

Solar Panels

- In Gallery B, find the windows where you can see the solar panels. Read the Solar Panels sign.
- Look at the solar panels. What do you notice about the color of the panels? How about the color of the roof around the panels? Why is the color important?

What direction are the panels facing? Why is this important?

- South facing panels will collect more sunlight throughout the day and the year than panels facing any other direction.
- Near the solar panels in Gallery B is a small computer kiosk. On the computer is a website that keeps track of how much sunlight the solar panels have collected. Click on the house icon to bring up the main page. Surf around this website to find the following information:
- Most Watts collected for today _____
- Which day of this month collected the most sunlight? _____
- Which month this year collected the most sunlight? _____
- You can access this website from home at any time to see how much sunlight the panels have collected.

www.3rdrock.us/discoverycenter/monitoring.php

Learn More

- Extend this environmental pathway by locating and reading all the signs with the leaf icon. You will learn other ways Discovery Center is green and also discover more tips on how to be green at home.
- Keep learning about green buildings at home! Check out these websites:
childrenoftheearth.org Click on the Green Homes link to watch how green building happens, from start to finish.
www.mysusthouse.org/game.html Interactive online game! Can you guild a sustainable home?
www.batteryparkcity.org/kids/green.html Learn about features of an green apartment building, and try planning a building of your own!
www.discoverycenter.org/GoingGreen/features.htm
Find out more about all of the green features found at DCS.



You are about to embark on a journey through Discovery Center to learn about **environmental science**.

Environmental science explores the relationship between organisms and their environment, and the ways human activities affect that relationship.

You will discover what a **green building** is and how to be more environmentally friendly at home and in school.

As you travel the pathway, you will learn ways to make sustainable choices in your everyday life.



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Environmental Pathway

Directions:

- Find the exhibit or sign as indicated on the pathway.
- Read carefully and do the activities listed for that exhibit or sign.
- Be sure to record your answers and check as completed on the chart.
- Move on to the next part of the pathway.

Pathway Section	Page #	Location	Done?
Welcome Sign	1	1st floor	
Cisterns	2	1st floor	
Restrooms	2	1st floor	
Paper towels vs. Air dryers	2	1st floor	
Pervious Concrete	3	1st floor	
Recycling	3	Throughout building	
Waste	4	1st floor	
Hamster Wheel Exhibit	4	1st floor	
Intelligent Lighting	4-5	1st & 3rd floors	
Energy Efficient Windows	6	4th floor	
Green Roof	6	3rd floor	
Solar Panels	7	3rd floor	
Learn More	7	Throughout building	

Welcome Sign

- Locate the **Welcome to Our Green Building** sign found near the entrances to the western side of the Discovery Center. There is one near the 1st and 3rd floor entrances.
- Read the sign. What is a green building? Discuss with your group and record your thoughts here.



Energy Efficient Window Exhibit

- Check out the Energy Efficient Window Exhibit near the WorldWide Gallery.
- Follow the directions at the exhibit—what do you find out?

Read the **Daylighting** sign next to the Windows exhibit. What can you do at home to make your windows help save energy?

Green Roof

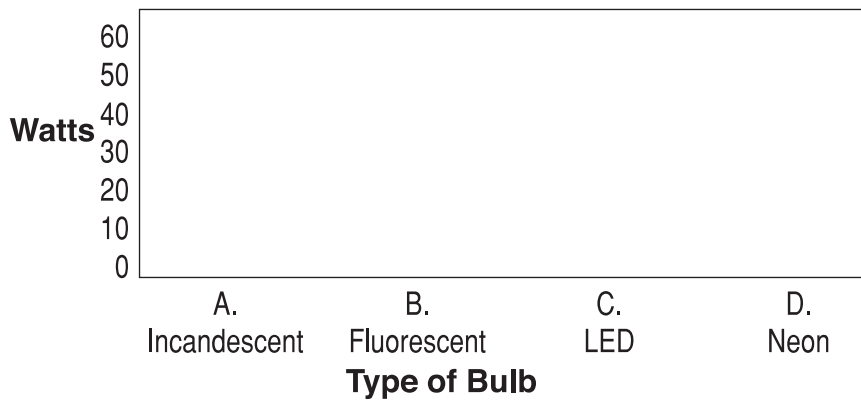
- Locate the Green Roof on the 3rd floor near the elevator. A green roof is a building surface that has plant life growing on it.
- Read the “What plants can you see?” sign. Using the map, can you find some of the native plants that are adapted to the shallow soil on our roof? Walk out on the patio for a closer view of the green roof.
- Draw one native plant found on the green roof.

- Green roofs conserve water by soaking up rainfall so it does not run into storm drains. The Discovery Center uses rainwater collected from the roof to water the plants, which saves even more water.
- The green roof also uses mulch and compost to keep plants moist by soaking up rainwater, adding important nutrients to the soil and preventing weed growth. Mulch and compost also recycle materials that might otherwise be wasted. Mulch is made from ground up wood, moss, or other natural materials. Compost is made from grass trimmings, leaves and food scraps. Can you find mulch and/or compost on the green roof?
- Start your own green roof at home by creating a container garden. Plant flowers, grasses, or even vegetables in pots or buckets and place them on a deck or patio. You'll reduce rainwater runoff and have a beautiful garden!

- Start the exhibit and record the number of volts on the chart below. (It is a *constant* – the same for all the bulbs.)
- Record the different number of amps required by each type of bulb.
- Multiply those two numbers together. This is the watt rating of the bulb – basically how much electricity is needed to power each light bulb.

	Volts	Amps	Watts
A. Incandescent	X	=	
B. Fluorescent	X	=	
C. LED	X	=	
D. Neon	X	=	

- Complete this bar graph to compare the electricity needed to power each type of bulb.



- Use the bar graph above to answer these questions:
- Which type of bulb uses the most energy? _____
- Which type of bulb uses the least energy? _____
- What type of bulbs do you have in your house? At school?

- Make a pledge to make your house more green! Read and sign the Energy and Water Conservation pledge brochure. Take some home for your family!

Keep an eye out for signs throughout the building that explain the green features the Discovery Center has incorporated. Each sign is marked with this leaf icon.



Cisterns

- Locate the **Rainwater Cisterns**. Hint: look for large metal containers above the restrooms near the purple stairwell. Read the sign on the wall.
- How many gallons of rainwater can be stored in each cistern?

- List two ways the Discovery Center uses this rainwater.

1. _____
2. _____

Restrooms

- Even our restrooms are green! Read the **Green Restrooms** sign located at the restroom entrance, then go in and try them out!
- What are some green features you noticed in the restroom? How do these features reduce water usage?

Paper Towels vs. Air Dryers

- Read the **Paper Towels vs. Air Dryers** sign in the restroom (the same sign is in both the women's and men's restroom).
- Try out the air dryers– feel the power!
- Gather up your group and take a vote: how many people think paper towels are better and how many think air dryers are superior? In order to cast a vote you must provide 2 reasons why your product is better. Let the debate begin!

Paper Towels	Air Dryers
Number of Votes:	Number of Votes:
Reasons:	Reasons:

List one thing you can do at home to make your bathroom more green.
Hint: read the “Did you Know?” section of the restroom signs.

Pervious Concrete

- Find the **Pervious Concrete** exhibit and sign. Follow the directions on the exhibit and draw the difference between the two tubes.

- Read the sign and look at the patio made of pervious concrete.
Hint: you can see the patio through the corner windows just to the right of the sign.

What does pervious mean? _____

Recycling

- Have you noticed any of these recycling bins throughout the Discovery Center?
- Circle the materials the Discovery Center collects and recycles.



glass



Styrofoam



paper



plastic



aluminum



rubber

- What materials do you recycle at home? At school?

Waste

- Locate the Deconstruction and Construction Waste sign near the large windows facing U.S. Bank on the north end of the 1st floor.
- Read the sign and then use the “Build A Lunch” exhibit to practice being green at home by building a lunch that creates very little trash. Turn the panels under each category to choose the item that will help create a “green” lunch. Be sure to explain to your group why your lunch choices are environmentally friendly.

Hamster Wheel Exhibit

- Locate the large purple hamster wheel.
- Nominate 1 person to run in the wheel. Watch the green weight to the left of the wheel. What happens to the weight as the person is running?

- When the weight reaches the top, tell the person to stop running and get out of the wheel. Gather around the button found on the right side of the wheel.
- Push the button. Watch the weight fall and the electricity generated as the weight falls.
- Did you notice how much energy your friend had to use to make that small amount of electricity? Imagine if you had to run in a hamster wheel to generate enough electricity to light your house!

Intelligent Lighting

- Have you noticed the lights turning on and off by themselves as you walk around the Discovery Center? The low energy fluorescent lights are controlled by motion sensors that turn the lights off when no one is in the area.
- Look around the Discovery Center ceiling and find one of the motion sensors. *Hint:* you can find one in the High Wire Bike area. *Challenge:* look for more motion sensors that control the lights. How many can you find?



Light bulb energy use

- Find the Light Bulb exhibit, and follow the directions below to test how much electricity four different types of light bulbs use.