



2020-2021 City Model Slideshow

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Future City Team Name: **Selene City**

Deliverable Details

- This slideshow is your chance to present your model. Whether your team created a single model or multiple segments, here is where you show off the future city you designed to the judges.
- Choose photos of the various segment(s) that best show the requested content.
- Do not change the size of text boxes in this template. All written text must fit within the boxes and *cannot* be smaller than size 14 in Calibri (or equivalent) font.
- When finished, save the slideshow as a PDF and upload to the Online Portal at FutureCity.org.

Section I
CITY DESIGN

Selene City-Residential Zone



All our residential buildings have photochromic windows that will slowly tint throughout the day and solar panels. This gives us the benefit of using sunlight as a source of free energy, while not sacrificing the sleep schedules of our citizens.

Our buildings are dome shaped for easy construction and repair. The walls are made of Regolith which also helps to shield our citizens from harmful radiation.

Tunnels connect the buildings for easy accessibility to all our city amenities.

Commercial Zone



Here in Selene City, we use the low gravity as an advantage for entertainment purposes. We have bounce houses and parkour gyms, as well as weekly sport tournaments.

We offer tours, so residents can explore the moon and understand their home better.

We also have a shopping center where citizens can buy clothing, household items, or other appliances.

Our commercial zone is connected to our residential zone by our high speed monorail.

Industrial Zone



Selene City has many industries that help the city thrive.

It has oxygen reactors that provide breathable oxygen for the residents in Selene City.

Selene City also has clean energy from solar panels and biodiesel fuels.

Selene city's industries manufacture nutritional bars which provide food for its residents.

The Industrial zone is separated from the main city to help keep our city clean.

All of Selene City's industries depend greatly on STEM.

Constant research helps the city grow in science, technology, and engineering which makes our city change for the better.

Infrastructure Example 1 - Solar Energy



Solar panels

Selene city's main power source is solar energy. We thought that solar energy was the best option because we wanted an energy efficient power source. Since there is no wind on the moon and water on the moon is frozen, this was the most logical solution. Our windows and glass domes are made up of photochromic glass with embedded solar panels. The energy is stored and distributed throughout our city.

Infrastructure Example 2 - Greenhouse



Greenhouse (glass dome)

One of the greatest challenges of living on the Moon is producing food through agriculture and providing our citizens with a healthy diet.

Fruit, nuts, legumes, and vegetables are grown in our greenhouse dome.

The greenhouse dome is specially designed by our engineers, scientists and architects to keep our city's produce fresh. A innovative self irrigation system helps are plants and trees grow strong .

City Services Example 1 - Healthcare



Healthcare

Our healthcare system consists of community centers with gyms and classes along with hospitals and clinics with leading edge technology and physicians.

To maintain a healthy body, citizens are advised to exercise daily with high intensity training, and eat foods high in protein and other nutrients. In our healthcare system, all citizens regardless of their conditions are insured.

City Services Example 2

- Government and Education

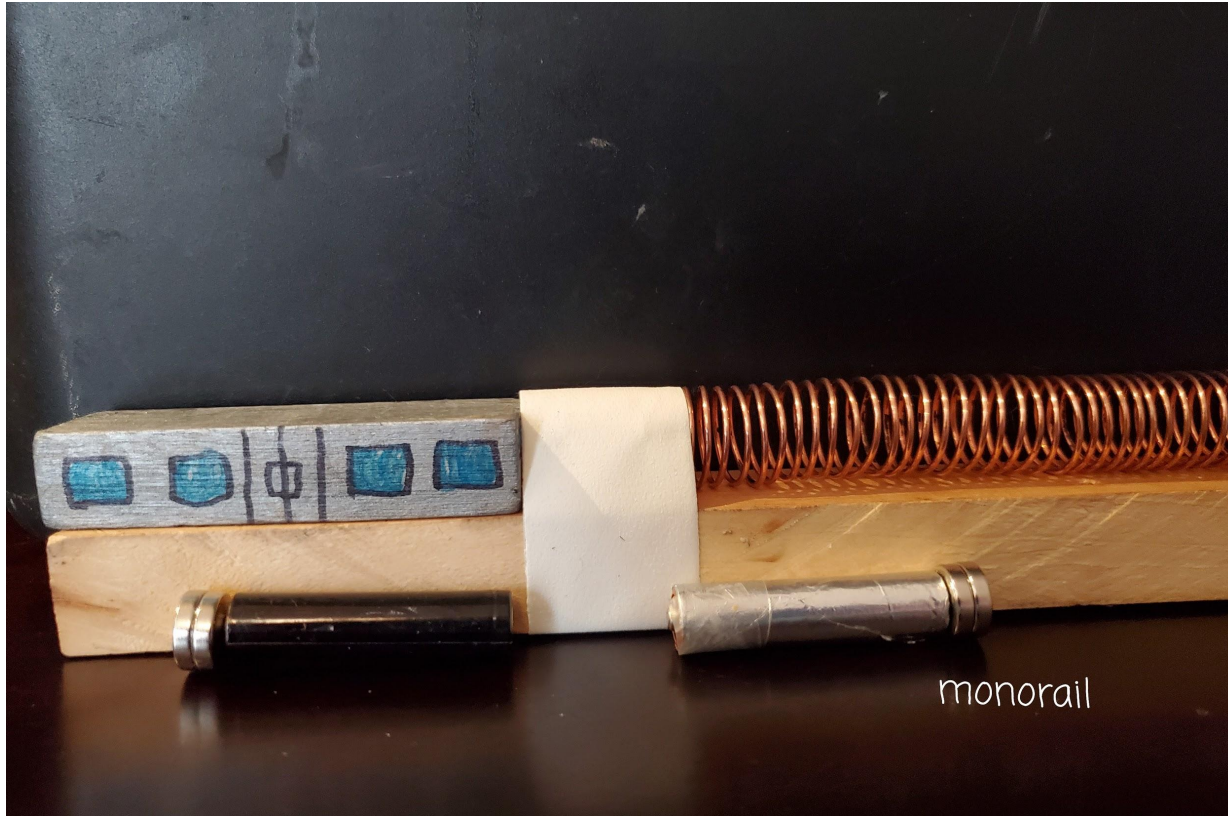


Government and Education

Selene City has a “Titan Government”. The Titan government system has three different tiers. Policies and decisions are proposed at the lower level and passed up to higher levels for approval.

To grow as a city, our education system needs a strong STEM-based curriculum. Our schools focus on sciences such as astrobiology, physics, botany, nutrition, and chemistry. We strive to educate students who can solve problems and create impactful discoveries in science while using resources accessible on the Moon.

Transportation Example 1-Monorail



Monorail Train

The main mode of transportation in Selene City is the Monorail train. It is a clean, fast way to travel throughout our city. The trains connect our residential and commercial zones and run in a network of above ground and underground tunnels.

The monorails are a great way to tour our city and they are fun to ride!

Transportation Example 2- Biodiesel fueled Vehicles



Hybrid cars and bikes

Energy efficient ways to travel include bicycles and cars that run on algae biodiesel and electricity, as to not be completely dependent on solar energy.

Living on the Moon - Water

Example 1



Water - A Vital Resource

One of Selene City's main resources on the Moon is water. Water was found on the Moon in giant craters near the south pole. Inside the craters are large deposits of ice. Selene City mines the ice, melts it back down to water, and purifies it. When it turns into clean water it can be used in food for the residents and for oxygen by separating the hydrogen from the oxygen. Gray water or dirty water is used as irrigation for the plants in the greenhouse. The dirty water is filtered again and reused to help the city grow biologically and physically by giving the residents water to live.

Living on the Moon - Water

Example 2 -



“Water is
the driving force
of all nature”

Water also provides crucial jobs for the residents of Selene City. Some of the jobs Selene city has are mining our great ice lakes for water, filtration and distribution centers, and creating oxygen for the city.

Our teams of scientists and engineers are continuously researching new ways to acquire water and oxygen. If Selene City ever runs out of water, they can combine the oxygen from the plants and hydrogen from the Moon and create new water for the city.

Living on the Moon -Regolith



Regolith

More than just Moon Dust

The Moon's surface is covered by a layer of unconsolidated debris called regolith, which is similar to the Earth's soil. Our citizens need a place to live. Regolith can be used to create a wide range of structures; roads, sidewalks, and other infrastructure; effectively becoming a widely available and affordable substitute for concrete.

Not only have our civil engineers used regolith to construct our buildings, but also to shield our citizens from radiation, therefore, literally embedding efficiency into our city's walls.

Living on the Moon -Regolith



Some innovative ways Selene City uses Regolith

Our scientists and engineers have found many benefits of the Moon's abundant resource of regolith.

They have discovered ways to extract water and oxygen from regolith as well as minerals necessary to maintain healthy diets.

Section II

BUILD IT: QUALITY, SCALE, AND MATERIALS

Innovative Material & Use Example 1

The Moon Surface



This photo shows the Moon's surface.

We created the surface by crumbling recycled newspaper onto old cabinet doors. We then used strips of newspaper coated in glue to smooth the surface, like paper mache. We added reused aluminum foil to create a more mountainous surface with moon craters. The surface was then painted. Crushed chalk was sprinkled on top to give it a more textured appearance. The chalk was also used for our lunar regolith material. In addition, we used a puddle of melted hot glue to represent our crater ice lake.

Innovative Material & Use Example 2

THE GREENHOUSE

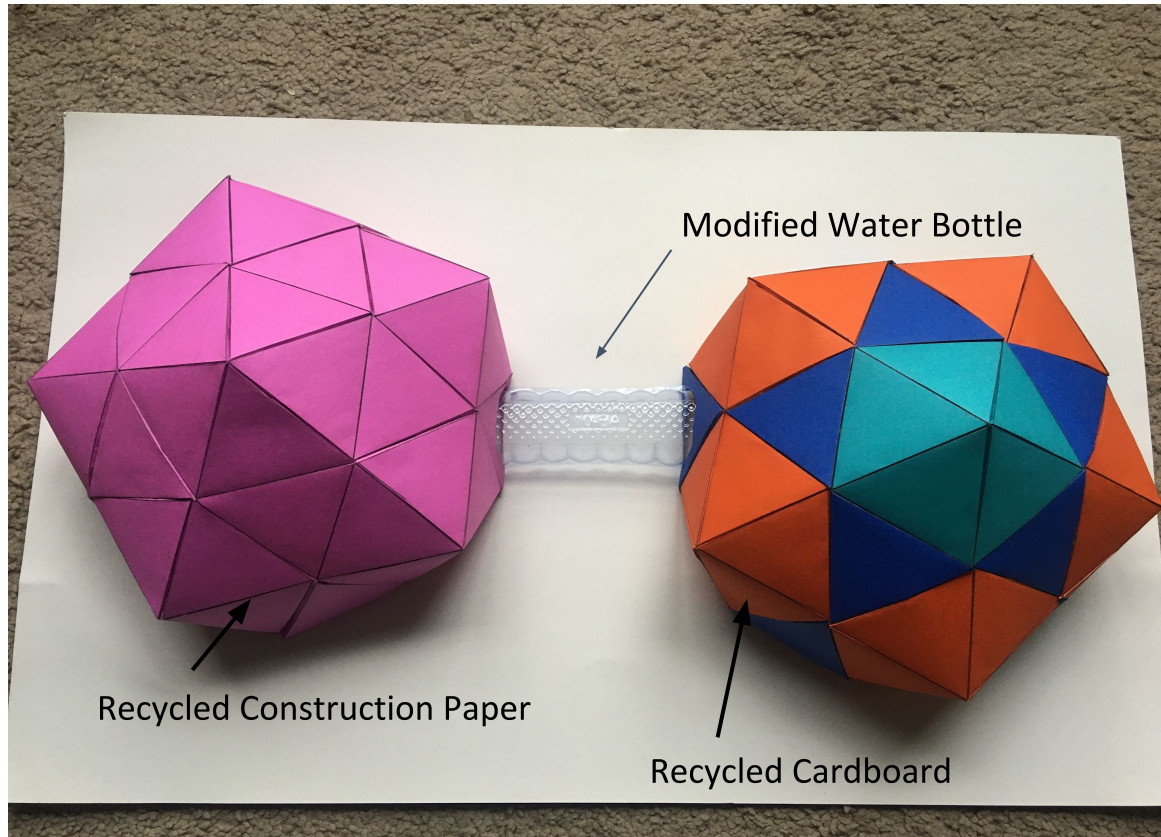


Our Greenhouse is made up of a disposable plastic bowl, an old plastic christmas wreath, and discarded pencils.

The pencils were cut to fit our scale and represents our tree trunks. The old wreath branches were cut and twisted to be our tree tops. Crushed chalk was added as soil. Glue and paint became our stream used to irrigate our garden. The bowl became our greenhouse which encapsulated our produce haven.

Innovative Material & Use Example 3

Constructed Dome



The DOME apartment complex

Supplies: Recycled construction paper, recycled cardboard, Modified water bottle, and glue.

Description: Create triangles out of recycled cardboard and construction paper. Each side is 6-cm and we made forty triangles for each dome. We drew parallel lines to each side to make flaps that connect the triangles. We then joined five triangles to make a pentagon and we made six pentagons. Next we connected two pentagons with a triangle between them. Finally, we added the modified water bottle to connect the domes together.

Example of Scale



Scale used in model:

1 inch = 17 feet

(This scale was based on an existing Glass dome in Milwaukee)

Structure 1

What type of structure is this?:

Greenhouse Dome

What size is the structure on the model?: The Dome is 5" tall; 10" diameter.

What size would this structure be in real life?: The Dome would be 85' tall and 170' diameter.

Structure 2

What type of structure is this?:

Regolith Concrete Tower

What size is the structure on the model?: 4" tall, 2 to 2.5" wide

What size would this structure be in real life?: 68' tall, 34 to 42.5' wide

Moving Part

URL link to team's moving part video:

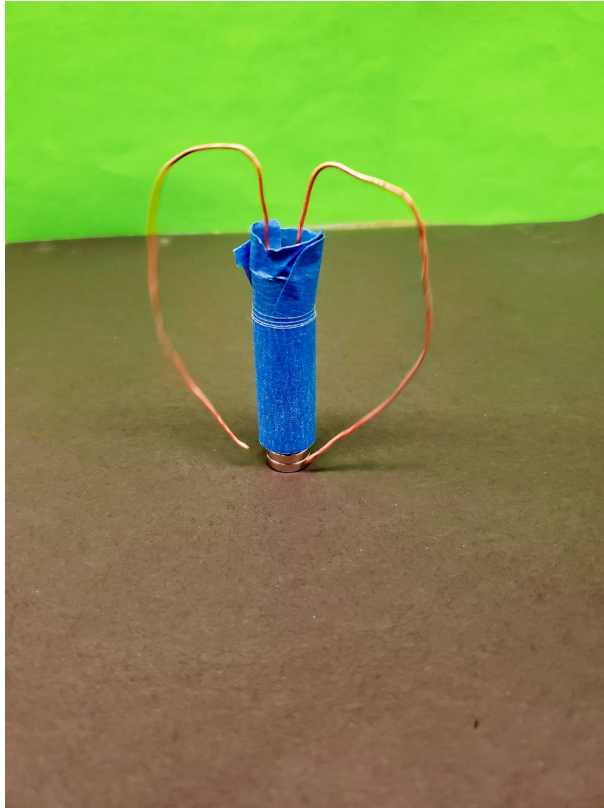
The Breathing Machine and Monorail train

https://youtu.be/T_fDMgkPFPw

Section III

JUDGE ASSESSMENT OF MODEL

Futuristic Technology Example 1 - “The Breathing Machine”



Breath Easy in Selene City with The Breathing Machine

Our chemists and nuclear engineers have found a way to produce hydrogen for fuel and oxygen for life from water by using a semiconductor material and sunlight.

Our biomedical engineers have created a Breathing Machine that controls Selene City's atmosphere. Our citizens can breathe easy knowing that our engineers are hard at work designing and discovering new ways to live a safe life on the Moon.

Futuristic Technology Example 2- Nutritional Bars



Get a Healthy diet with
Selene City Nutrition Bars

Since it is hard to keep protein on the moon and maintain a healthy diet, our food scientists have formulated multi-nutrient bars that have all the nutrients, proteins, and vitamins that the human body needs to live on the Moon. These bars come in many fun flavors like hot chocolate and ice cream sundae!