

Tessellation is very common in our daily lives—from tiles to architecture and I could see it on my way to school every day. Seeing it all the time makes me curious about the reason why tessellation is so commonly used. That's why I chose it as the theme of my infographic.

Tessellation is covering a flat surface using one or more geometric shapes, with no overlaps or gaps. A regular tessellation using equilateral triangles could be usually seen as triangles are the strongest shape among all polygons. Any weight placed on it is evenly distributed on all 3 sides.

To check whether a polygon or more than 2 polygons are able to form tessellation, a formula proposed by Grünbau and Shephard could be used. For instance, equilateral triangles and squares could give rise to a semi-regular tessellation in a “33344” or “33434” pattern. It is really interesting to check and try to tessellate polygons by myself.

With a spatial tessellation design, the load distribution could be more reasonable in structures, and the damage of a single component would not lead to the collapse of the whole building.

Tessellation facilitates constructing the geometries by simply repeating regular or non-regular shapes, which gives designers the freedom to create more complex forms using a simple design approach. La Seine Musicale in Paris and the Bank of China Tower in Hong Kong are some examples of the use of tessellation.

Before doing this project, I had never realized that Mathematics is all around us. Mathematics in daily life differs from the one in textbooks. It is more understandable, which arouses my interests in Mathematics. In order to discover more daily Mathematics, I would pay attention to everything on my way, instead of just focusing on my mobile phone.