2021-2022 City Model Slideshow

School/Organization: **Downingtown Middle School**

Educator Name: **Mr. Derek Mastrangelo**

Future City Team Name: **Komodo**

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

Residential Zone

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

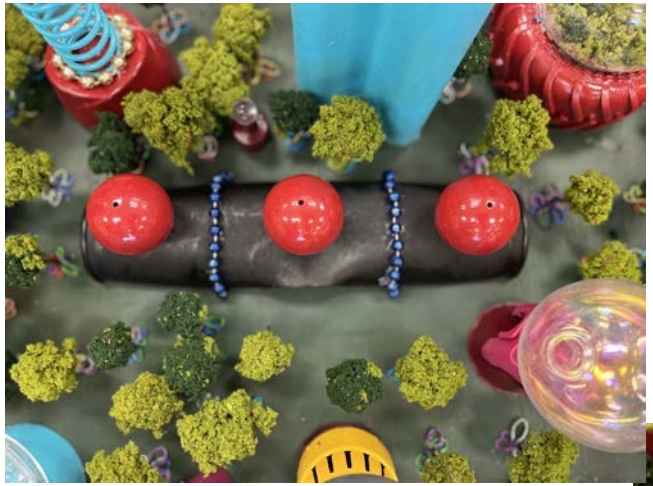
Komodo's residential zone consists of three wealth levels: high, medium, and low. STACKS are customizable, vertically built complexes to reduce infrastructural footprint. Buildings in the residential zone are built using plates created from our waste compaction and treatment innovation, Magneto Manifesto, and are bonded using GOOT, a viscous adhesive created from polystyrene products. Residential dwellings are equipped with Hypertubes, an underground tube system which efficiently aids in waste disposal while also providing efficient delivery of goods to residents.

Commercial Zone

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

Mixed use commercial zones in Komodo are dispersed throughout the city to ensure equitable access to all citizens. Entertainment, dining, and shopping throughout the city has something for all Komodians! Clothing stores specialize in *Honey, Where's my Super Suit? (HWSS)* garments and technology, which are created with zero waste and include woven biometric scanners in the fibers. Amusement parks, restaurants, and more all integrate Hypertubes to aid in disposal of trash and transport supplies to consumers throughout the city.

Industrial Zone



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

Our mixed use industrial zones throughout Komodo consist of large, eco-friendly research, engineering, labs, and manufacturers. GOOT (Glue of Our Trash) research, development, and manufacturing takes place in our industrial zone. GOOT starts with a chemical reaction which causes polystyrene materials to dissolve and form a glue-like mixture when combined with acetone. GOOT can then be used as grout for large-scale construction or on a small-scale as super glue. In addition to GOOT production, research and development is a primary driver of our industry and economy.

Infrastructure Example 1

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

Shown here is Magneto Manifesto, our electromagnetic system which compacts trash.

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

Magneto Manifesto compacts waste into thin plates to support Komodo's infrastructure and improve overall structural integrity. In 2021, sectors of Jakarta were sinking, threatening citizens quality of life. Magneto Manifesto's plates design out waste and can be placed underground to hold up vulnerable parts of the city or used for infrastructure.

Infrastructure Example 2

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

Shown here is Hypertubes, our waste and goods transportation.

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

Hypertubes are made from a plant-based plastic, Planastic, as well as Millibots, nanotechnology-based bots, to create tubing systems beneath Komodo. Tubes can be used to transport waste from all three zones throughout the city as well as aid in the delivery of goods to residents. This cuts shipping waste by over 80% than in 2021 and ensures waste produced by Komodians can be repurposed for use throughout the city.

City Services Example 1

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

The city service shown here is kCloud.

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

kCloud is a vast AI network which monitors and controls public services throughout Komodo. kClass, Our 3D immersive learning experiences for our education system as well as our fire protection system, KomodoSense, are managed with kCloud. KomodoSense autonomously detects fires throughout buildings in Komodo and can deploy GOOT Fire Foam (GFF) to neutralize any fire in the city.

City Services Example 2

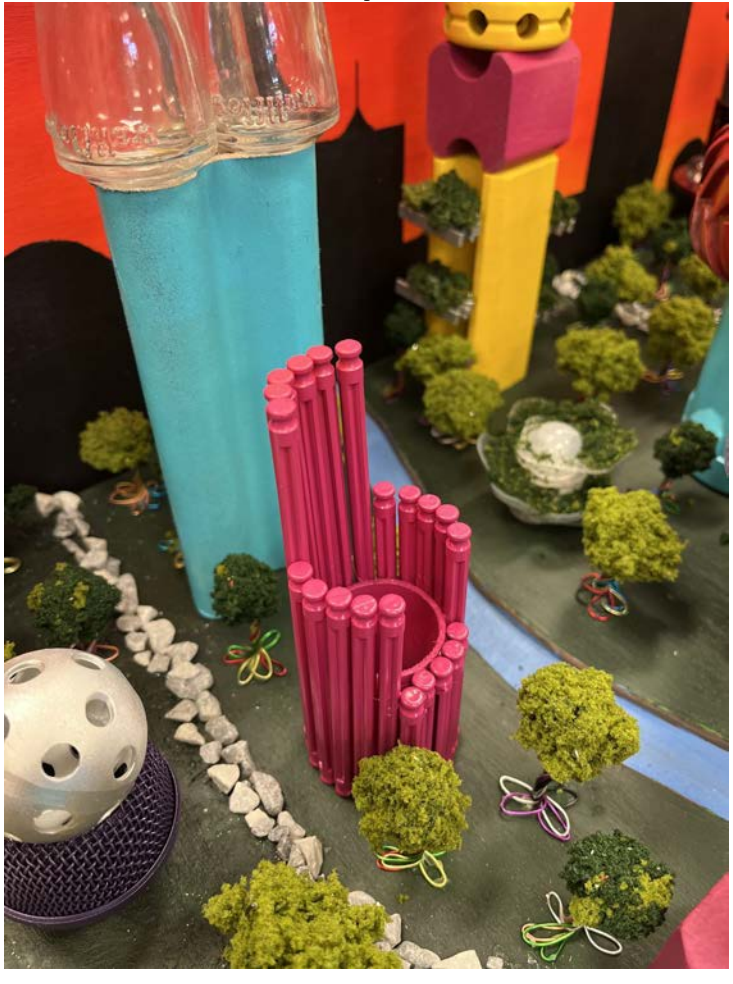
What type(s) of city services are shown here (health, education, etc.)?:

The city service shown here are Intellidrones Hub.

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

Monitored and controlled by kCloud, IntelliDrones is our city's public safety service. Bladeless drones are deployed throughout the city and are used to alert police of any unsafe activity. They can also be signaled in the event of emergency. Intellidrone's can also apprehend criminals by deploying GOOT Detainment Spray (GDS) which restricts suspects movement from the scene of the crime.

Transportation Example 1



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

The transportation system shown here is Plubbles for Personal Transport (PPT).

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

Plubbles are our waste-free transportation. When one steps onto a Plubble Pad integrated sidewalk, a Plubble is formed around them in its more malleable state. The Plubble then slightly hardens as it leave the ground. Plubbles have Millibots incorporated into their structure which help navigate and prevent accidents. When you reach your destination, the Plubble floats down and retracts into the sidewalk.

Transportation Example 2

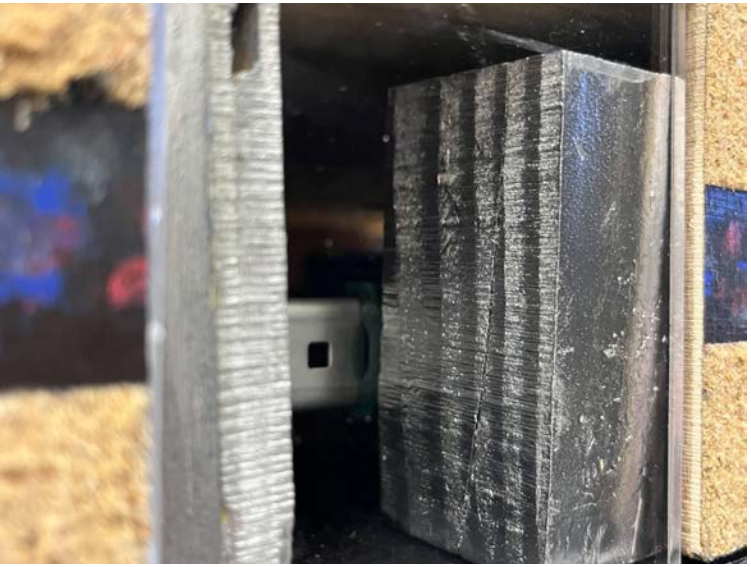
What type(s) of transportation systems are shown here?:

The transportation system shown here is Party Plubble (PP).

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

The Party Plubble is a Plubble designed for large-group public transport. Using piezo sensors which detect the presence of multiple entities, Party Plubbles can shape to fit and transport large groups of people in them. Functioning much like individual Plubbles, Plubbles navigate Komodo autonomously and retract back into the Plubble Pad integrated sidewalk once the group has reached their destination.

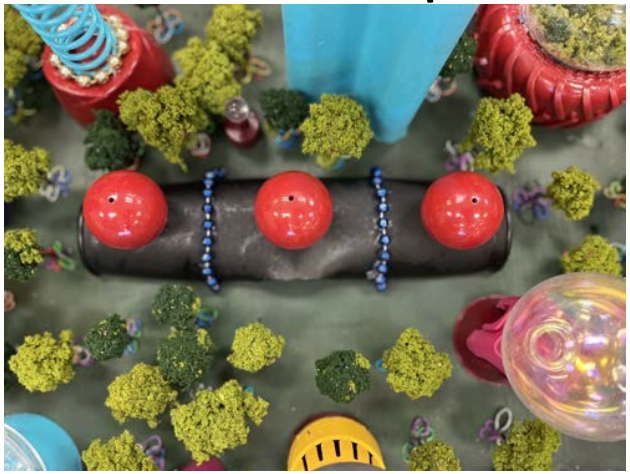
Principles of a Circular Economy in Action - Example 1



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

Komodo adheres to the first principle of circular economy, designing out waste and pollution, through the creation of Trash-Eating Bacteria (TEB). Chemical and biotechnical engineers in Komodo genetically modified a strain of bacteria which can break down and decompose many forms of waste to be reused throughout the city. While TEB cannot address all the waste in the city, the residual waste is treated and used in the Magneto Manifesto to create thin plates for infrastructure and city structural integrity.

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?:

Komodo adheres to the second principle of circular economy, keeping products and materials in use, through the creation of Glue Of Our Trash (GOOT). GOOT is a super strong adhesive created from dissolved polystyrene materials such as styrofoam when combined with acetone. GOOT can be used for grout in large-scale construction to superglue. Variations of GOOT are also used in both our public safety and fire safety systems. GOOT Fire Foam (GFF) is employed in our fire safety system while GOOT Detainment Spray (GDS) is found on board our Intellidrones.

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?:

Plantastic is our innovative technology which adheres to principle three of circular economy - regenerating natural systems. Plantastic is a plastic-like material made out of plant parts such as stems, petals, plant oils, and microscopic seeds. Plantastic enzymes sense when the item has been discarded into a natural system, and after three days it begins to decompose into the identified environment. This has give rise to a thriving natural ecosystem in Komodo which includes its most recognizable flora, the Rainbow Eucalyptus tree.

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:

Empty glass plug-in air fresheners were used as toppers for many of our buildings throughout our city's industrial zones. The air fresheners first had their wicks removed and the glass cleaned so they could be painted. Once painted, the air fresheners were glued upside down on top of building bases made out of compressed, geometric cardboard tubing. We also used the covers of the air freshener wicks to represent smaller-scale public education buildings throughout our model.

Innovative Material & Use Example 2

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

Contact lens blister packs were used to form public space parks and gardens throughout Komodo. The blister packs were first cleaned and then stacked upside-down in a spiral fashion. Once organized, the packs were glued together and had artificial moss applied. The stacked, winding structure is a great example of the innovative architecture of Komodo which also maintains a natural aesthetic and function. Public green spaces are integral in maintaining a high quality of life and well-being for Komodians.

Innovative Material & Use Example 3

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

Child building toy pieces were used for several buildings which serve on the model as both residential and public service structures. The base and middle portions of these buildings were constructed using wooden marble toy pieces, while the upper base is built using a wooden circle toy The bottom three pieces were painted, glued together, and topped with a DIY holiday ornament. These buildings represent kCare, our city's public health. AI surgeons along side of biomedical engineers and doctors ensure Komdians health and well-being!

Example of Scale

Scale used in model (e.g., 1”= 10’, or 1”=22’): **Our Scale: 1”=100’**

Structure 1

What type of structure is this?: **Research and Development Institute**

What size is the structure on the model?: **2.75’’(L) x 2.75’’(W) x 7.5’’(H)**

What size would this structure be in real life?: **275’(L) x 275’(W) x 750’(H)**

Structure 2

What type of structure is this?: **Recreation Arena - Plubbling Pavilion**

What size is the structure on the model?: **1.75’’(L) x 1.75’’ (W) x 3.75’’(H)**

What size would this structure be in real life?: **175’(L) x 175’(W) x 375’(H)**

Moving Part

- **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.

Section III

JUDGE ASSESSMENT OF MODEL

Futuristic Technology Example 1

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

Cookies of Conduction (CoC) is a revolutionary use of food waste for citizen consumption! Food waste is transported to the Cookies of Conduction Center (CCC) via Hypertubes. Sensors separate waste upon arrival and sends usable waste to a vacuum chamber where it is heated and pressurized. The waste then undergoes sublimation which removes any harmful gases. The remaining carbohydrates, protein, and nutrients are compressed, naturally flavored, and packaged for consumption. CoC are a great supplement to the Komodian diet!

Futuristic Technology Example 2

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

Millibots are our dynamic nanotechnology robots, which we incorporate into a variety of materials throughout Komodo. These one-millimeter in size bots can autonomously form complex shapes and are designed to create and repair anything through their woven graphene wire structure. Millibots are incorporated into our cities waste removal and goods distribution system, Hypertubes, as well as our waste-free transport system, Plubbles. Millibots also are integrated into our water system and are used as a layer of filtration to ensure clean water for all Komodians.