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3D MODELLING

3D modelling is a combination of mathematics, geometry and design. With special programs, you can create files that are instructions for 3D printers. The work of these programs can be compared to what a sculptor, architect or builderdoes - they demonstrate how an object will be created.

If the drawing is a two-dimensional image of the building, then the model is its three-dimensional layout, which provides a mathematical description of the surfaces of the object. In special programs, 3D designers create files that describe the state of points in space - such models involve many geometric shapes. Ultimately, polygons and curves make up a three-dimensional object.

There are two main types of 3D models: CAD models for automatic design systems and polygonal grids that define the shape and surface of an object. The CAD model can be represented as a set of actions to create an object - in this case, individual actions can be changed without overwriting the file completely.

A polygonal grid (or mesh) is an image of the surface of an object that really resembles a grid wrapped around it.

3D-modeling and 3D design differ mainly in the end result. In the case of 3D graphics, the result is a two-dimensional image, a rendering of a three-dimensional object, or an animation, such as a photograph of an object. On the other hand, in 3D modeling, the result is a technical file that can be used as an instruction to create a real object. Simply put, 3D modeling is used to describe the process of creating an object, while 3D rendering is used to obtain an image of the finished object.

3D modeling provides a whole host of new possibilities, allowing you to quickly and inexpensively prototype 3D objects. The result of working with 3D modeling can be: 3D models printed on a 3D printer, 2D images created using 3D rendering, 3D simulation of an object or building.

3D models are used in a variety of industries, from games, films and animation to industrial manufacturing, medicine, architecture and even geology.