BRANDEBURG´S GATE PRINTING PROJECT

Description.

Brandenburg's gate is one of the most popular monument in Berlin and an old entrance gate to the city.

It was built by Carl Gotthard Langhams between 1788 and 1791 by the order of Frederic Guillaume III the Prussian king at that time.

This monument has witnessed so many events and historical figures such as Napoleon, the rise of Nazism, second world war or the fall of Berlin wall.

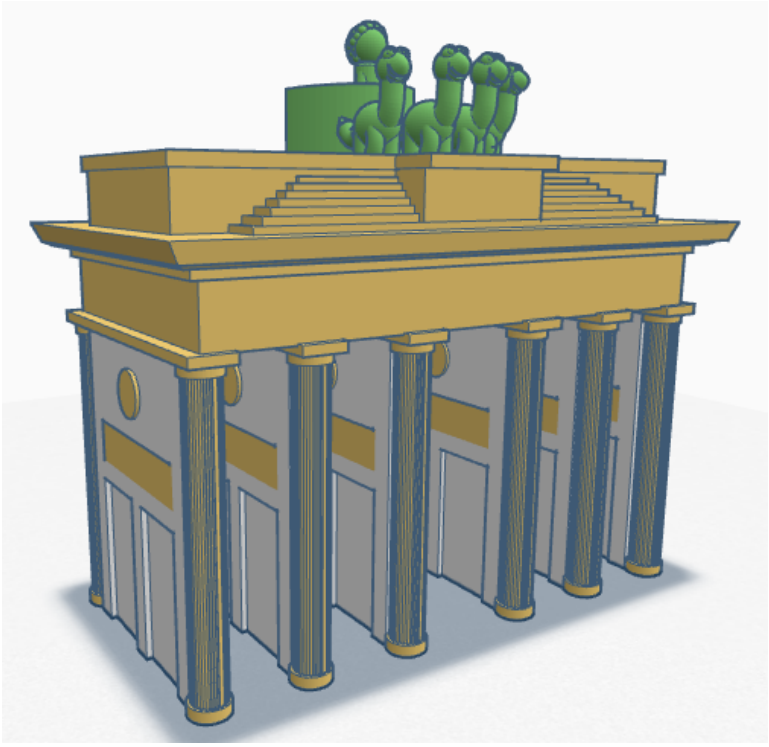
The Brandenburg´s gate and the chariot have been restored due to the passage of time and the damage they got because of the second world war. Therefore, we are going to put ourselves in restorers´ shoes, we have to create Brandeburg's gate 3D model. We will consider the next information:

- 26m high, 55m wide, 11m long.
- It has 5 entrances, 2 small gates each side and one big gate in the middle.
- The chariot is placed in the top of the building, it has 5 m high, it represents the goddess of Victory in a chariot with 4 horses ahead.
- The bases of the 12 pillars have 1.75m diameter.

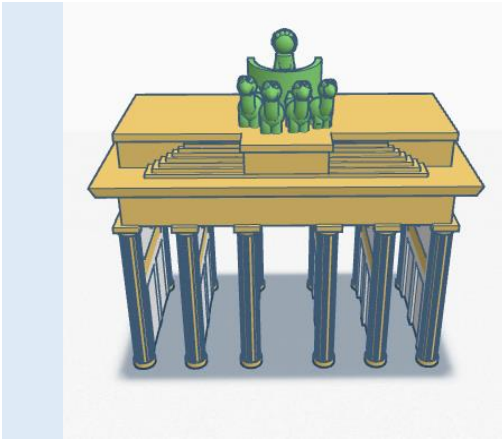
Objectives.

- Strengthen the handling and shaping of basic shapes.
- Replicate a 3D model trying to be as realistic as possible.
- Enhance the pupils´ creativity when creating the structure and add the distinctive touch to the design.

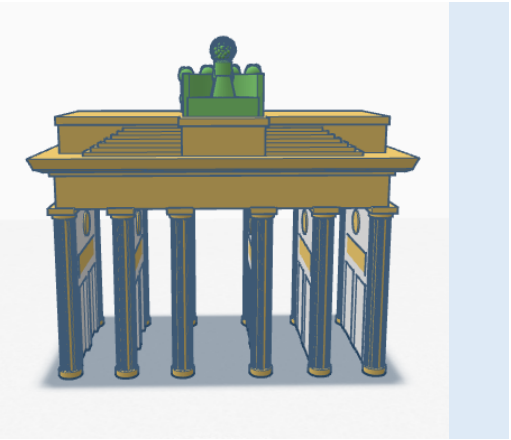
Reference model designed with Tinkercad.



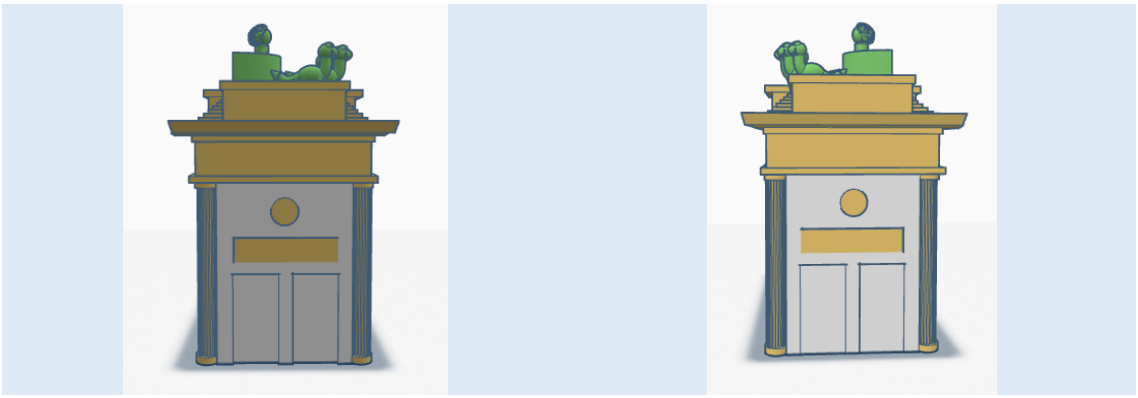
Front view



Rear view



Lateral views

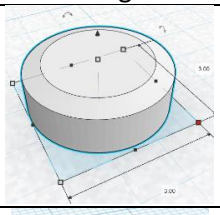
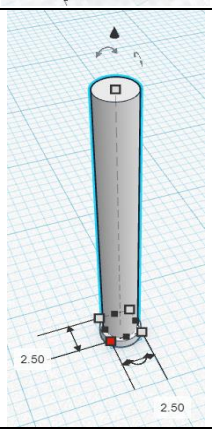


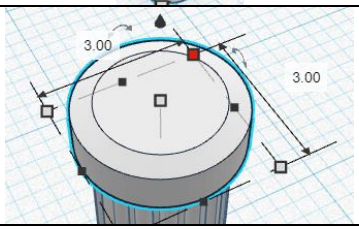
Model features.

To replicate this model, we are going to divide the construction in 4 different parts

- Create the pillars.
- Create the walls between the pillars.
- Create the upper part.
- Create the chariot.

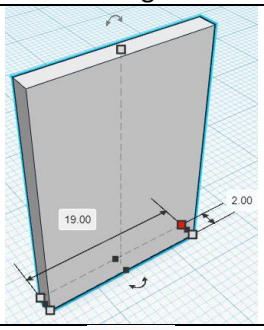
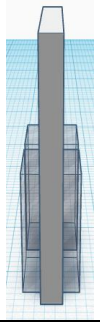
Pillars.

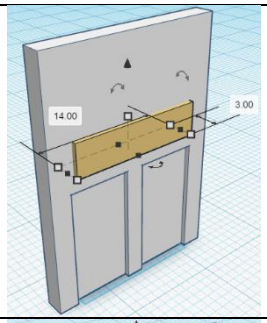
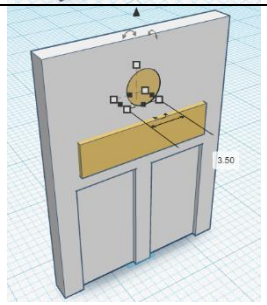
3D object	Size (mm)	Image
Cylinder	3mm diameter x 1mm high	
Cylinder	2.5mm diameter x 24mm high	

18 x Empty cylinders	0.35mm diameter x 30mm high	
Cylinder	3mm diameter x 1mm high	

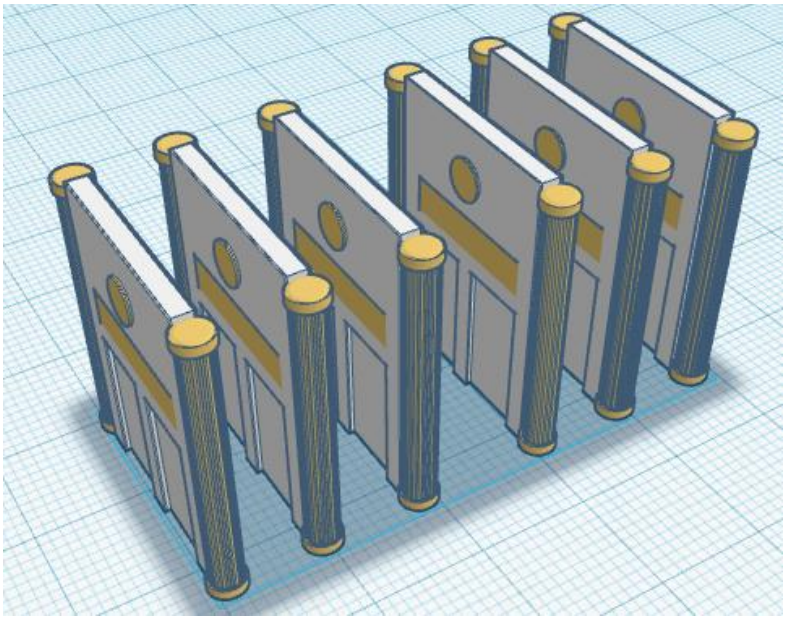
We have to create 12 pillars, the distance between them will be 24mm lengthwise and 11mm breadthwise, excluding the 2 pillars placed in the central entry, they have 15mm between them.

Walls

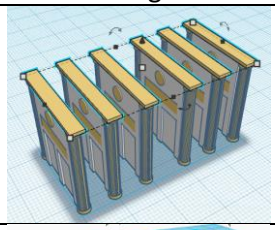
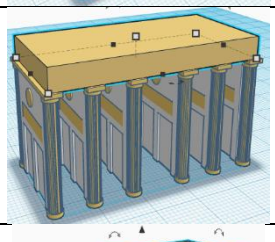
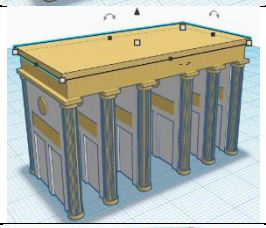
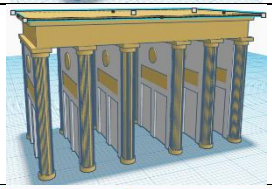
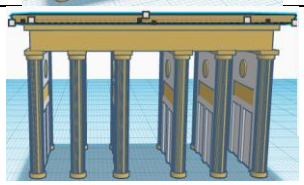
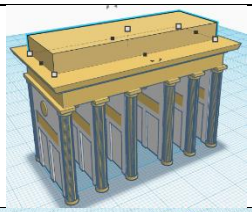
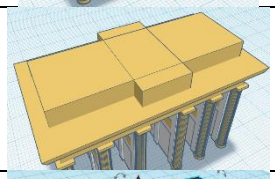
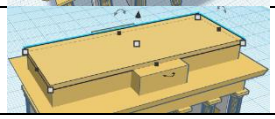
3D object	Size	Image
Cube	19mm wide x 2mm long x 26mm high	
4 x empty cubes	6.5mm wide x 2.20mm long x 12mm high	

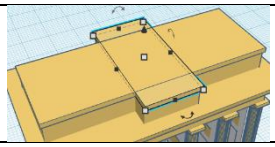
Cube	14mm wide x 3mm long x 3.5mm high	
Cylinder	3.5mm diameter x 2.30mm long	

We get that design due to our work in the first and second part.

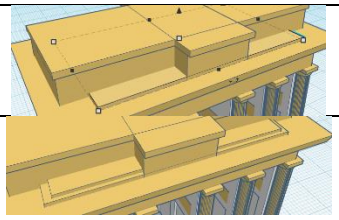


Upper part.

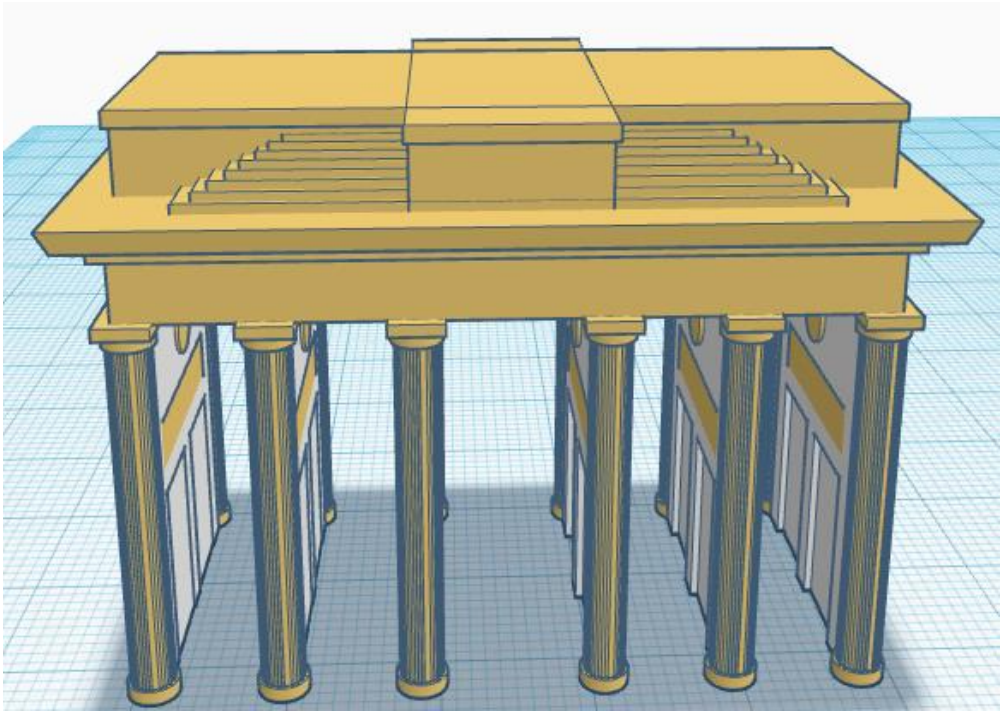
3D object	Size (mm)	Image
6 x cubes	3.5mm wide x 25.5mm long x 0.70mm high	
Cube	48mm wide x 24mm long x 5mm high	
Cube	50mm wide x 25mm long x 1mm high	
Cone	Top radius: 4.02mm Base radius: 4.12mm Height: 20mm Sides: 4 52mm wide x 29mm long x 0.26mm high	
Cone	Top radius: 4.02mm Base radius: 4.12mm Height: 20mm Sides: 4 54mm wide x 30mm long x 1.40mm high	
Cube	50mm wide x 16.5mm long x 4.5mm high	
Cube	12mm wide x 24mm long x 4.5mm high	
Cube	50.5mm wide x 17mm long x 1mm high	

Cube	12.5mm wide x 24.5mm long x 1mm high	

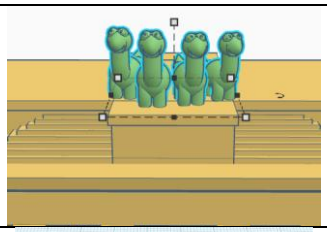
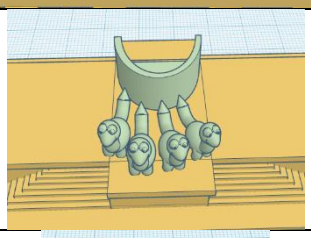
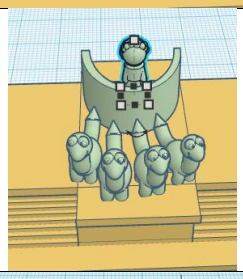
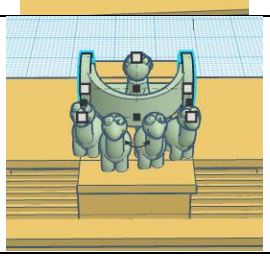
We will finish the upper part with the podium design, so we have to select, copy and repeat 4 times the following elements:

Cube	40mm wide x 24mm long x 0.5mm high	
Cube	37.75mm wide x 22.80mm long x 0.5mm high	

This is how the result looks like:



When ending the Brandeburg´s gate structure, we will add the distinctive touch with the chariot as we said before.

4 x Simple Dinosaur	3.30mm wide x 11mm long x 8mm high	
Round Roof + Empty Round Roof	11.50mm wide x 7.5mm long x 6mm high 10mm wide x 7.5mm long x 5.5mm high	
Fig. 6 - Standing	3mm wide x 3.25mm long x 7mm high	
2 x Spoked Wheel	6.30mm diameter x 1mm wide	

Customize the chariot and the Brandenburg's gate with your favourite colours and objects.