





ATOMIUM PRINTING PROJECT



Description

The Atomium is the main tourist attraction of Belgium's capital city, Brussels. Every year more than 620.000 people visit this gorgeous monument.

It was designed by the engineers André Waterkeyn and Jean Polak due to the universal exhibition that took place in 1958, it represents an iron magnified 165 billion times.

Originally, this building should not have lasted more than six months, but thanks to its popularity and success, nowadays we can still enjoy this structure.

We can visit most of its spheres to enjoy different exhibitions inside or we can just enjoy the marvellous city views from the restaurant located in the upper sphere.

In this activity we are going to replicate at scale the design of that emblematic building.

We have to take into account when modelling the Atomium:

- 102 meters high.
- Its spheres have 18 m diameter.
- The 20 tubes have 3.30 m diameter and 23-26 m length.

It has 3 structural brackets that hold the lateral spheres.

GOALS.

- Replicate a model at scale.
- Use of 2 or 3 basic shapes to build a complex design.
- Solve possible objects' rotation problems.







Reference model designed with Tinkercad.







Front view

Model Features.

This model has been designed using basic shapes, sphere, cylinder, tube and cube.

1) Cube creation.

3D Object	Size	Image
Sphere	18 mm Diameter	
Cylinder	3.30 mm Diameter x 26 mm high	







Sphere 18 mm Diameter	
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Now we duplicate the figure and move it 42 millimetres.



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We duplicate the figure again and move it 42 millimetres to create the cube.









4x Cylinder 3.30 mm Diameter x 26 mm high	
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Let's rotate the cube horizontally and forward 45°.

4x Cylinder	3.30 Diameter mm x 58 mm high	
2x Cylinder	3.30 mm Diameter x 58 mm high (Link spheres)	
1x Sphere	18 mm Diameter	
2x Cylinder	3.30 mm Diameter x 58 mm high (Link spheres)	

Now we align it and retouch it if necessary.

Once we have created the cube lets continue with the base.

2) Base

Cylinder	28 mm Diameter x 4 mm high	
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Empty tube	28 mm Diameter x 2.80 mm high	
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Finally, we have to create the structural brackets that hold the 3 spheres.

3) Brackets

Вох	3 mm wide x 3 mm long x 32 mm high (5º rotation)	
Вох	3 wide x 3 mm long x 32 mm high (5º rotation)	
Вох	10 wide x 3 mm long x 4 mm high	







Now we place the brackets under the 3 spheres, and we adjust them if necessary.

This is the result:

