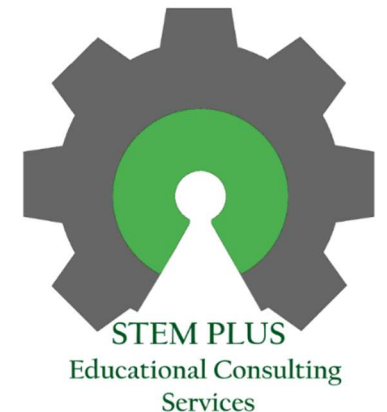


Teachers Guide for Learning and Teaching 3D Design Sample

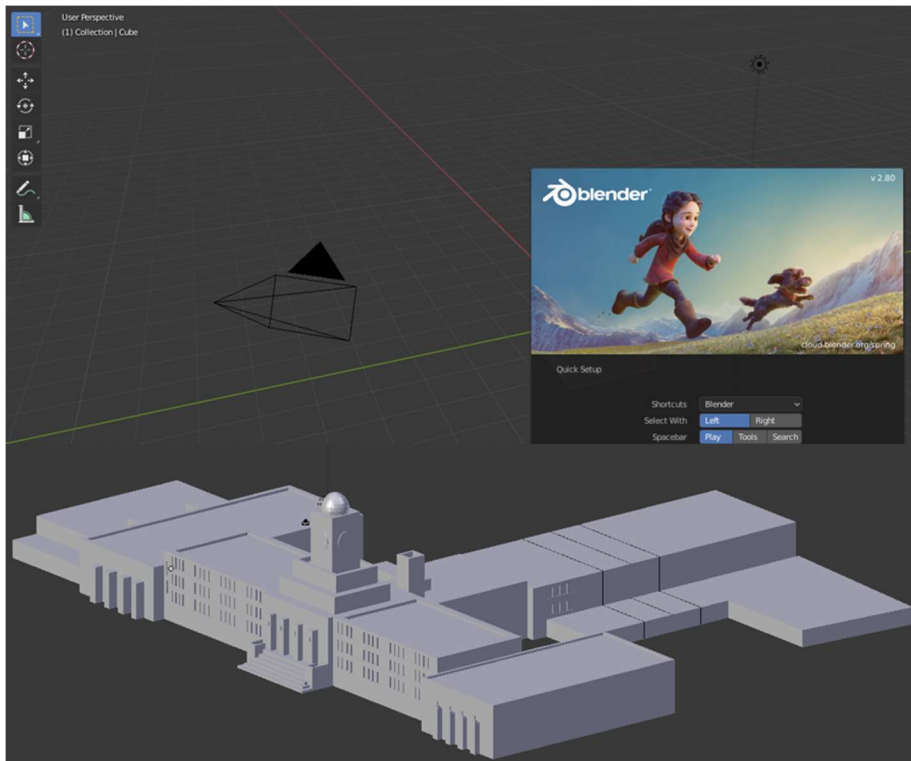


Robert De La Cruz
stemplusNY@gmail.com

Suggested Software

Blender is the free and open-source 3D creation suite. It supports the entirety of the 3D pipeline—modeling, rigging, animation, simulation, rendering, compositing and motion tracking, video editing and 2D animation pipeline.

blender.org



Sample Student Model of Valley Stream Central High School

Blender is a robust software that runs in any common operating system and uses minimal resources to render 3D models. The software can be installed remotely by a network administrator and students can download it at home.

There are a lot of online tutorials and YouTube channels dedicated to blender that are free to use and safe for schools. In addition, ***STEM Plus provides consulting services and training for teachers looking to enhance their knowledge of 3D design and how to bring it to the classroom.***

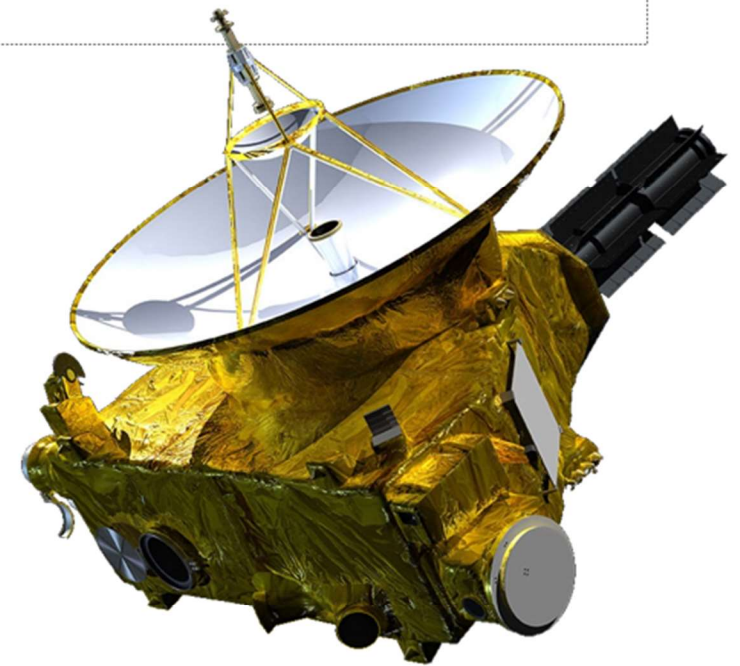
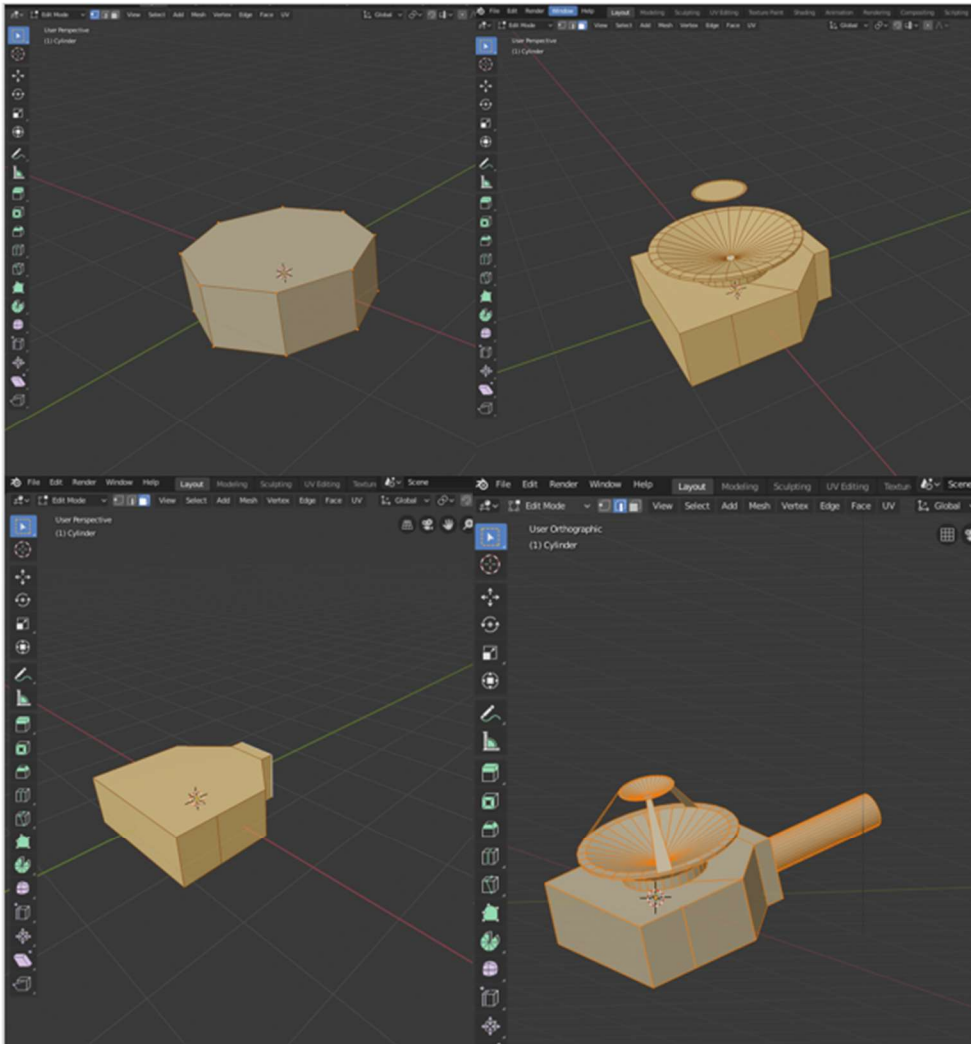
Suggested Hardware

Most 3D printers are suitable for schools. To the best of my knowledge the most common 3D printers used in academia are made by Makerbot and Lulzbot.



Sample tutorial/PD session

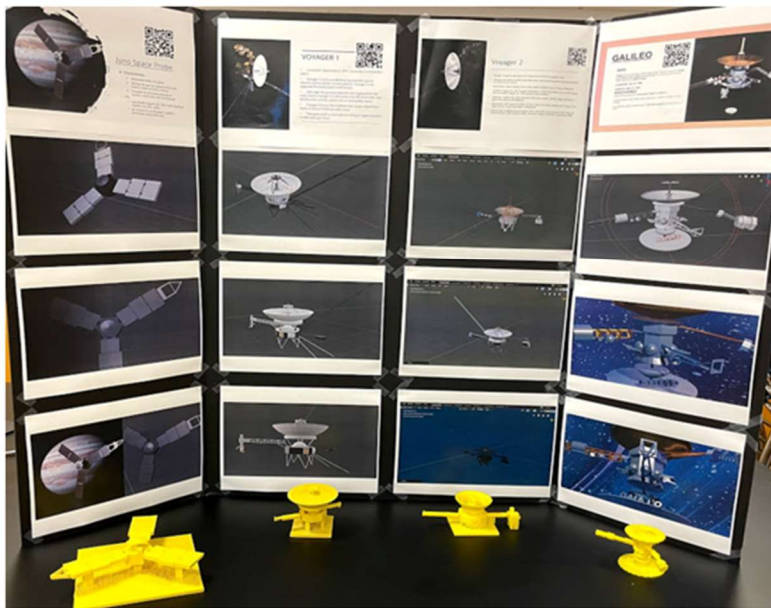
This tutorial shows teachers and students the basic commands they need to design a NASA space probe.



Sample Project Based Learning Activity

- Students are asked to select from a list of 40 significant Missions to Space
- They are asked to research and create a presentation highlighting the objective, instrumentation and discoveries of the probe or satellite
- Students learn to use Computer Assisted Design CAD Software to create a photorealistic model of their chosen probe. Their models are 3D printed
- This PBL activity takes in average half a semester to be completed

Sample Student Work



Please scan the QR Code to see additional models designed by my students.



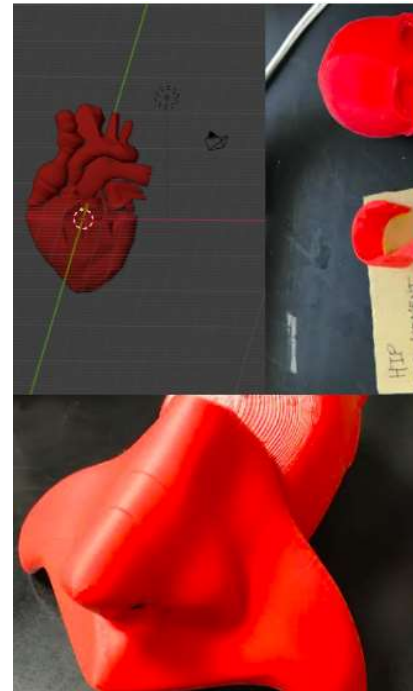
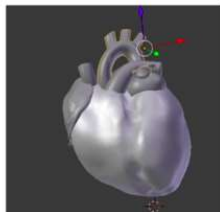
BIOMEDICAL ENGINEERING PROJECT

• Project Description:

Students will use their knowledge of human anatomy to create a 3d model (*blender*) of a human organ or prosthetic. Using *prezi*, students will present their findings to the class focusing on how 3d printing has improve the field of medicine.

SAMPLE STUDENT WORK

-Hailey
(6th grader, 2015)
Seed learning Center
Hartsdale, NY



Recent Publication

VALLEY STREAM CENTRAL HIGH SCHOOL DISTRICT
VALLEY STREAM, NEW YORK

Publication in the school's website June 2021


DISTRICT | BOARD OF EDUCATION | SCHOOLS | PARENTS/STUDENTS | PROGRAMS

Project Based Learning During the Pandemic



STEM Class Design and Create 3-D Space Probes

Central High School students in Mr. Robert De La Cruz's STEM class became experts in astronomy while working on their three-dimensional printing astronomy project. Both in-person and remote students designed and created realistic models of space probes.

The inspiration was to model the most significant missions to space in the history of space exploration. Students selected from a list of 40 significant missions to space and then created a presentation highlighting the objective, instrumentation and discoveries of the probe or satellite. In addition, they also used Computer Assisted Design software to create a model of their chosen probe and had their models printed in 3D. Their presentations and models are now on display in the school's library.

 Prezi we wanted to show that it is possible to learn a high-level skill and conduct research, while adjusting to the challenges of this year," Mr. De La Cruz said. "The class exceeded all expectations."

Scan the QR-codes to see some of my students' work



STEM Plus provides consulting services and training for teachers looking to enhance their knowledge of 3D design and how to bring it to the classroom.



Contact us at stemplusNY@gmail.com