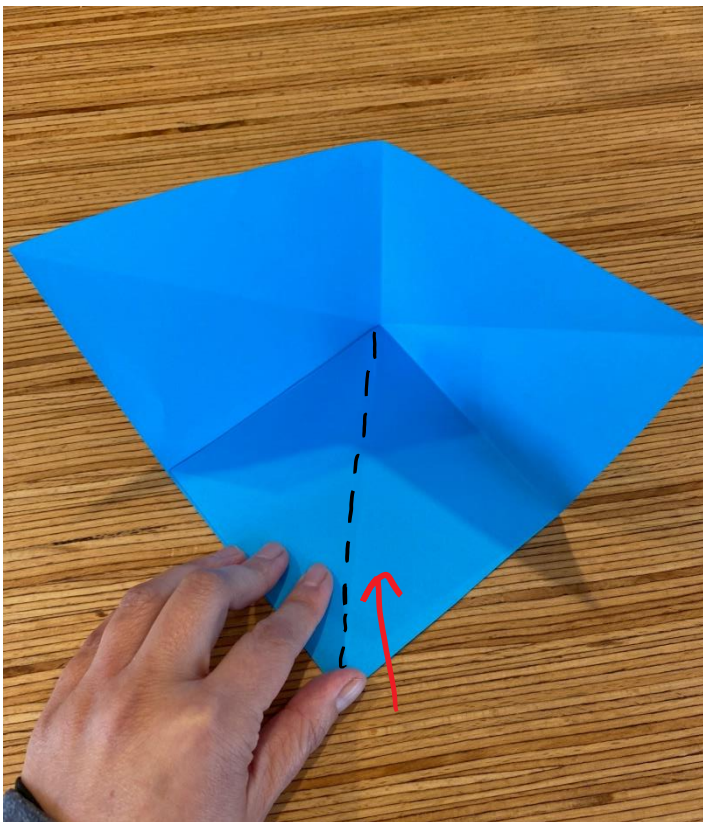


**Step 11: Creating a “room”**

Cut along one of the short folds in the centre of the square until you reach the middle of the square.

The two loose parts of the paper will become the “floor” of the room.

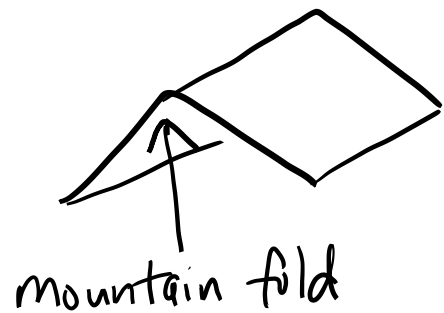
Glue one of the squares and then move the other square on top, so that the edge of the square fits within the centre crease.



**Step 12: Folding the floor**

In the “room” you will have two walls and a floor.

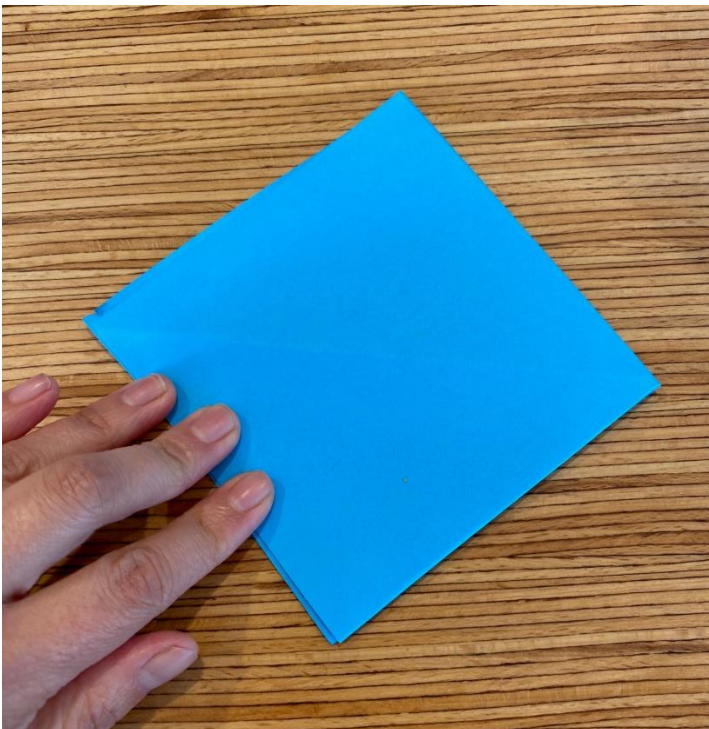
The “floor” will have a diagonal crease. Gently create a mountain fold from the crease.





**Step 13: Collapse your room into a flattened square**

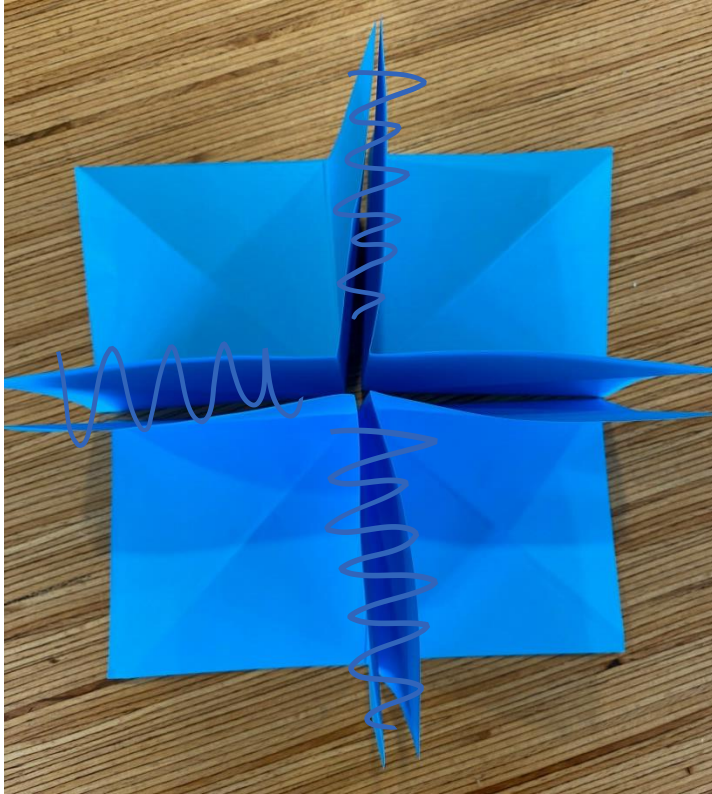
As you complete the mountain fold, your room should naturally fold into a square. Guide the folds with and then flatten all sides with your hands.



**Step 14: Create the other rooms**

Repeat Steps 1-13 three more times so that you have four rooms.

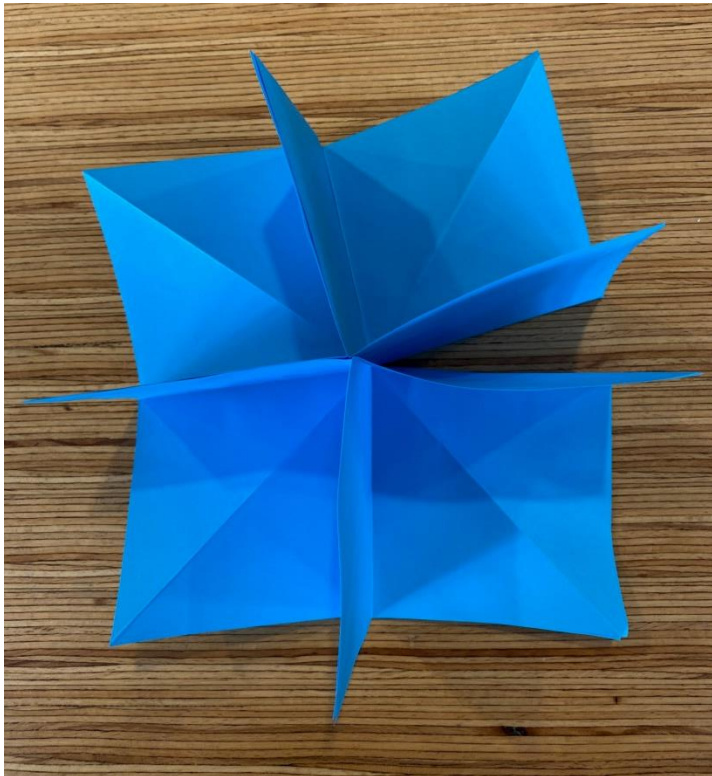




### **Step 15: Gluing your house together**

Place your four rooms to create a square. The corner of each room should face the centre and the openings should face outwards.

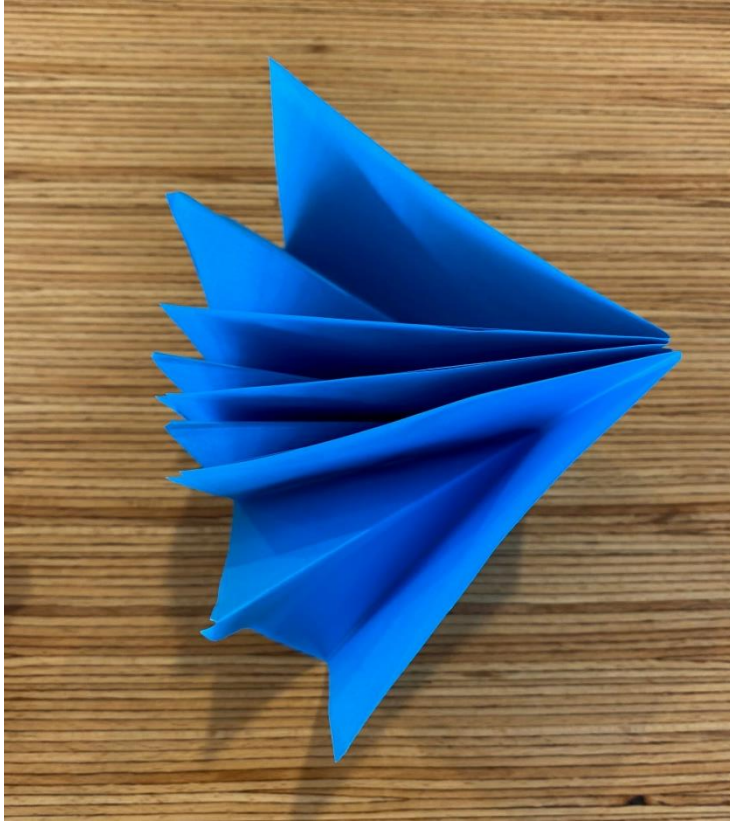
Glue the entire square of one wall and stick it to the adjoining wall. Make sure that the walls are as flush as possible.



### **Step 16: Firmly press down on the “walls”**

Glue the three sides together leaving one side unglued. This will allow you to fold your house completely.

When you have glued the three walls together, firmly press along all parts of the walls so that the rooms are stuck together.



**Step 17: Fold the house in completely to check the folds**

Bring the two walls that were not glued down in towards each other. This should create a “book” structure.

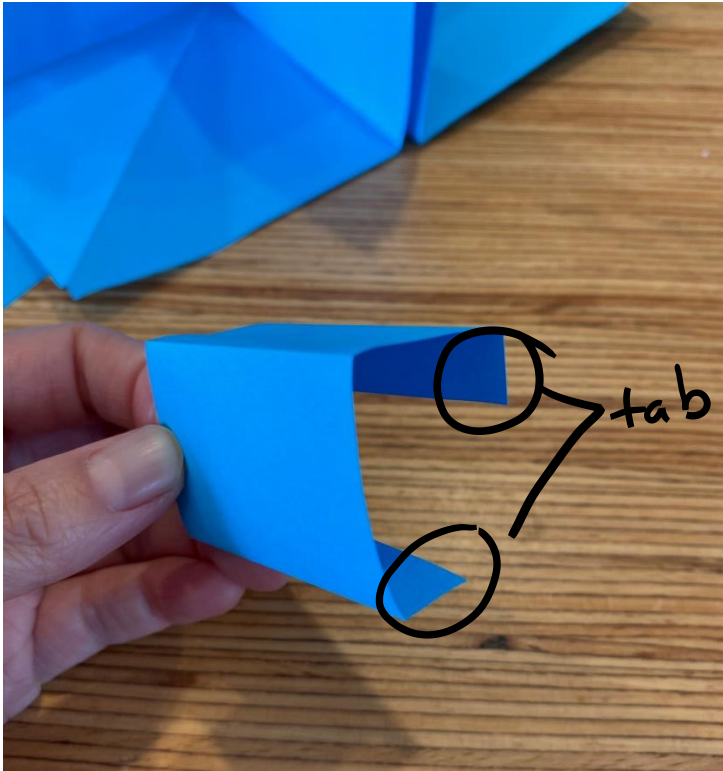
As you are folding the sides together, make sure that each floor, folds nicely into a “mountain fold”.



**Step 18: Flatten the square**

When your house complete collapses into a square fold. Use your hands to press down firmly to create strong creases.

This will help your house fold in and out easier.

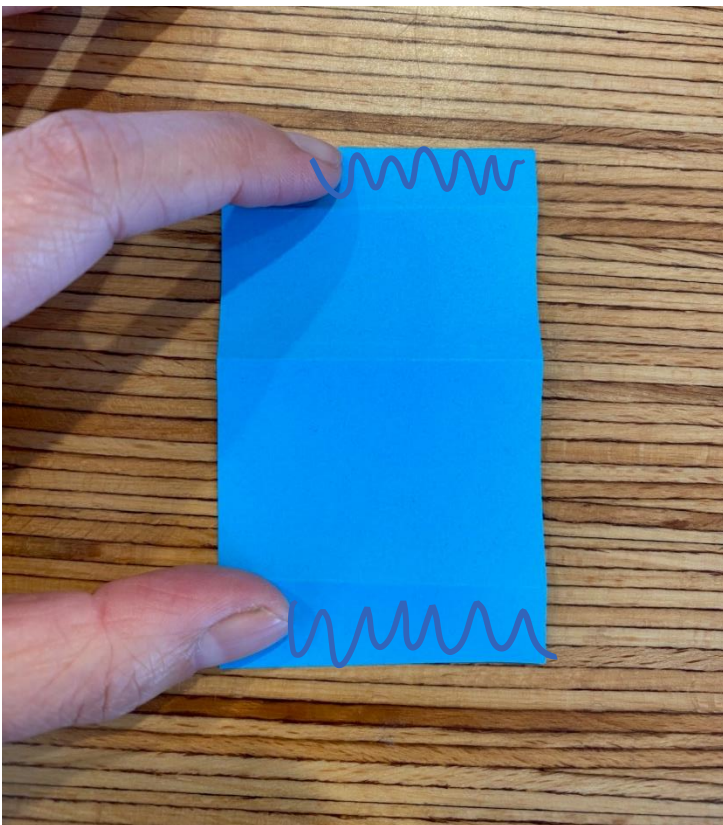


### Step 19: Experiment to create furniture

Now that you have created your structure, you can experiment to create different furniture and features for your house.

Think about what you want to create and test out different shapes, by folding different angles in your paper.

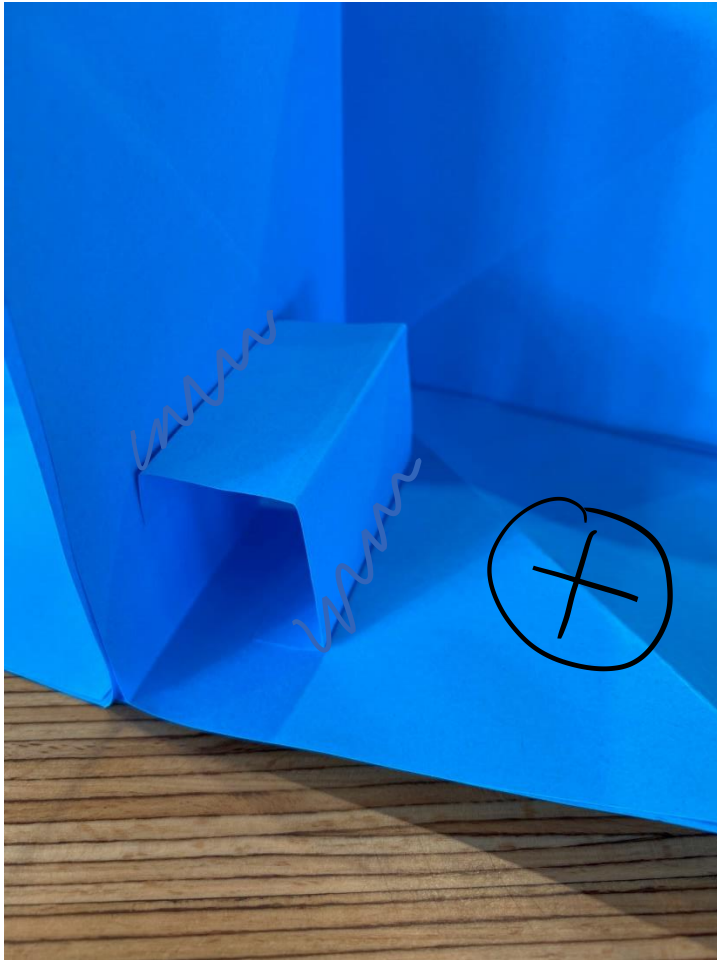
Remember to create “tabs” that will stick to the wall and the floor.



### Step 20: Gluing furniture/feature

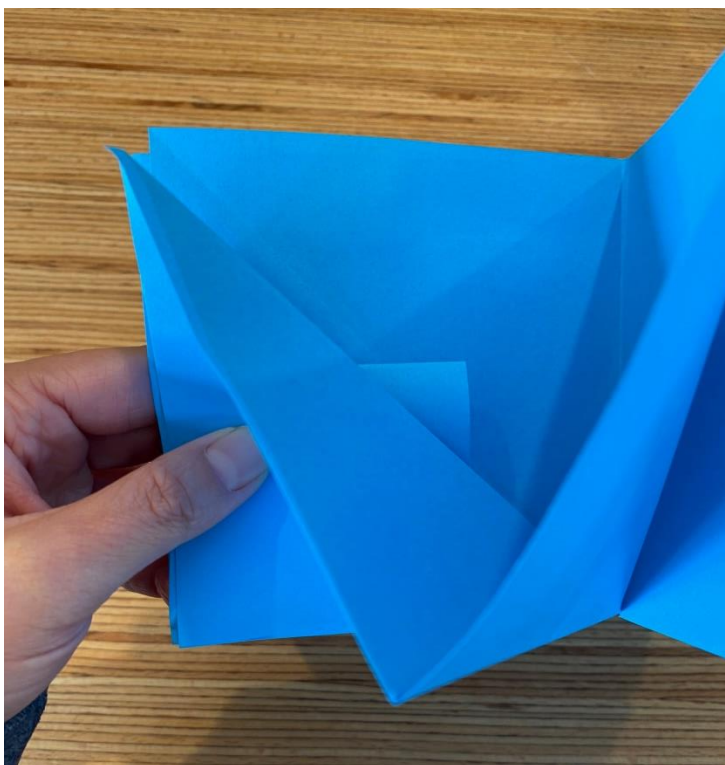
Put glue all the way along the tabs of your furniture/feature.

Make sure that it does not go over the crease because this will make it very “sticky” and may glue other parts of the wall onto your furniture.



### Step 21: Gluing your furniture into your house

When you glue your furniture onto your house make sure that it falls within the side of the crease. This will allow your house still fold nicely into a square.



### Step 22: Test the fold

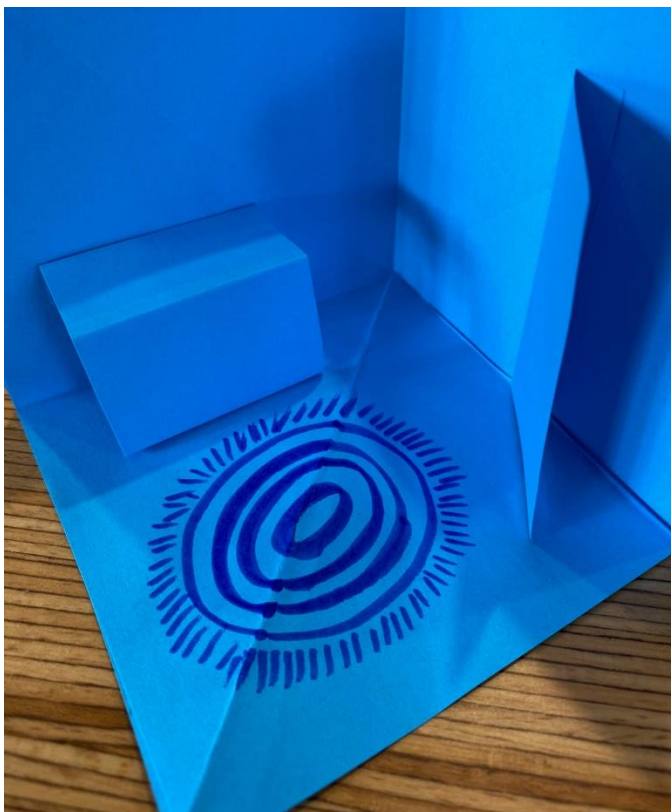
Test the fold of your furniture by folding the room. You can adjust the fold of your furniture, by gently squashing it down.



### **Step 23: Build and design your room**

Use your imagination to design your room. You can use different pieces of paper and attach them.

You can find different templates “paper craft furniture” and “origami” houses online that can give you lots of inspiration.



### **Step 23: Use textas and pencils**

If you like drawing, you can either draw directly onto the paper, or you can design different features of your house and draw it on a separate piece of paper and then glue it on later.

Think of the design and aesthetic.

The best thing about this activity is that you can continue to build it with easily found materials at home.