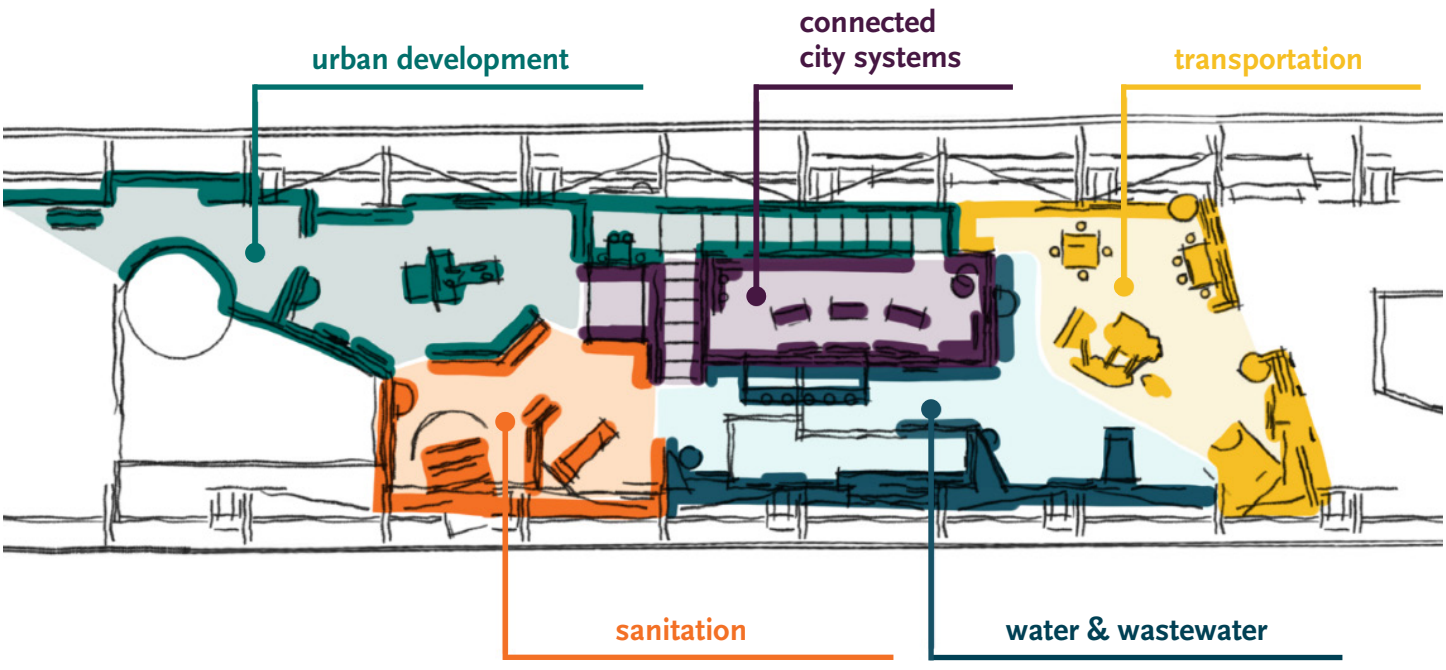
Educator Guide: CityWorks Worksheet
Grade 1 – 2

Welcome to the CityWorks exhibition at the New York Hall of Science!

CityWorks is an immersive exhibit that invites students to explore four major infrastructure systems that keep New York City running. Through hands-on activities, interactive displays, and real-world examples, students learn how each system functions, how they connect to one another, and how they affect daily life in the city. The four main sections include:

- **Transportation:** Explore how engineering, management, and design shape the way subways, buses, sidewalks, and roads work.
- **Water & Wastewater:** Discover how clean water reaches our homes and where it goes after we use it, including filtration, treatment, and sewer systems.
- **Sanitation:** Learn about NYC's waste system, from collection to recycling, and explore the many tools, vehicles, and workers involved in managing our city's trash.
- **Urban Development:** Explore how New York City's buildings and neighborhoods are designed and built. Learn about the materials, engineering, and construction processes that create the city.
- **Connected City Systems:** Explore how natural and human-made systems work together and against each other in a city.



CityWorks Exhibit Worksheet for grades 1 – 2

The New York Hall of Science has developed a printable, foldable student journal that supports students in observing and reflecting on what they saw at *CityWorks* through drawing, coloring, and writing. The journal can be used during the field trip or completed back in the classroom, or even at home with support from their caregivers.

SECTIONS OF THE JOURNAL

1. City Transportation

This activity encourages students to recall and reflect on the many ways people travel around NYC. By choosing and describing their favorite mode of transportation, students connect personal experience with the systems they observed in CityWorks.

2. City Trains

Students look closely at a simplified subway map to identify lines and boroughs. This section introduces systems thinking by showing how boroughs are connected and prompting students to consider accessibility across the city.

3. City Buses

Students extend their bus driver experience by drawing and writing about what they saw. This activity helps them consider perspective-taking, while also thinking about the responsibilities and challenges of public service jobs.

4. City Workers

This matching activity helps students recognize the many roles that keep the city running smoothly. It highlights civic responsibility and introduces the idea that complex city systems rely on many different kinds of workers.

5. City Animals

Students color and write about urban animals they saw in the exhibit and in their own neighborhoods.
This activity supports observation skills and helps students connect the exhibit to real-life ecosystems around them.

Note: An answer key is provided to help educators guide responses. It should not be printed or shared as part of the student journal.

TIPS FOR USE

Pre-visit

Review key vocabulary terms with students before visiting. This builds background knowledge they will use in the exhibit.

- **City** — a place where many people live and work together.
- **Transportation** — ways people and things move around, like buses, trains, cars, or bikes.
- **System** — parts that work together to do a job, like traffic lights and roads helping cars move safely.
- **Worker** — a person who has a job that helps the city, like a bus driver or sanitation worker.
- **Urban Animals** — animals that live in the city.

Conduct any or all of these activities to build up understanding for what they will experience at the exhibit:

- **Who Helps Our City?** Ask: *"Who are the people in our neighborhood that you see helping other people in our city?"* (bus driver, police officer, sanitation worker).
- **Sorting Game:** Practice sorting items into "trash" and "recycling".
- **Getting Around:** Ask students how they got to school that day (walk, bus, train, car). Create a simple chart together that tallys use per transportation mode.
- **Prediction Question:** *"What do you think you'll see at CityWorks about how a city works?"*

During visit

Guide your group to the following areas which connect to their journal:

Cityworks Section	Teacher Prompt	Journal Connection	Exhibit Connections
Transportation (Yellow Section)	"How are people moving around the city? Do you see buses, trains, cars, or bikes? What about people who don't drive, how else can they get around?"	Students can draw or circle the types of transportation they see.	Bus, subway, taxi, bike, walking.
City Workers (Throughout the Exhibit)	"Which workers do you see helping the city? What are they doing? What tools or clothes tell you about their job? How does their job help the city work?"	Students match workers to their jobs.	Sanitation workers collect trash, bus drivers move people, construction workers build roads or buildings.
Exhibit: Urban Wildlife Mural (Green Section)	"What animals do you see living in the city? Where might they find food or shelter? Look closely — do you see anything flying, crawling, or hiding? Why do animals live in cities too?"	Students identify or draw animals from the mural and think about how animals share the city with people.	Birds, squirrels, raccoons, insects.

Post-visit

- **Complete the journal.** Give students time to finish drawing, writing, and sharing what they learned.
- **Reflect as a class.** Lead a discussion about what they noticed and what they still wonder about. Record ideas on a T-chart labeled *What We Noticed* and *What We Wonder* to help organize their thinking.

- **Share journals.**
  With classmates: Pair students to exchange journals. Have them add a drawing, question, or comment to a partner's journal to encourage peer feedback.
  With families: Invite families to read journals together. Encourage parents or caregivers to add a short note, question, or memory connected to the topic to strengthen home-school connections.
- **Extend learning in the classroom.**
  City Worker Career Celebration: Students dress as their favorite city worker and share what that worker does.
  City Animals Mural: Create a class mural of animals seen around the city. Keep a tally of animal types to connect with math skills.
  Build a City Model: Using blocks or recycled materials, have students design a part of a city system and explain how it helps the city.

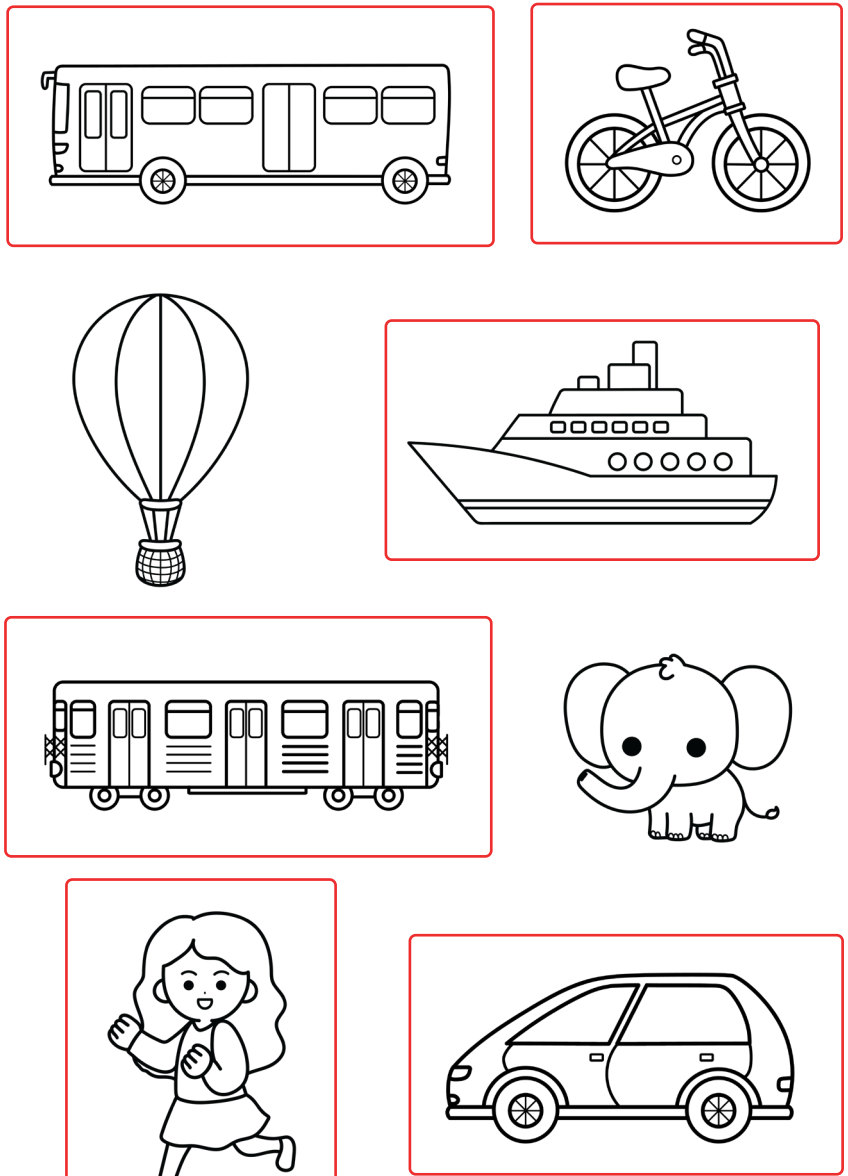
We hope CityWorks sparks curiosity and joy in your young scientists!

Curriculum Connections

NYSSLS	Standard Description/Concept	Science Concepts and Learning Objectives
K-ESS3-1 Earth & Human Activity	How people use natural resources to meet their needs.	Systems and System Models: How do parts of a city work together? Patterns: What patterns do we see in how cities are built?
K-2-ETS1-1 Engineering Design	Asking questions and making observations about tools.	Structure and Function: What parts make up systems like buses or pipes? Asking Questions: What do you wonder about the workers or systems? Communicating Information: Drawing, coloring, and sharing what they saw
K-2-ETS1-2 Engineering Design	Sketching solutions to problems in city systems.	Structure and Function: What parts make up systems like buses or pipes? Designing Solutions: Imagine or suggest improvements to how a system functions.
1-PS4-1 Waves & Information	Exploring how we receive and use information.	Communicating Information: Drawing, coloring, and sharing what they saw
2-PS1-4 Matter & Interactions	Finding ways to reuse materials to solve problems.	Systems and System Models: How do parts of a city work together? Designing Solutions: Imagine or suggest improvements to how a system functions.

City Transportation (Answer Key)

1. Color the ways people travel in our city that you saw in the CityWorks exhibit.



City Workers

1. Many people work in the city to help it run smoothly. Match each City worker to the correct job.

Sanitation Worker
I keep the city clean

Engineer/Planner
I design things

Construction Worker
I build things

Water Treatment Worker
I make sure your water is clean and safe to drink

Bus Driver
I help people get where they need to go

City Animals (Answer Key)

1. Look for the urban animals in the CityWorks mural and circle in the ones you can find.

2. What animals do you see in your neighborhood? Describe what you see them doing.

Canada geese, owl, hawk, butterfly, lanternfly, coyote, squirrel, raccoon, parakeets, bats, mice, roaches