# INTRODUCTION TO 3D MODELING

PAFSE: Partnerships for Science Education

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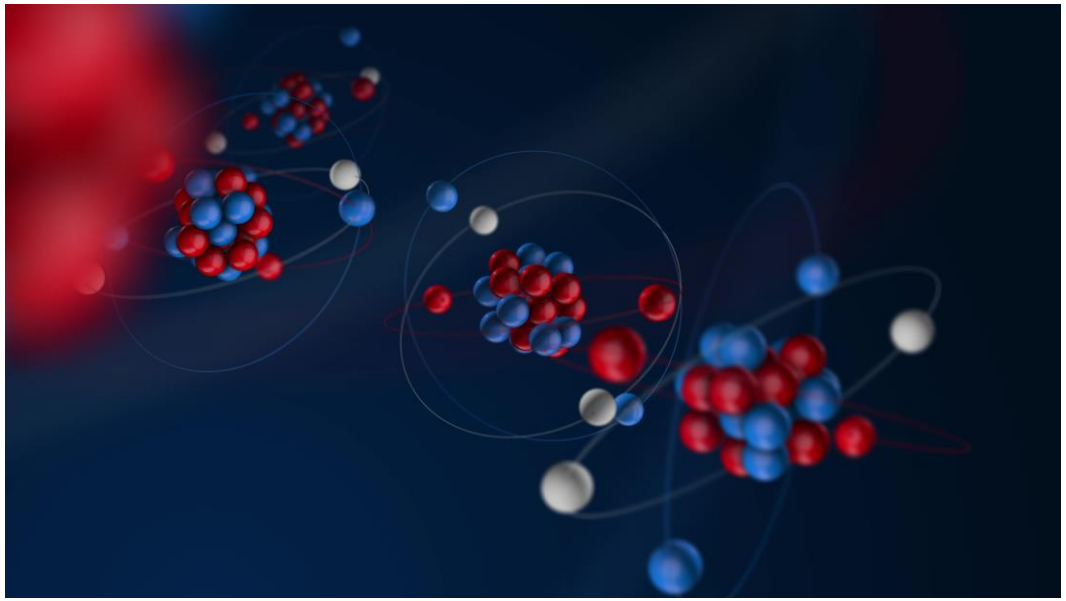
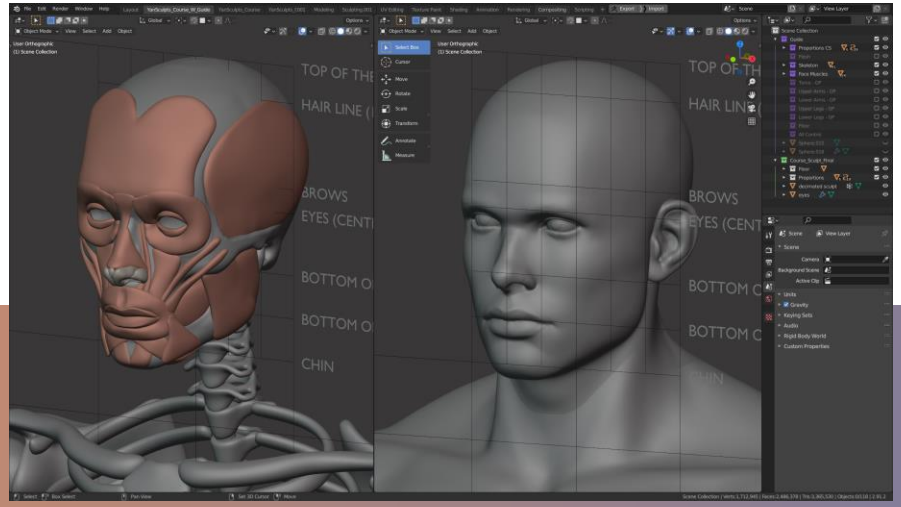
Topic: Open schooling and collaboration on science education

# WHAT IS 3D MODELING?



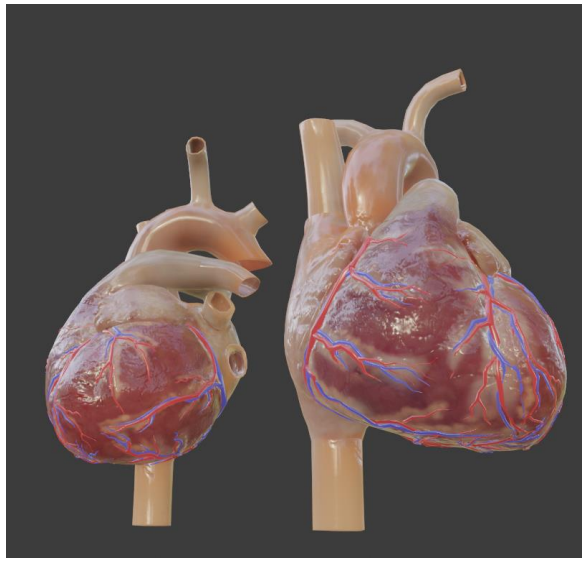
- This is an area that combines technical knowledge of drawing and sculpture, such as notions of anatomy, light and shadow, dimensions and shapes, with technological knowledge, including notions of modeling and editing software.
- 3D modeling is considered to be the process of developing characters, objects or scenarios in three dimensions. That is, they have depth in addition to height and width. For this development, specific techniques and software are used, such as 3DS Max, Maya, Blender, among others.



# WHAT IS 3D MODELING USED FOR?

- For example, in the health sector, 3D modeling can be used to develop prostheses and even organs, which can then be printed. In the automotive sector, engines, parts and cars are planned and designed using 3D computer models.

- But although it covers many areas, one of the most popular uses of 3D modeling is in arts and entertainment, present in the creation of games, audiovisual products and illustrations.

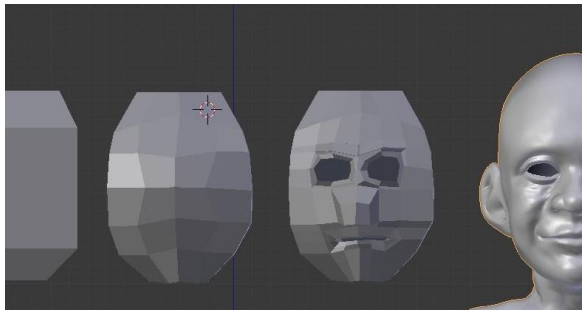


# WHAT ARE THE MAIN TYPES OF MODELING?

- Since 3D modeling has different purposes, the way it is developed can also vary. That's why we've listed some of the main types of modeling for you to know and understand the difference.

- *Box modeling*

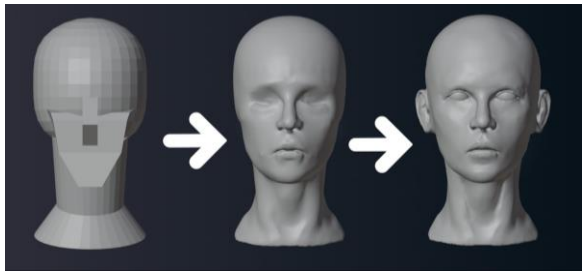
Box modeling is a type of modeling based on combining simple geometric shapes such as spheres, cubes, polygons and cylinders. This technique is usually used to create slightly simpler objects with fewer details.



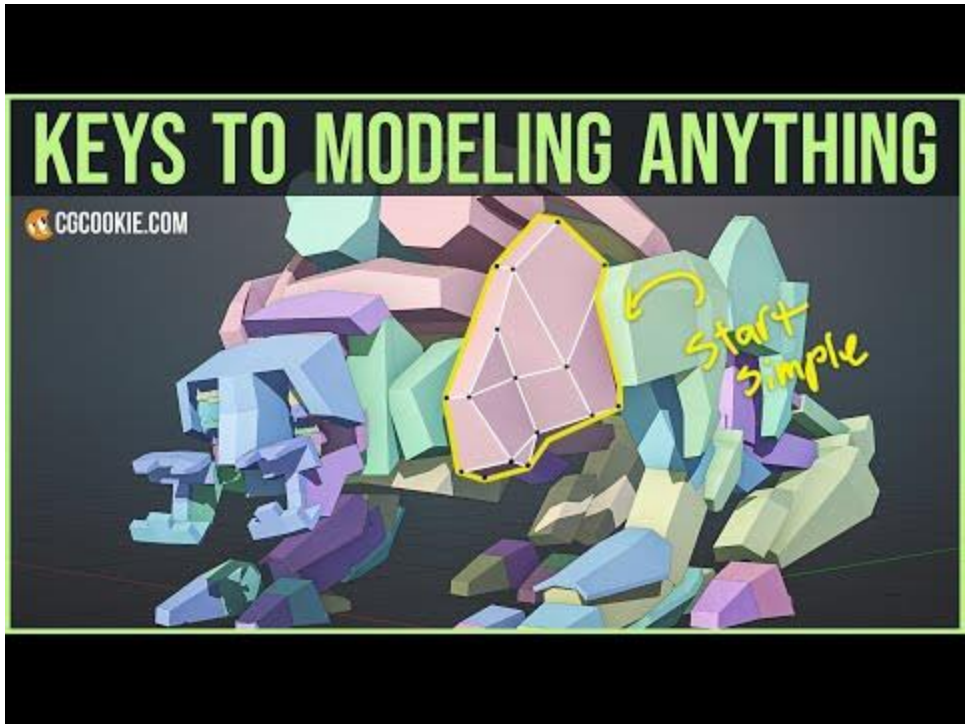
- *Digital Sculpture*

This type of modeling has a much larger number of polygons and some other shapes, which give the objects more detail and complexity. Because it has a mesh with a greater volume of polygons, this technique is also known as subdivision modeling.

This type of modeling is used in projects that require a greater amount of detail and even more realistic results, as a subdivided mesh facilitates fine detailing.



# KEY PRINCIPLES FOR 3D MODELING



# HOW CAN WE CONCEIVE THIS OBJECT IN 3D?

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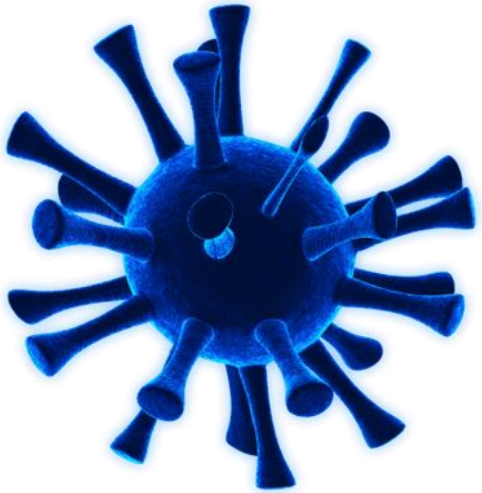
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