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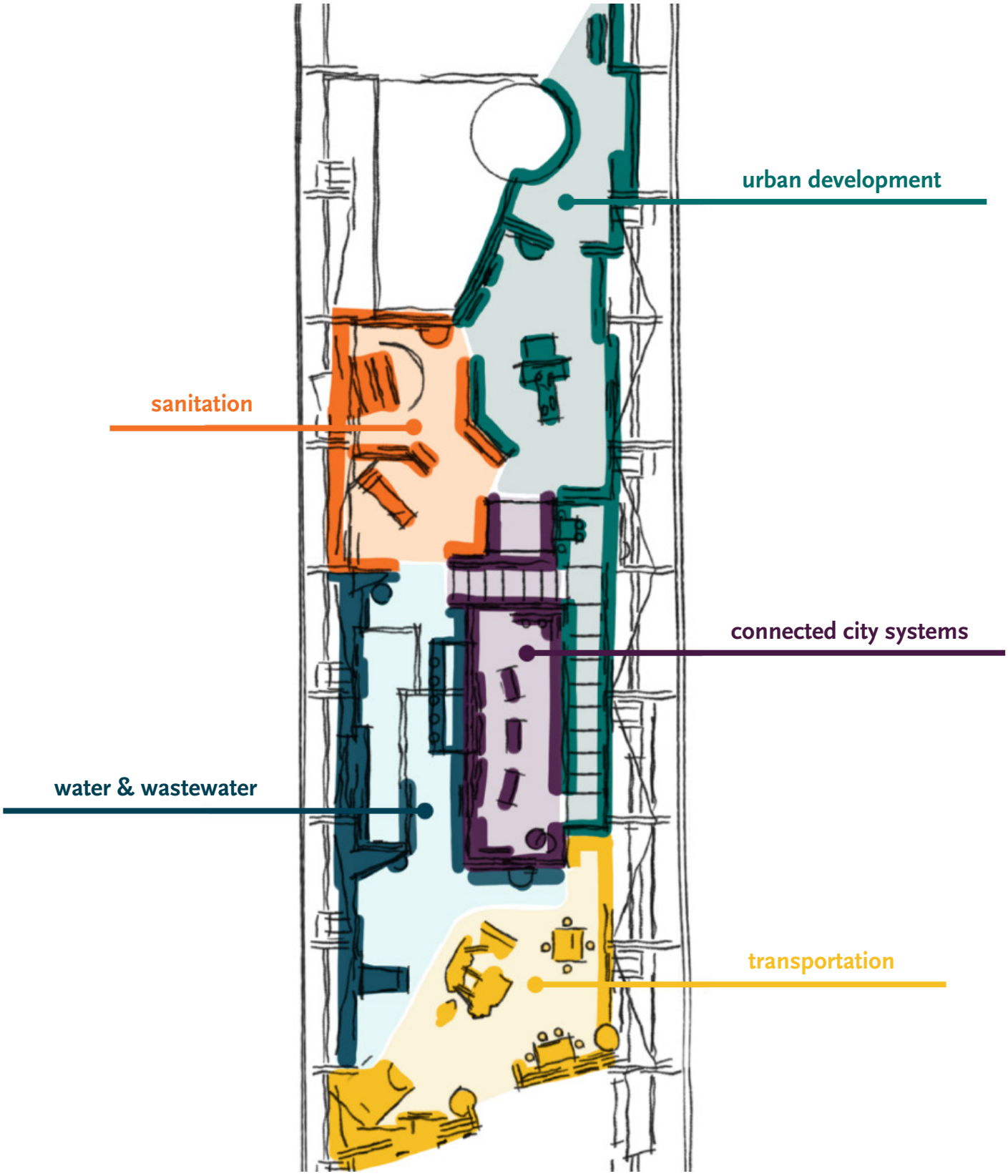
urban development
sanitation
connected city systems
water & wastewater
transportation

NAME _____

Transportation

Visit the Mass Transit Design exhibit in the Transportation exhibit area. NYC's transit system is very old and very crowded. Your challenge is to design a better system!

Use the colored pieces representing existing subway lines, regional rail lines, and ferry routes to extend service, start new lines, or create new connections.

In your own travels, where do you notice challenges in getting around the city?	*What would you add to improve your commute?*	*At the exhibit make those improvements, what happened once you added the new line(s)?*

Transit upgrades often involve tradeoffs. Would you rather deal with frequent delays over time or a complete shutdown for several months to get the work done faster? Explain your reasoning.

NAME _____

Water and Wastewater

Visit the Aqueduct Model in the Water and Wastewater exhibit area. Stand at the Aqueduct Model. Look closely at the map view (from the top) and the 3D tunnel model (from the side). Notice the tunnels, reservoirs, and how water moves through NYC's system.

The tunnels and pipes that carry NYC's water move up and down through different layers of rock. Sometimes they stay near the surface, and sometimes they drop deep underground to pass under valleys or rivers.

Looking at the Aqueduct Model, how do you think the shape of the land and the type of rock affect how engineers design the water system?

How is gravity being used to help move water through the system without pumps?
Hint: check out the Gravity Flow exhibit.

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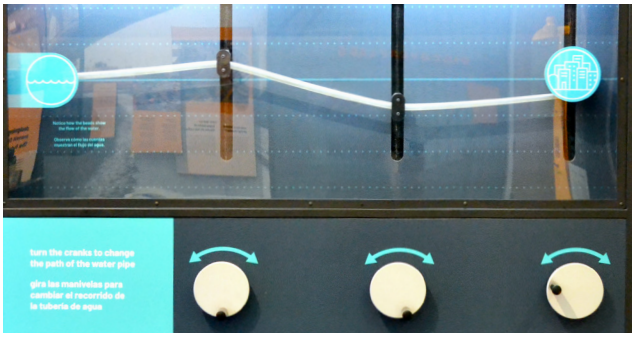
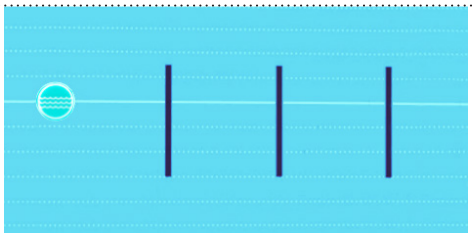
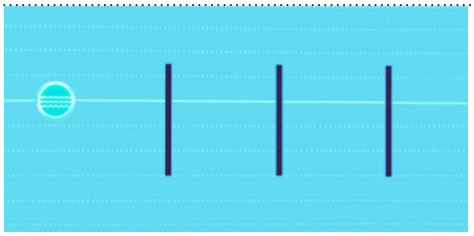
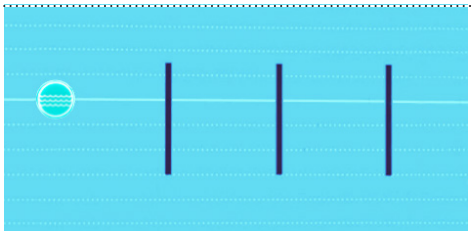


Water and Wastewater

Visit the Gravity Flow exhibit in the Water and Wastewater exhibit area. Turning the cranks will adjust the height of the water pipe.

Test out three different configurations and draw them on the chart below. Observe the flow of water demonstrated by the moving beads for each configuration.

Draw the path the water took through the tube. Use a circle to show the height of the city, and lines to show how you set the cranks.	*Describe what happens to the water flow with this path.*
	
	
	

Which of your paths kept the water flowing all the way to the city, and why do you think it worked best?

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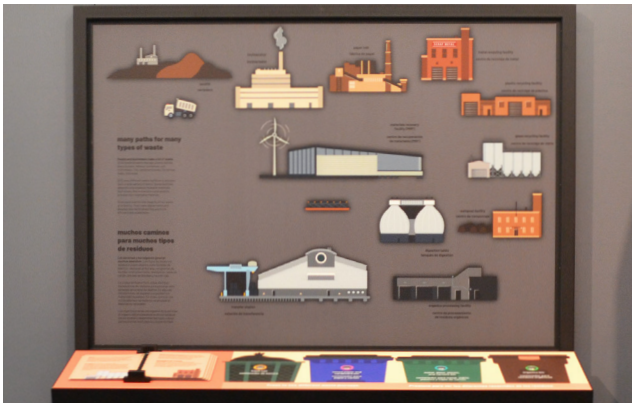


Sanitation

Visit Wastestream Journey Map in the Sanitation area. Watch how trash, organics, and recyclables travel through NYC's waste system.

Look closely at the map. Notice how waste items move a long different paths to reach landfills, incinerators, organics processing, composting, transfer stations, and recycling centers/Material Recovery Facilities (MRFs).

Where does the waste go?

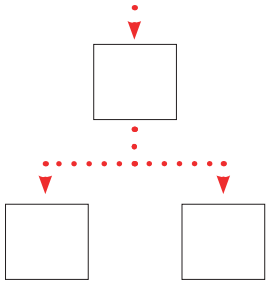
Fill in each waste journey pathway blank with the letter that matches the correct facility from the list below.

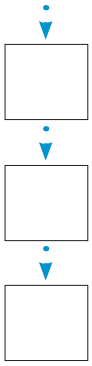
Trash

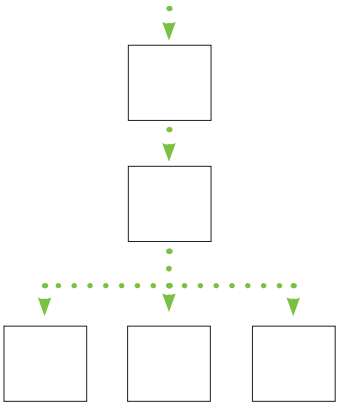
Mixed paper & cardboard

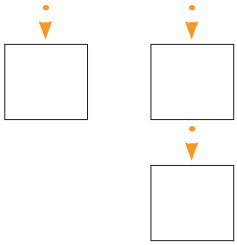
Metal, glass, plastic & cartons

Organics









A. Transfer Station

B. Landfill

C. Incinerator

D. Materials Recovery Facility

E. Paper Mill

F. Organics Processing

G. Digestion Tanks

H. Compost Facility

I. Glass Recycling Facility

J. Plastic Recycling Facility

K. Metal Recycling Facility

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Urban Development

Visit Flood Maps in the Urban Development area. Explore the interactive Flood Maps, move the slider to see how the neighborhood and/or entire NYC region will change in the future as sea level rises.

Flood Map Component	*What do you notice?*
Storm Surge	*What happens as you increase storm intensity from Level 1 to Level 4?*
Sea Level	*What happens to the future sea level as you increase into the year 3000?*
Daily Tide	*What happens as you go from low tide to high tide?*

Which areas of the city are most at risk from flooding? Why do you think that is?

My reflections. After exploring the rest of the exhibits in CityWorks:

What is one part of the CityWorks exhibit that reminded you of something in your own neighborhood (do you have a bodega cat too)?

What did you learn about how your city works that was surprising?

If you could improve a system or add a new system in your community, what would it be?