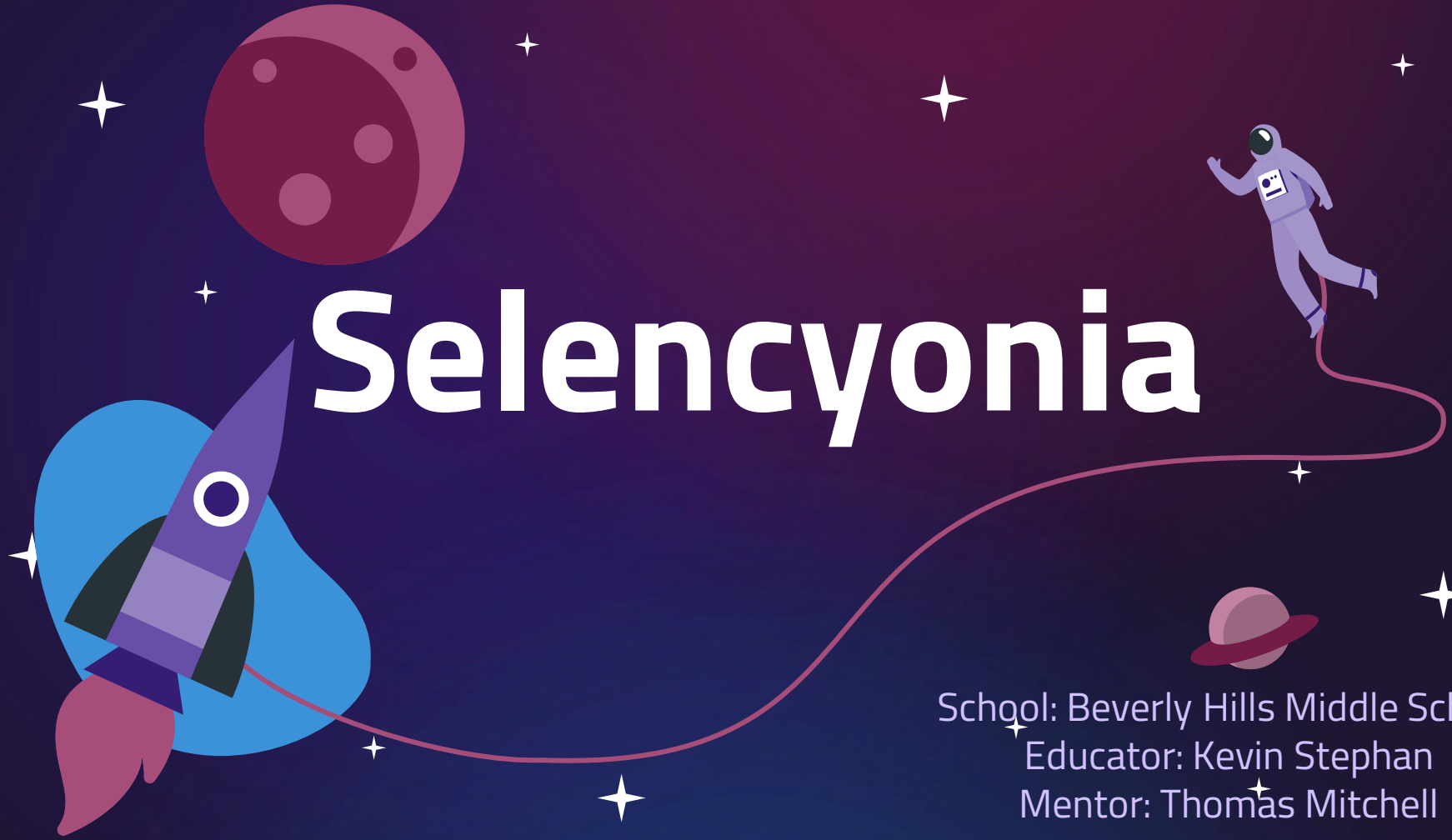
Selencyonia



School: Beverly Hills Middle School
Educator: Kevin Stephan
Mentor: Thomas Mitchell

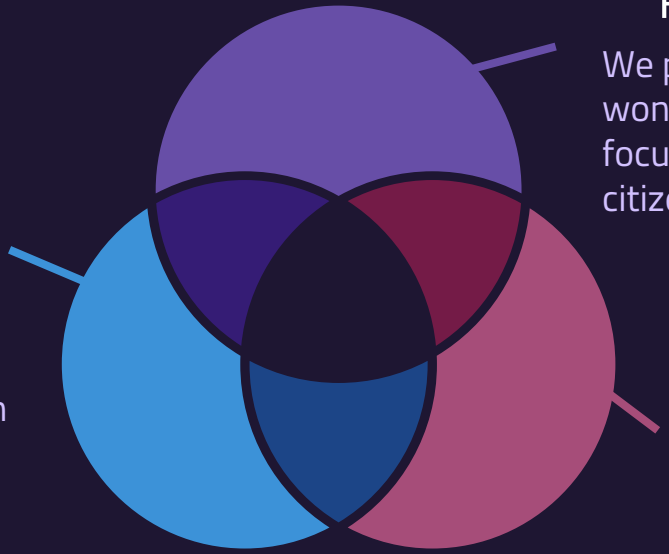
Background

One hundred years after the first successful rocket-powered, full-sized aircraft set out on its voyage, the lunar city of Selencyonia was established upon the northern rim of Peary's crater in 2028. As years passed, the unusually attractive city became the first moon settlement ever created. The name, Selencyonia, is derived from a combination of two words: "Selene", the greek personification of the moon as a goddess, and "halcyon", a word for denoting a bygone period in time of ideal prosperity.

Diversity Is What Makes Us Unique

Engineering

Our teams of experts have come together from civil, AI, mechanical, environmental, structural, electrical, and logistical engineering fields to help make Selencyonia a shining achievement in the course of human history



Population

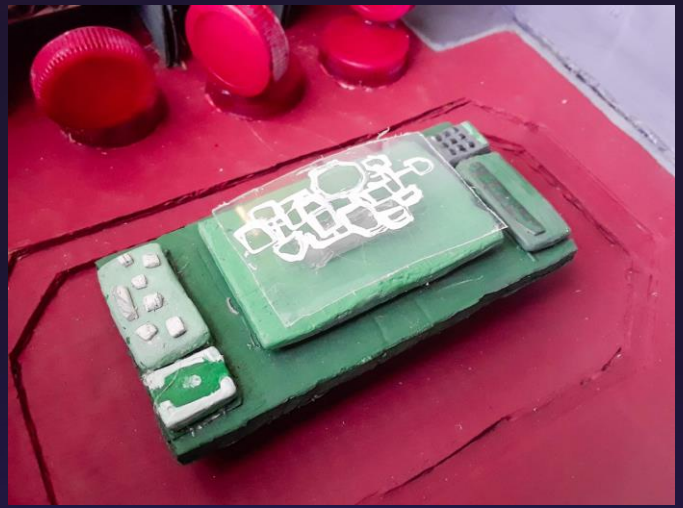
We pride ourselves in having a wonderfully diverse community that is focused on empathy, social justice, and citizenship

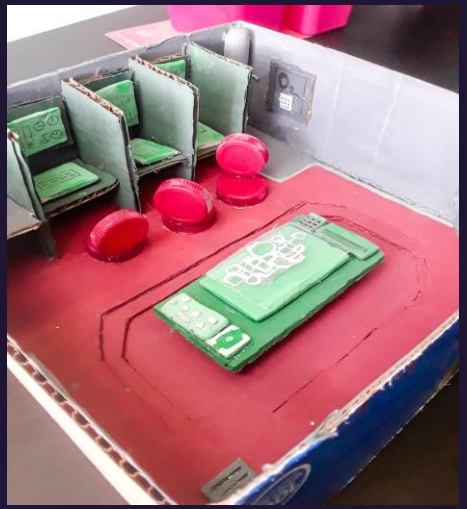
Opportunities

Everyone who has made the decision to live in our city is making a commitment to improving Selencyonia, and that kindness and hard work is equally given back to the residents.

Communications

Communication with Earth is analogous to communicating overseas as there will be satellites orbiting the moon that take data from the moon and send it directly to Earth.



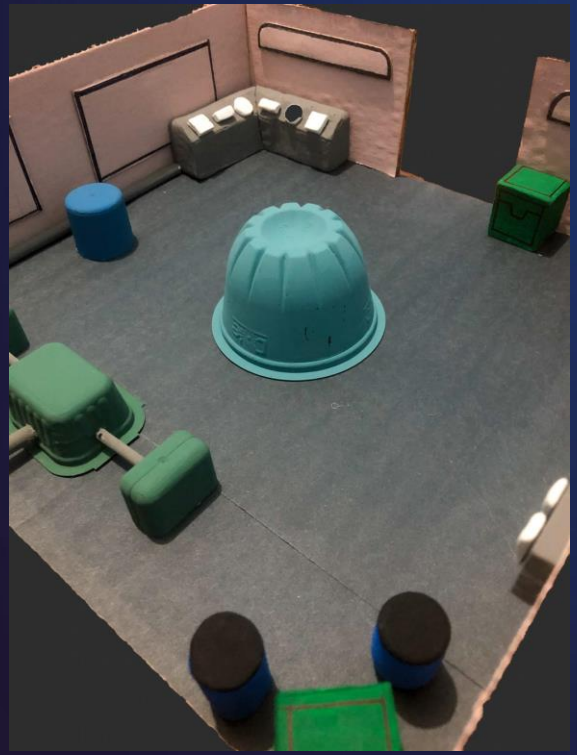


Education

Education focuses tightly on key concepts where students can master the basics from which to build and to teach them in depth at an early age. The Selencyonic Educational Society (SES) incorporates fundamental, innovative ideas into schools, making sure that each and every student meets their expectations.

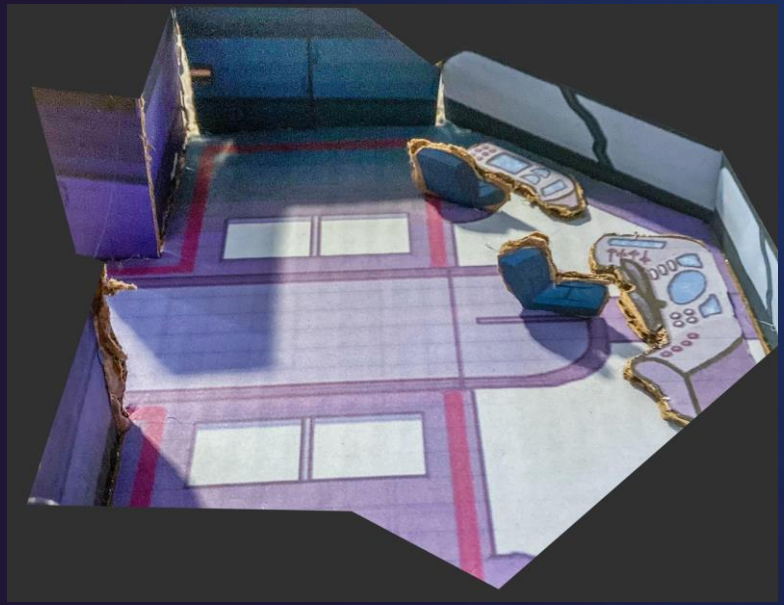
Defense System

Outside the city lies a radar station which detects any hazardous asteroids en route. The likelihood of a direct asteroid impact to the city is miniscule, but since an impact did create Peary's crater, the defense team is ready for any circumstances. The first line of defense involves sending out an automated, homing rocket to use pure kinetic force to shift the asteroid off of its course. If this doesn't work, a nuclear rocket is sent out with calculation to destroy the asteroid before impact. Alternatively, the defense team may use nuclear rockets designed to destroy the asteroid or fracture it into smaller pieces the dome can withstand. Lastly, evacuation plans are established and hopefully don't have to be put into action.



Transportation

Transportation systems within Selencyonia consist of electrical vehicles. The electric cars use an advanced LiDAR (Light Detection and Ranging) system which drastically lowers accidents and allows for vehicles to be fully automated. There are also sidewalks and biking lanes for those who have that preference.

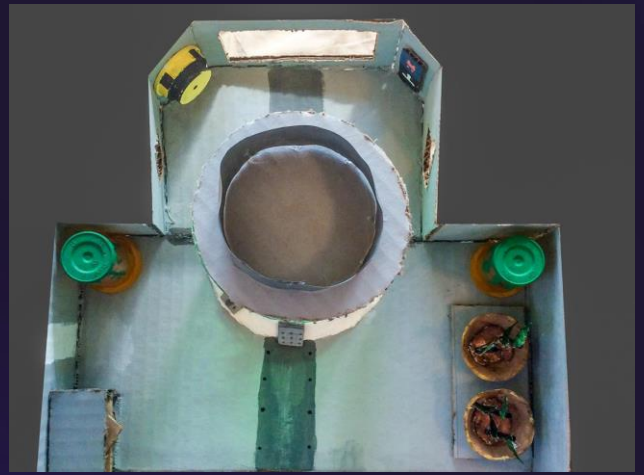


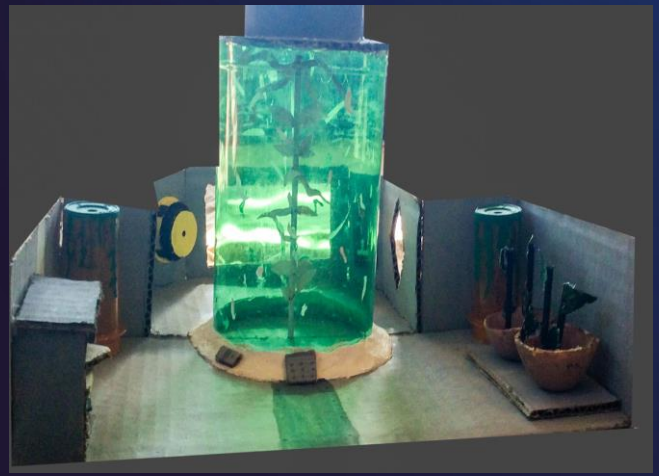
Health Care System

Selencyonia offers a multitude of city services such as accessible and free healthcare services, education, fire prevention, and other services. Healthcare facilities found widespread within the city are known for their impeccable medical innovations in diagnosis and stewardship.

Water and Agriculture

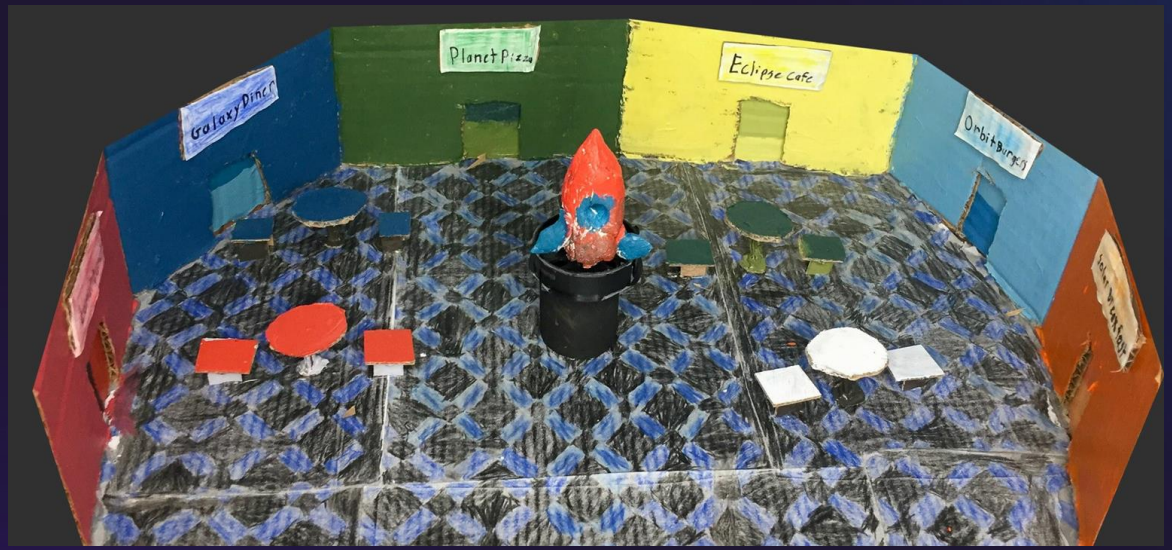
Nutrition in Selencyonia is sourced from a host of farms stationed in regions that have plentiful sunlight to enrich agricultural growth. Any surplus food is stored at offsite storages in Peary's crater. Since there's no sunlight in Peary's crater, there will be little need for refrigeration. Furthermore, the soil is partially composed of human feces but also of nitrogen, oxygen, and regolith. Water used to grow vegetation is recycled, although some of the water obtained is from polar ice caps found not far away from Peary's crater. Water is transferred throughout the city with advanced pipe systems and is thoroughly filtered before given to citizens. The plumbing system collects the waste generated by citizens and takes it to waste processing facilities where waste is recycled to be fertilizer or waste water is meticulously extracted, filtered, and sent back for use.





Entertainment and Recreation

People enjoy their free time on the moon as much as our Earthling friends do, which means that Selencyonia offers a multitude of entertainment and leisure options for citizens and tourists. Restaurants, theaters, parks, playgrounds, art galleries, and so much more are available to explore and enjoy!



Energy Sources

The entire city is solely powered by an array of 45,000 kilometers of solar panels. These solar panels are the most efficient energy-harvesting source available. They're built using natural moon resources, such as silicon. These solar panels are stationed at strategic locations, allowing them to gather near-constant sunlight for energy. Any surplus energy is transferred into large, secured batteries to be stored until further notice. In the case of any mishaps concerning the solar panels, there becomes the use of an emergency, off-site, nuclear power plant powered by helium-3, conveniently found on the moon.

Turning Lunar Materials Into Vital Resources

CAPTURE
Mining of the lunar regolith for essential materials

STEP 1

STEP 2

EXTRACT
Using the process of molten salt electrolysis

REFINE
SIlicon is produced for use in a multitude of vital city systems

STEP 3

STEP 4

BI-PRODUCT
Oxygen for the city is an essential bi-product of the process

Engineers Involved

Civil engineers were at the forefront of engineers building Selencyonia. They cooperated with AI engineers for this project, considering the many tasks that had to be automated for the city to be built in a short timeframe. Civil engineers were the ones who designed buildings and the dome, while AI engineers input software that was able to simplify machines to build massive structures in microgravity.