MEDIA 4MATH

Creating a Scale Model of Himeji Castle

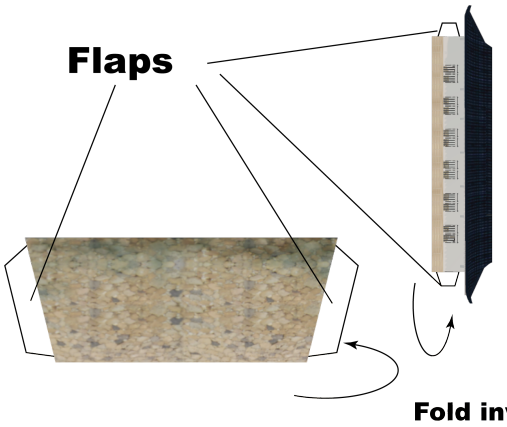
Background

The *Geometry Applications* video on *Angles and Planes* included a segment on Himeji Castle in Japan. In this workbook, we provide templates and a procedure for creating a scale model of Himeji Castle.

At the end of this document, you'll find a number of cut-out patterns for the different levels of Himeji Castle. If possible, print out these patterns on card stock, for best results. You will also need glue to assemble the different sections.

Assembly

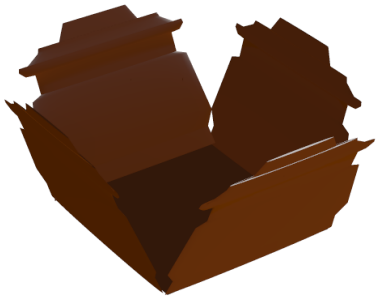
Let's start with Level 1. Cut out this section. Fold the white trapezoidal sections: This is where you'll apply the glue for assembling each section.

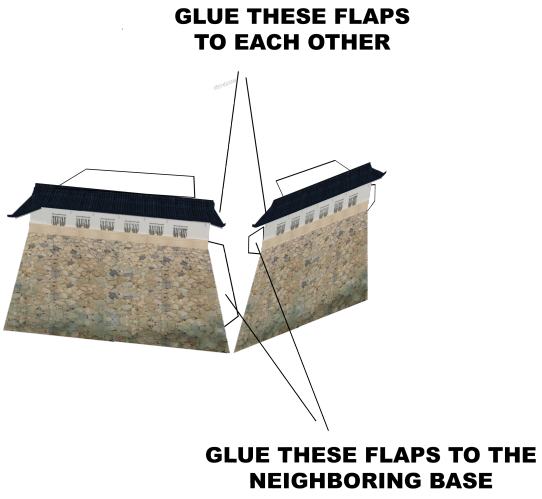


Fold the dark triangular corners outward.

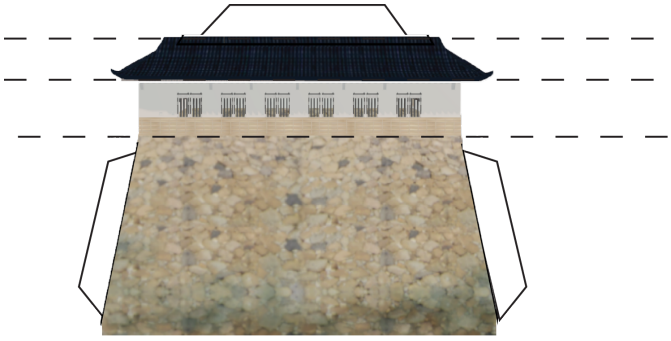
Fold outward

Begin your assembly of the first level as shown here.

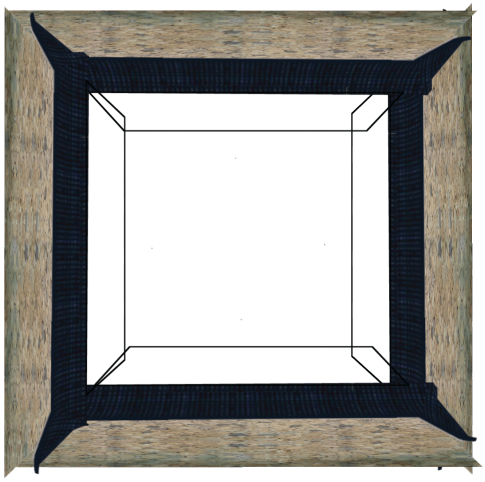




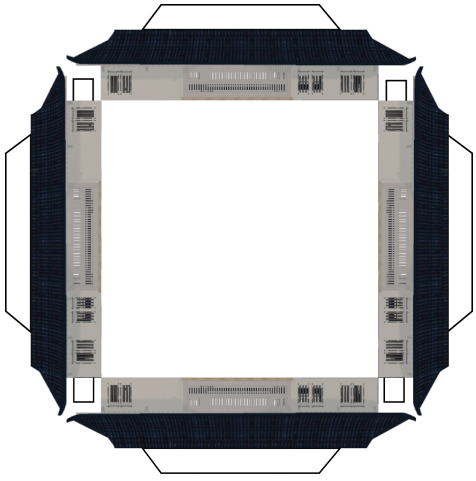
Fold each section along the lines shown here.



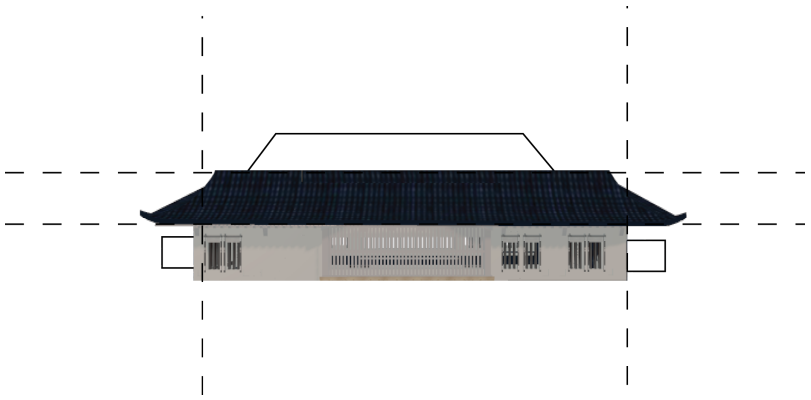
Here is a top view of the assembled level.



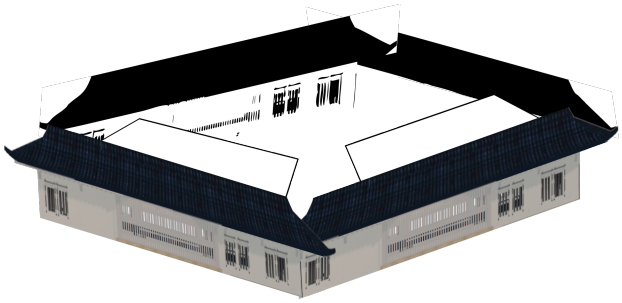
Now start with Level 2.



Fold along the lines shown here.

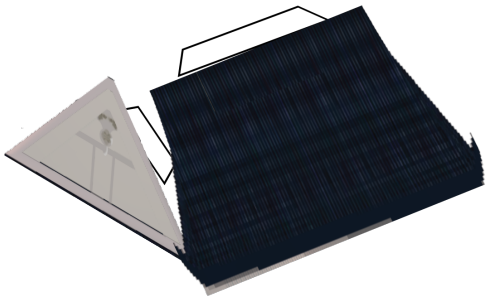


Fold and glue the section.



Continue building the different levels of the castle and stack them as shown. Glue the levels to each other.

Finally, cut and assemble the roof area.



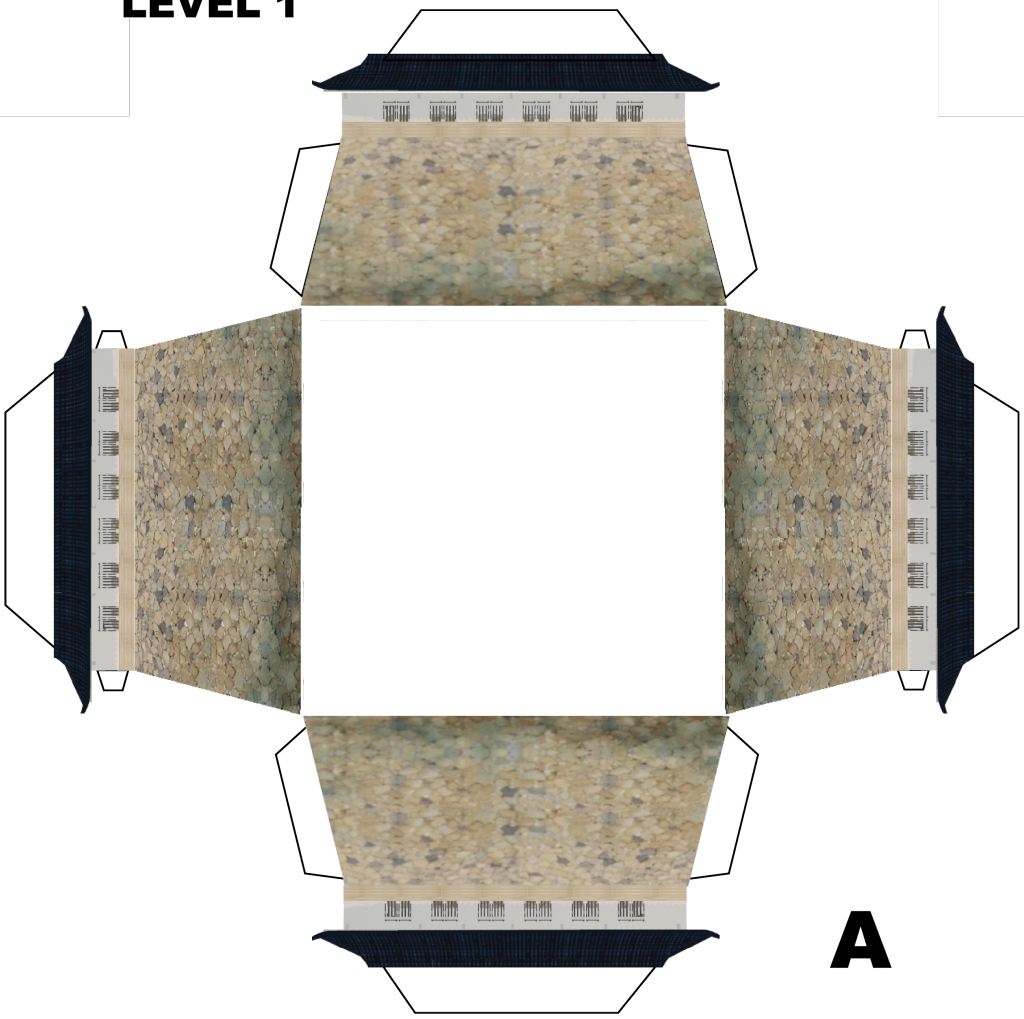
Once your castle is assembled, you can cut out and set up the foliage.

Questions to Consider

1. **Now that you have assembled the scale model of the castle, investigate how its architecture limits the line of sight for those at the base of the castle.**

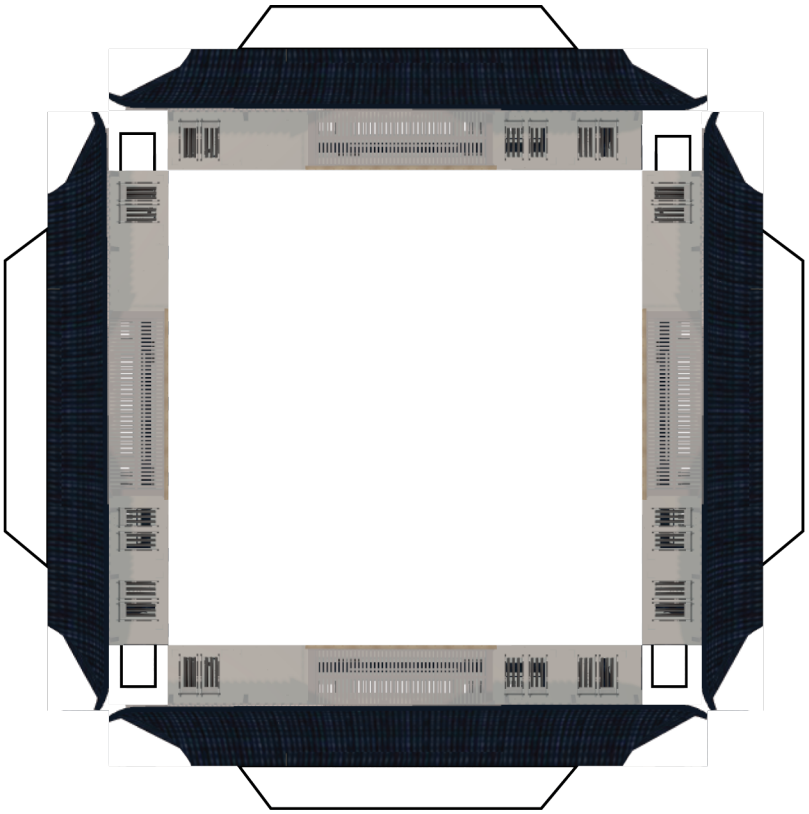
2. **Measure the angle the castle makes with the ground. What kind of angle is it? How does it affect the line of sight.**
3. **Where on the architecture of the castle do you find acute angles? What purpose do you think they serve?**

BASE AND LEVEL 1

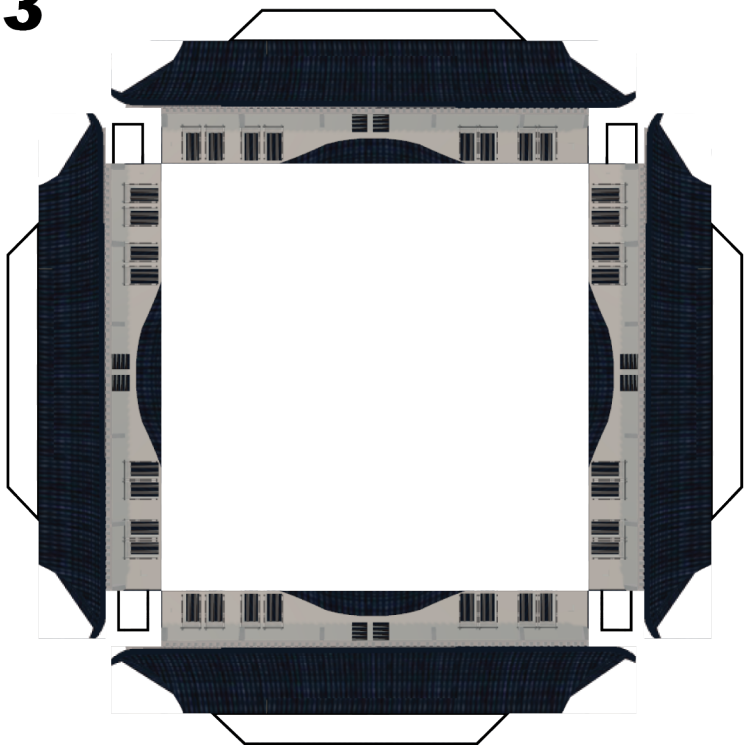


A

LEVEL 2

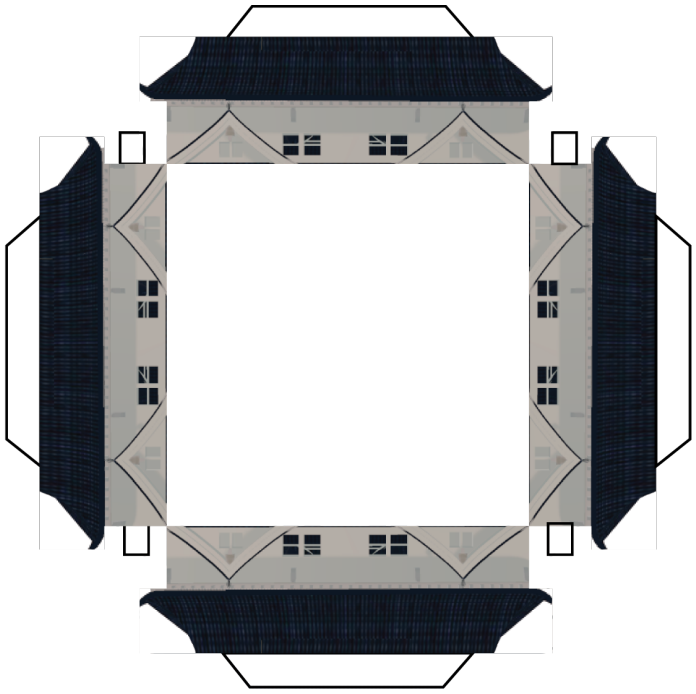


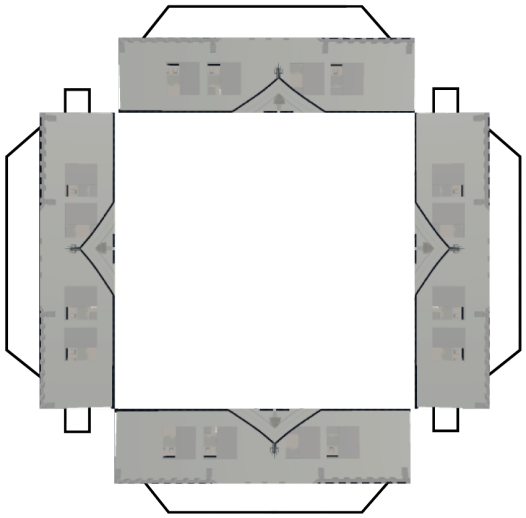
LEVEL 3



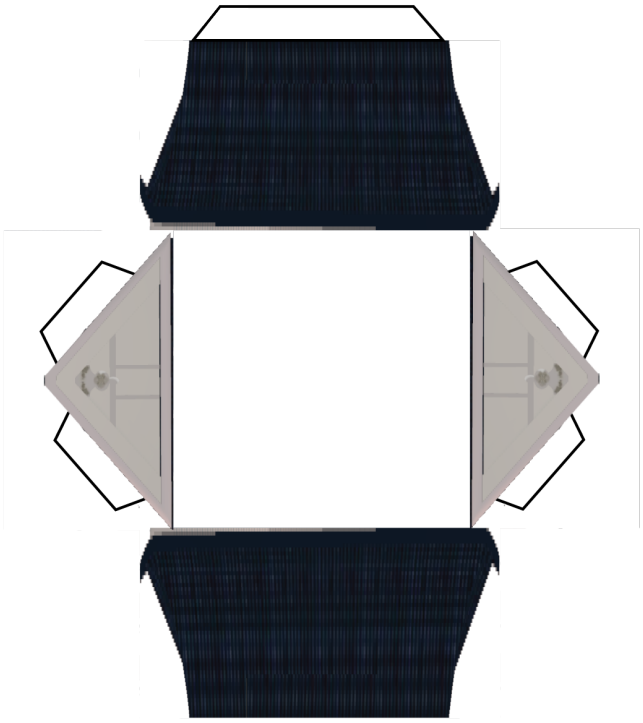
B

LEVEL 4





LEVEL 5



ROOF

C

D