

The topic of the infographic is "When Bridges Meet Mathematics". It consists of three parts that explain how mathematics applies in the construction of bridges and how bridges can be stable and able to withstand strong forces.

Firstly, the parabola concept is involved in the design of a bridge. Parabolas are often found in architecture, especially in the cables of suspension bridges. Since the stresses on the cables as the bridge is suspended from the top of the towers are efficiently distributed along a parabola, the bridge can remain stable against the forces that act against it. To build a parabola, engineers should first find out the starting and ending points, then apply them in the quadratic equation: $f(x) = a(x-h)^2 + k$.

Secondly, the infographic is about geometry. In order to design a bridge with the best angles and make structures as strong as possible, engineers use geometry to find out the most suitable shape, size, position, etc. The most recognized geometric shape is a triangle since it provides strength and stability. When a force is applied to the vertex of a triangle, the two lateral sides squeeze together and the bottom side pulls apart. Each side experiences only one force at a time. Hence, the triangle does not break. Today, triangles are the most common shapes used in construction.

Thirdly, symmetry is also highly applied in the design of bridges. Bridges have reflectional symmetry so that each side of the bridge looks the same and thus equal force will be put on each side.

In conclusion, the above shows that several Mathematical concepts are used to construct a bridge so as to make it stable. It is believed that Mathematical concepts are not only used to build bridges but also other architectures. Thus, Mathematics apparently is a crucial partner in construction.