2021-2022 City Model Slideshow

School/Organization: **Springton Lake Middle School (Rose Tree Media School District)**

Educator Name: **Katherine Malenich (Video), Kevin Reilly (Model)**

Future City Team Name: **Ambobay**

Delete all PURPLE text before submitting the slideshow for judging. Keep text that is black.

Deliverable Details/Requirements

- 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. Where noted, you can put one (1) or two (2) photographs of your team's work. The photos can take up as much space on the slide as you like, as long as they do not cover the slide title (upper left) or the text block descriptions on the right of the slide. More than two photographs are not permitted per slide. Collage images with more than two photos are not permitted.

- 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 Educator Dashboard at FutureCity.org.

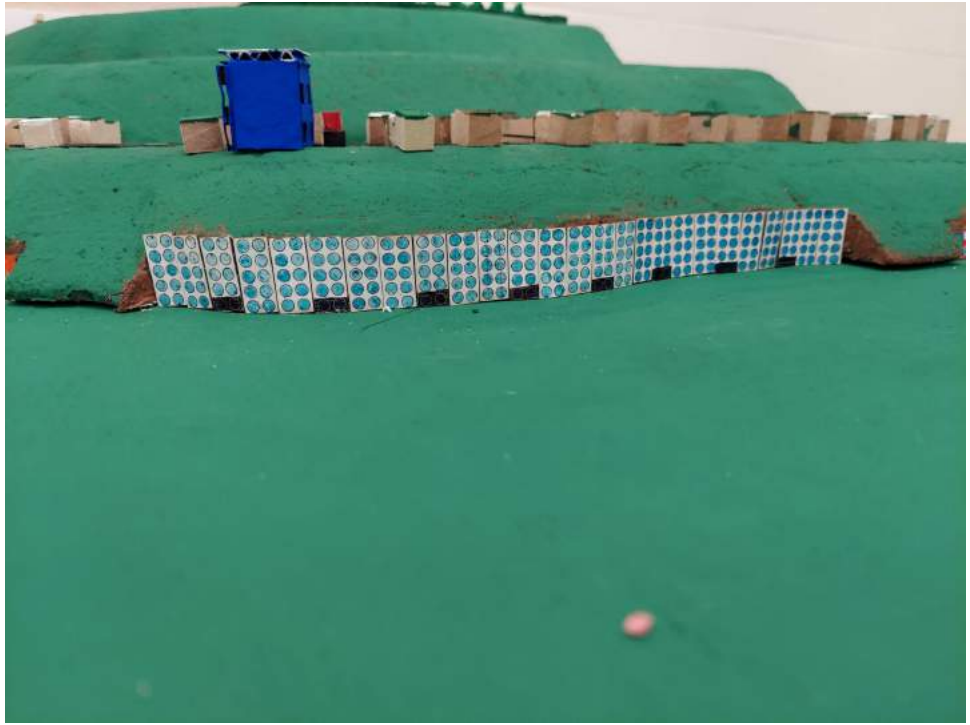
- Review the 2021-2022 Program Handbook for a full list of rules and requirements.

Section I

CITY DESIGN

The city of Ambombay is a costal city with a population of 4,000. It was designed to not affect the environment and produce no waste. The city is a total of 2x2 miles and has a rich shipping based economy

Residential Zone



What is important for the judges to know about your residential zone?:

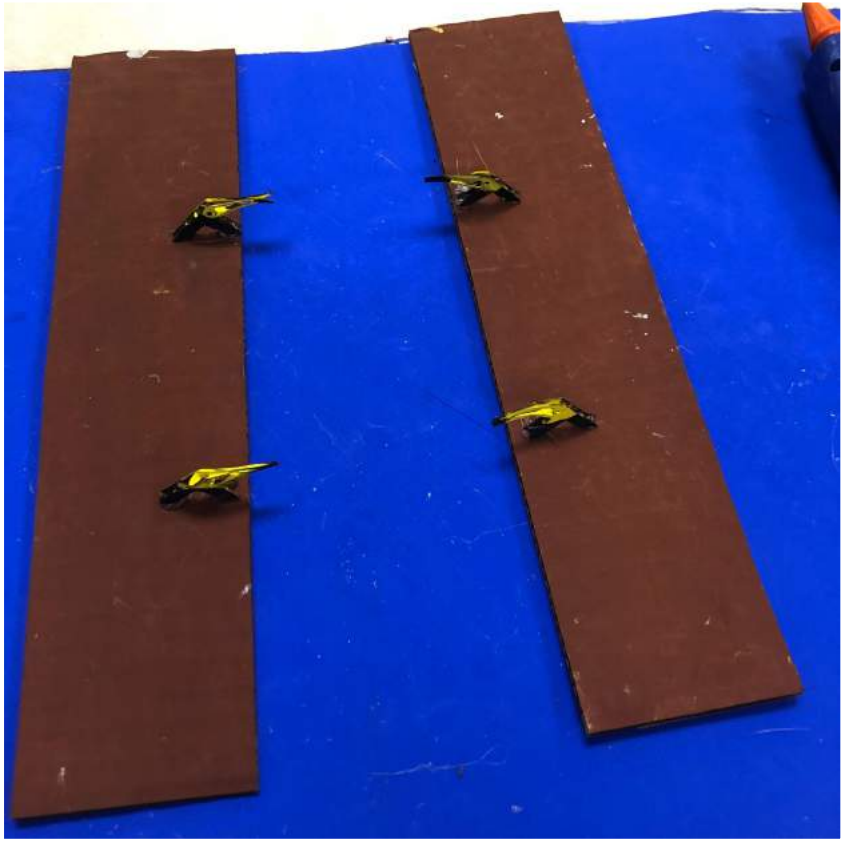
There are two residential zones. The apartments, and the houses on the mountain. The houses on the mountain have green and cool roofs. The green roofs have plants on top of them which absorb heat and make oxygen. The green roofs reduce energy used for climate control by 30%-50%. The cool roofs are white and also repel heat. They both look appealing. The apartments are IN the mountain, and this is for geothermal factors. The geothermal factor reduces heat by 45-65 percent and keeps the base temperature at 68°F.

Commercial Zone

What is important for the judges to know about your commercial zone?:

The cities main commercial stores are in the face of the mountain near the apartments. They are in the mountain so they can be next to the apartments and have a geothermal heating system. This is also for convenience for people living in the apartments. They have the same positive geothermal effects as the apartments.

Industrial Zone



What is important for the judges to know about your industrial zone?:

At the docks, we get paid to take other city's plastic. We use the plastic to combine it with sand at the shores to make concrete. Then we sell that concrete to make money. This is a big part of Ambobay's economy.

Infrastructure Example 1

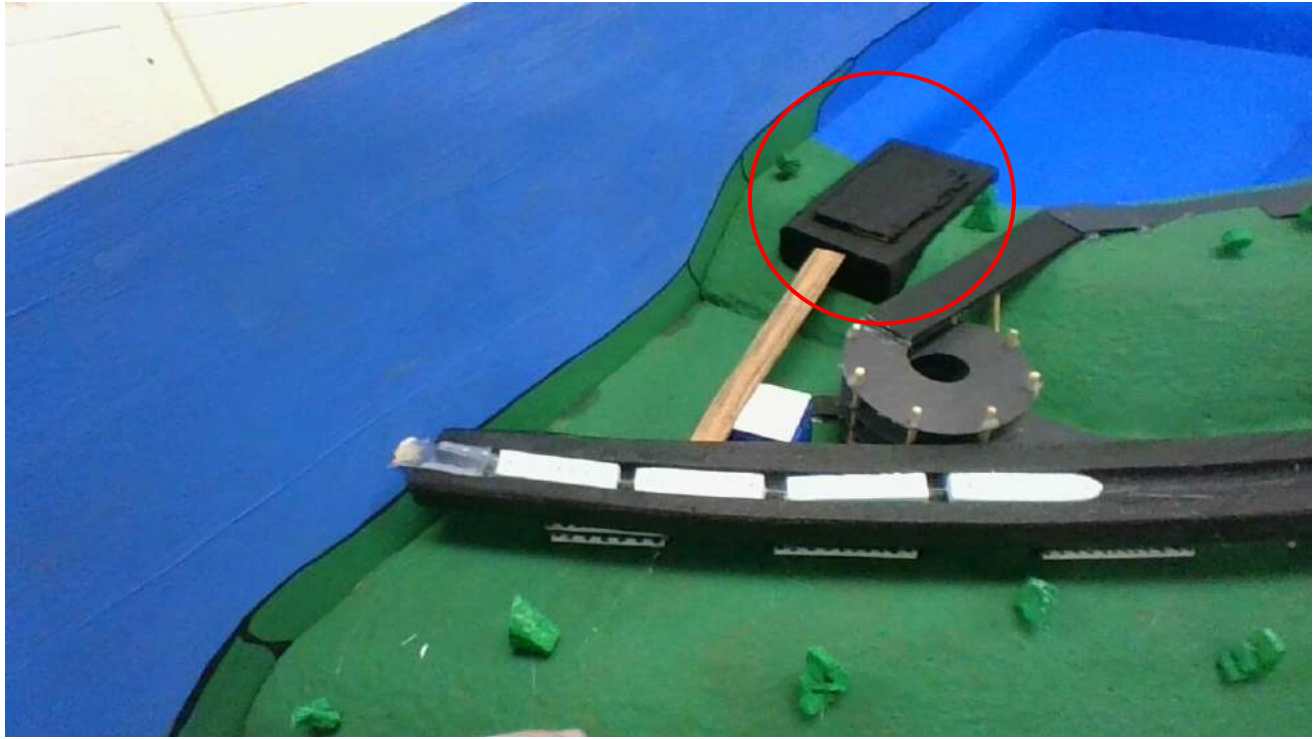
What type(s) of infrastructure are shown here (water, power, utilities, etc.)?:

Roads

How are these related to the realities/challenges of a Waste-Free City?:

In order for our electric scooters to drive efficiently, we need a road network. This road network is made by making bricks out of recycled materials. Mostly, It is just made buy compacting recycles stone and plastic into a durable surface.

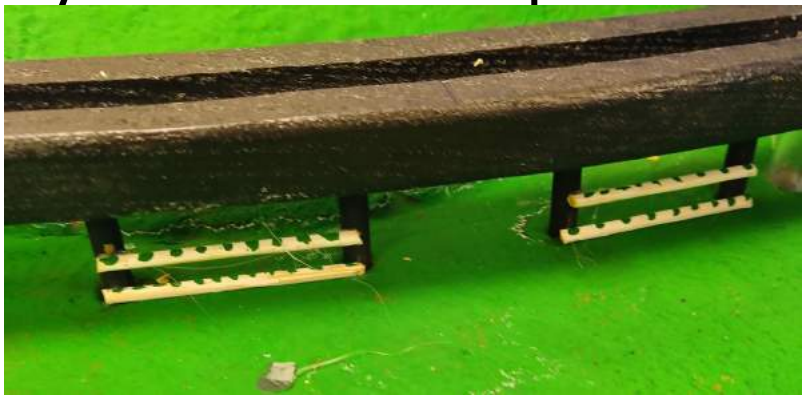
Infrastructure Example 2



What type(s) of infrastructure are shown here?:
This piece of infrastructure is the water turbine used in our hydroelectric dams

How are these related to the realities/challenges of a Waste-Free City?:
It‘s purpose is to create clean energy for the power grid of the city. The dam will create about 100 MW each year. It should be able to power all of the houses and many more buildings. The dam is related to a waste free city because if it had no prior ecosystem to harm it is perfectly eco friendly. It also provides the water for the water train.

City Services Example 1

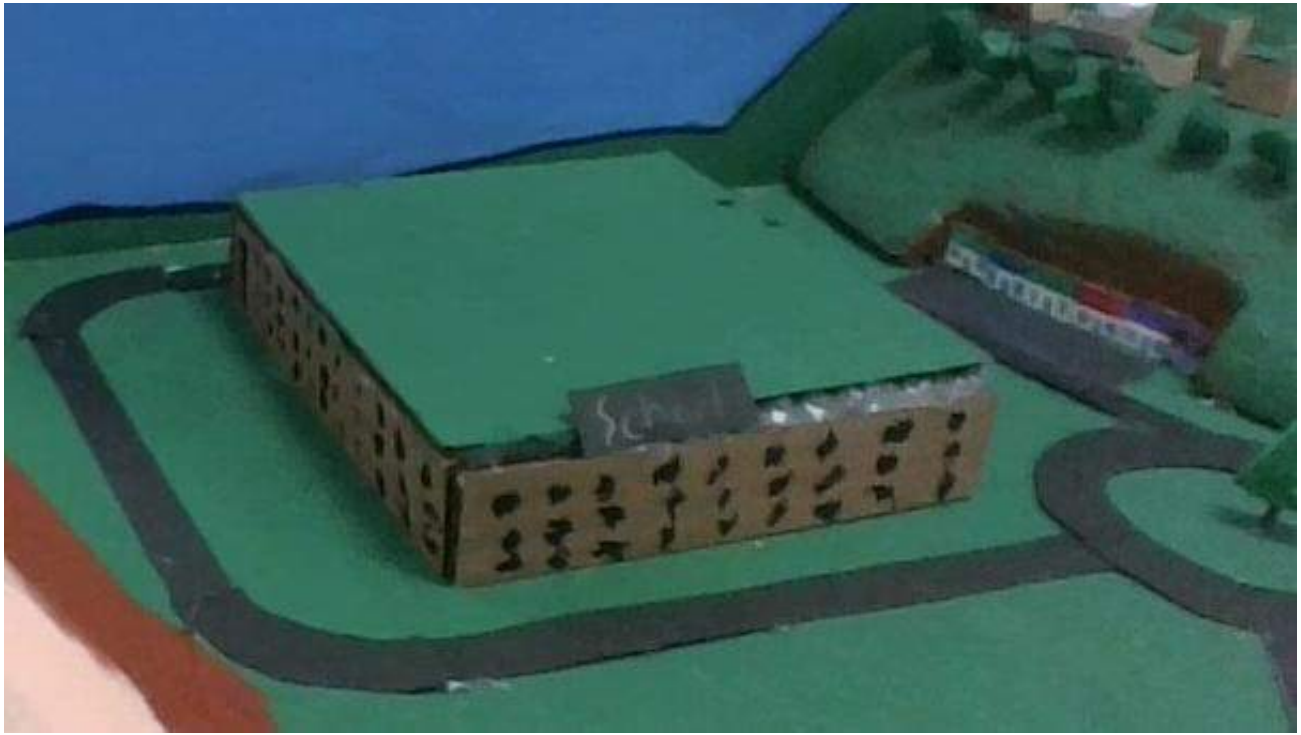


What type(s) of city services are shown here (health, education, etc.)?: food supply

What do you want the judges to know about your city's operations?:

Hydroponic gardening is a way to grow plants with 0 soil and saves a ton of water and resources. The hydroponic farm's water is supplied by run over water from the water train that continues through a filtration station where the nutrients is added. Then this mixture is supplied directly to the roots. We decided to go with this process because it has been proven to yield more products and save anywhere from 80%-90% of water need to grow. Not to mention this system can be used all year long because of the controlled environment they are in.

City Services Example 2



What type(s) of city services are shown here (health, education, etc.)?:

Education

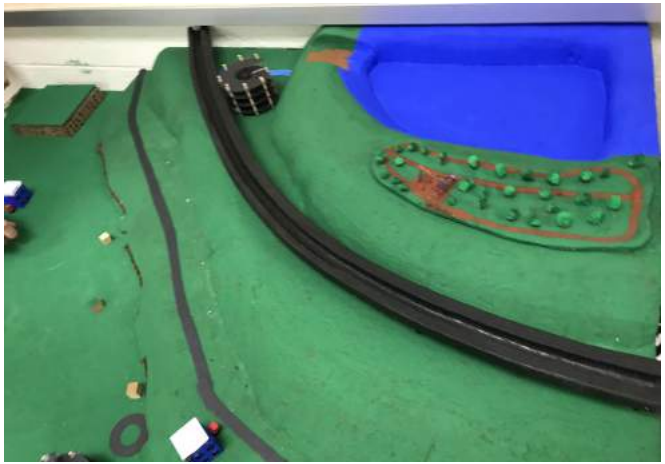
What do you want the judges to know about your city's operations?:

In our school, students use tablets which they can write on and teachers can send assignments to which reduces the use of paper. Lunch time also uses a variety of reusable products as disposable products are not available. Food for lunch also comes from our hydroponics lab to limit transportation pollution. Ambobay offers free public education to all school aged children in the city.

Transportation Example 1

Train, measuring at 6 inches in real life, 330 in the model

Train Canal



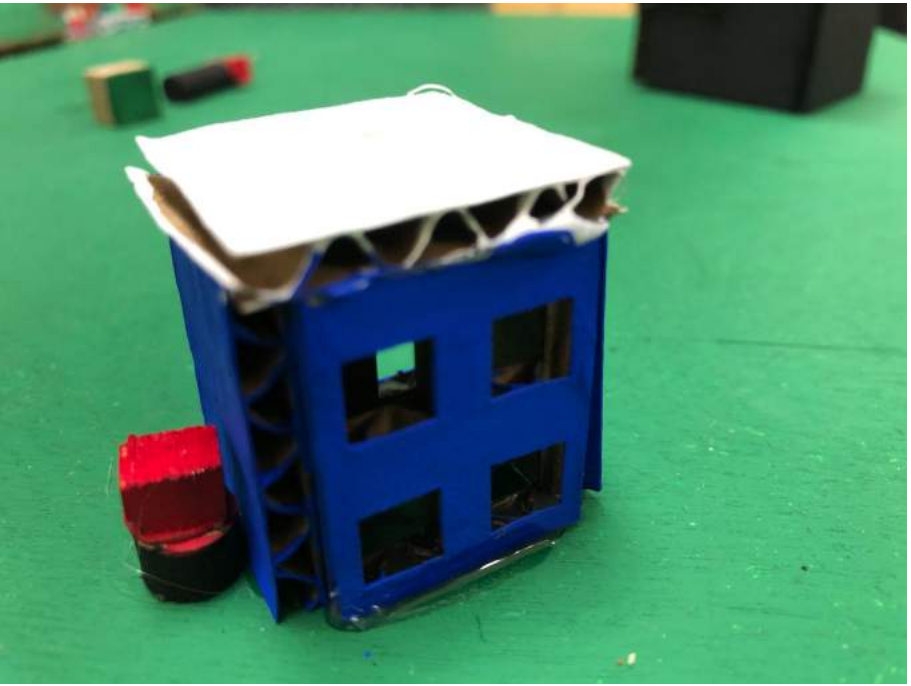
What type(s) of transportation systems are shown here?:

A train that operates like a log flume on an elevated track using gravity to move.

What do you want the judges to know about your transportation system(s)?:

The train itself requires no power being a log flume like tram, moved by being powered by the downflow current of the water makes it a clean source of transportation. The train itself is just carts linked together, going all around the city, not just the quarter that is shown, providing free clean transportation to all citizens of Ambombay.

Transportation Example 2



Here is an example of one of our scooter stations where our air scooters are filled with compressed air and then ready to drive.

What type(s) of transportation systems are shown here?:

Our example of transportation is the scooters and scooter vending machines.

What do you want the judges to know about your transportation system(s)?:

Our scooters run on compressed air. They are able to drive at a speed of 50 miles per hour, and can last 5 hours per tank.

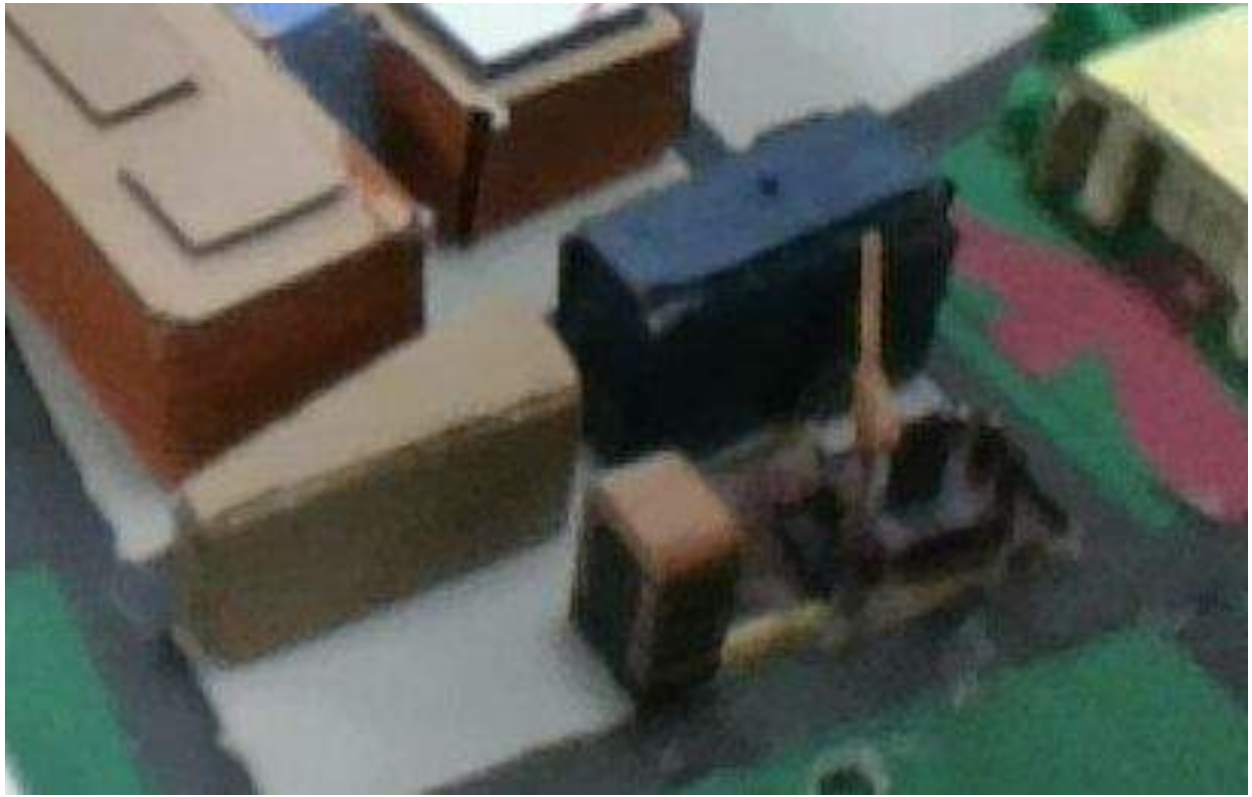
Our scooter vending machines are where our citizens go to get their scooter. A membership paid in a small fee carried out monthly of $10.50 is paid to receive the scooters.

Principles of a Circular Economy in Action - Example 1

What is important for the judges to know about this element of your circular economy solution?:

Similar to Philadelphia's 1% law, 5% of buildings in Ambobay must be public space (private property is excluded). Energy theft is punished by 6 years in prison with no bail and a $500 fine along with a 2 month probation period after the sentence. 25% percent of public property must be green, violations are prefaces with two warnings that if ignored will result in 3 months of community service and a $20 fine. Once people are 14 they can begin doing certain jobs. All electronic devices must use the same charging cable shape- no matter the brand.

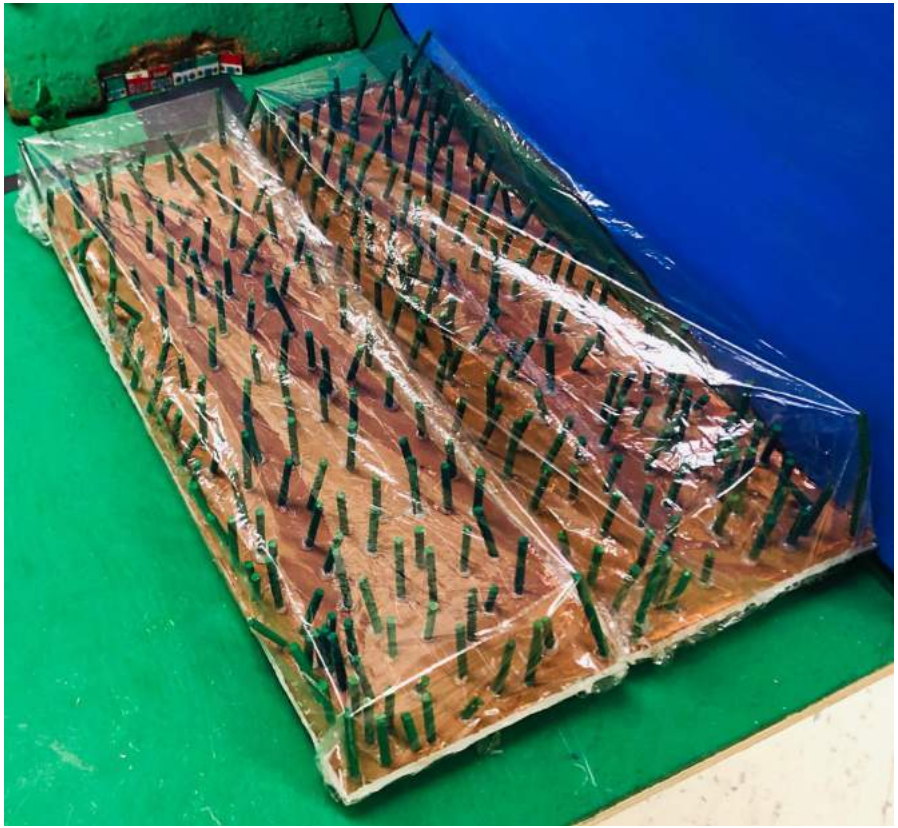
Principles of a Circular Economy in Action - Example 2



What is important for the judges to know about this element of your circular economy solution?:

The bricks are a main part of our economy. Other cities pay us to take there trash and turn them into plastic bricks. our main import is plastic that is given to us as material to make and our main export is plastic material made a new.

Principles of a Circular Economy in Action - Example 3

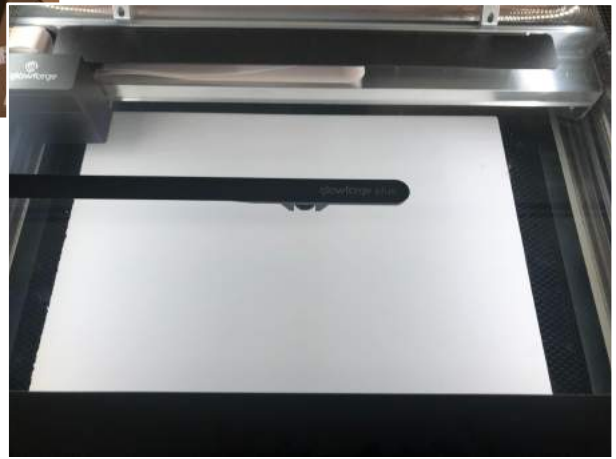


What is important for the judges to know about this element of your circular economy solution?: Bamboo represents our circular economy in multiple ways. When a bamboo product reaches the end of its life, we can use the remains as compost for our farm. If not, bamboo products can quickly decompose into soil, causing almost no harm. Another feature of bamboo is how it can help us regenerate natural systems. By making a products out of bamboo, you take less from the natural environment so that it will regenerate. P.S. The greenhouse plastic is collected and fixed by ocean cleanup groups and workers respectively making it help the ocean recover it’s natural systems.

Section II

BUILD IT: QUALITY, SCALE, AND MATERIALS

Innovative Material & Use Example 1



Choose a recycled or reused item and describe how you used it creatively in your model:

We used a lot of recycled cardboard for our project. While the material may not be innovative, the way we used it was. We put the cardboard into a computerized laser cutter which then took a drawing made from a computer to be eggsaked to make our builds we used a laser cutter to be as precise as possible to make it as realistic as possible. This also helped reduce waste when creating our city as we were able to use just about the entire piece of cardboard each time.

Innovative Material & Use Example 2

Choose another recycled or reused item and describe how you used it creatively in your model:

In this case, it's not so much the material that's innovative but the way we used it. What we did is we took some black poster paper and used the laser cutters to cut the paper into some rings with a slit in the side and 8 small holes around the edge. Then we took a thin dowel and cut it up into pieces. We then fed the dowels into the rings, stopping at different increments, in such a way that creates a spiral.

Innovative Material & Use Example 3

Choose another recycled or reused item and describe how you used it creatively in your model:

We used a tennis ball along with recycled material to create a bouncing chair, which collects and stores energy for students to use at school. We realized students are a great source of energy and invented a ball chair for them to sit and bounce on. The friction created from the bouncing gets stored into a battery pack which in turn can charge students tablets and devices.

Example of Scale

Scale used in model (e.g., 1”= 10’, or 1”=22’):

Structure 1

What type of structure is this?:
A public park.
What size is the structure on the model?:
49.42 Square inches
What size would this structure be in real life?:
2718.1 square feet

Structure 2

What type of structure is this?:
trees
What size is the structure on the model?:
each tree is 1.5 inches tall and .75 inches wide
What size would this structure be in real life?: Trees are approximately 82.5 feet tall

Moving Part (LOOK ON NEXT SLIDE)

- **Team Educators**: Don't forget to include the link to your team's moving part video in your Educator Dashboard submission section.

- **Judges**: Watch and review the moving part video from this team in your Judge Dashboard.

Video Details:

- The video must be posted as to be publicly available for judges to access on either YouTube or Vimeo.
- Video cannot exceed 1 minute.
- Teams need to mention their city/team name in the video.
- Teams must show the moving part in action.
- In the video, share what role the part plays within the city and how your team built it.

Ambombay’s Moving Part - The Water Train

Ambombay’s water train is a 100% clean way to travel through the city. The train operates similarly to a water slide, running solely off of water current coming from the hydro power plant.

This uses no environmentally unfriendly process and has high walls so the passengers do not fall off

The train runs on the track shown with the hydro power plant (water pump) pumping the water to make it go. The train falls off the track at the end but hypothetically goes around all 4 quarters circling the reservoir.

Section III

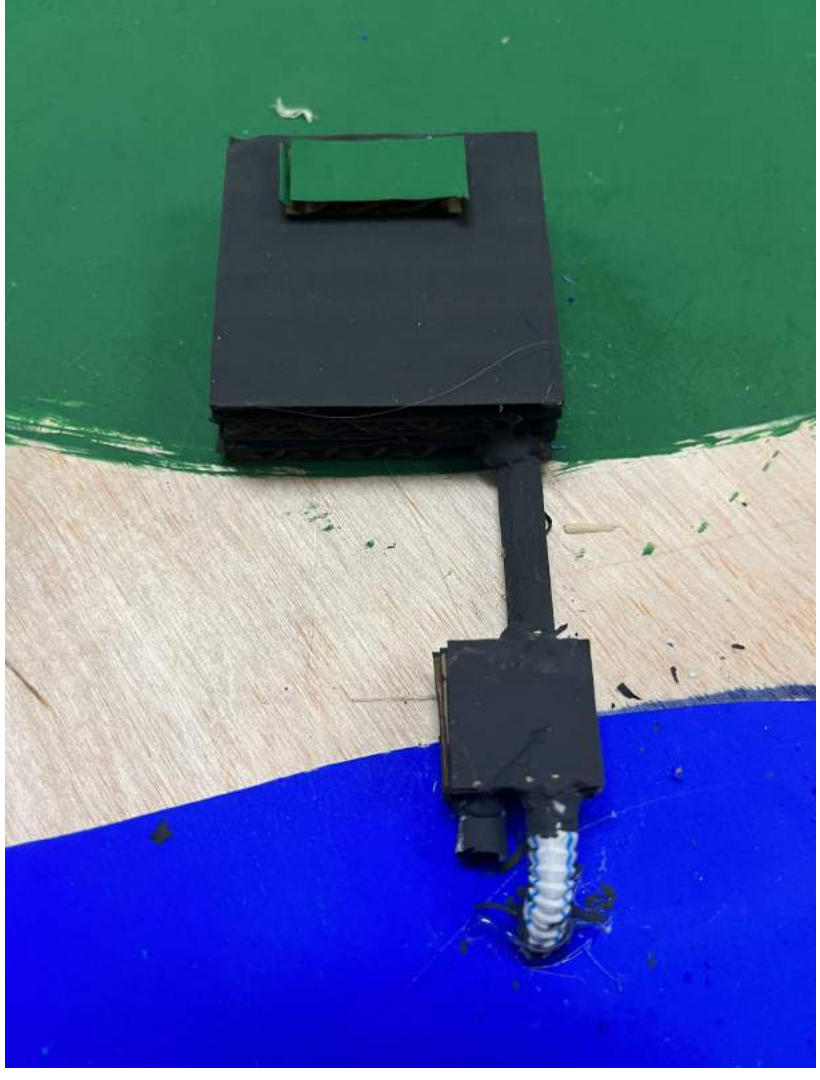
JUDGE ASSESSMENT OF MODEL

Futuristic Technology Example 1

What is important for the judges to know about this example of technology?:

The way our water system is used throughout the city to power and supply it is a very unique and water saving part to the city. The water comes out of the reservoir goes threw the hydroelectric dam where it makes clean energy for the city. Then it powers the water train and the water that runs over is collected. Then, some of this water gets nutrients added and goes to the hydroponic farms. The rest of the runover water is ether filter and becomes running water for houses or waters the other agricultural parts of Ambombay.

Futuristic Technology 2



What is important for the judges to know about this example of technology?:

Fusion is practically a green source of energy having little long-lasting waste and abundant fuel sources. Tritium is very scarce but it can be made by a fusion reaction with lithium. Lithium is notorious for being a big carbon producing mining material. But there's an alternative to mining lithium, instead we use pump geothermal water from the ground and use nano-filtration to filter lithium from everything else in the water. So essentially we are using water to power fusion to make ~500 megawatts a year. It will create about 30% of our city's energy