The Environmental Review

The Environmental Review is an essential tool for understanding the current environmental situation in your school. It will provide the basis of your Eco-Action Plan.

Why do an Environmental Review?

Before you can begin to make improvements to your school, you need to know what the current environmental situation is. The Eco-Schools USA Environmental Review checklist can help to identify areas for further study, identify specific improvements, and as well identify areas that require little or no improvement. This review will help you determine, for example, how much waste the school sends to the landfill and/or how much (if any) is recycled.

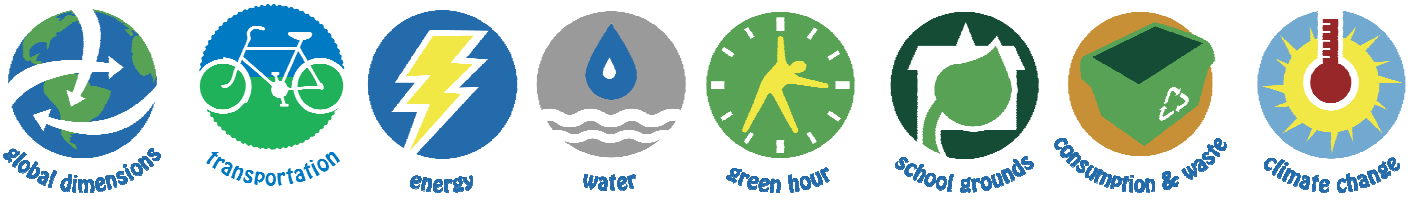
The results of your Environmental Review will inform your Eco-Action Plan. Once you have determined what aspects need to be addressed, you can establish priorities and set realistic targets to measure your success.

Although you may want to focus on one specific Pathway such as Energy or Water, a comprehensive Environmental Review will provide a complete environmental picture of your school and ensure that no significant areas are overlooked.

How to conduct the review?

The Eco-Action Team should be responsible for determining a strategy for implementing your Environmental Review. The Eco-Action Team should work hard to include and keep the whole school informed about the process. It is particularly essential that students play a primary role in this environmental review. Don't forget that your greater school community is full of great resource specialists that can also, if asked, help with the review.

The following are sample Environmental Reviews/Audits for the eight Eco-Schools USA Pathways:



Eco-Schools USA Global Dimensions Audit

Learning Objectives

- To investigate what actions the school has taken to incorporate a global understanding into its curriculum.

Curriculum Links

Citizenship, Geography, Social Studies

Eco-Schools USA Pathway

Global Dimensions

Do students consider how actions taken within the school affect people and the environment locally and globally?

☐ Yes ☐ No

If so, please give examples:

School Action	Local Effect	Global Effect

Of the Eco-Schools topics that you may have looked at in the past, have you explored how these issues might be approached in other parts of the world?

☐ Yes ☐ No

If so, please give examples:

Eco-Schools topic	Location(s) looked at

Have the students had an opportunity to interact with students living in other parts of the country and around the world?	☐ Yes	☐ No
Do students acknowledge and celebrate cultural differences among their own classmates?	☐ Yes	☐ No
Are the opportunities for considering global environmental issues maximized in the curriculum?	☐ Yes	☐ No
Does the school use materials from other organizations to enhance opportunities to learn about global issues?	☐ Yes	☐ No
Have students considered other global issues, such as:		
Human rights and ethics?	☐ Yes	☐ No
Fair Trade?	☐ Yes	☐ No
Conflict Resolution?	☐ Yes	☐ No
Has the school encouraged and provided opportunities for students to:		
Volunteer their time?	☐ Yes	☐ No
Learn about the political process?	☐ Yes	☐ No
Involve themselves in the community?	☐ Yes	☐ No
Any further comments on global issues:		

Adapted from Eco-Schools UK

Eco-Schools USA Transportation Audit

Learning Objectives

- To assess the current transportation practices and impacts at the school.
- To collect, record, map and interpret travel data.

Curriculum Links

Mathematics, Science, Social Studies, Citizenship

Eco-Schools USA Pathways

Transportation, Climate Change, Green Hour

We all use various forms of transportation to get to school. Some of us walk, some bike, some use public transportation or a private vehicles. Our transportation choices have an impact on the environment and our health. This section will help your Eco-Action Team assess the transportation choices people in your school are making and help you to identify alternatives. Please feel free to add or edit questions so that it makes sense for your school and local community.

Step 1. Have each classroom in your school complete the transportation assessment worksheet below.

Step 2. Total all classroom assessments from Step 1 for use in the Transportation Audit.

Part 1. Classroom Transportation Worksheet

Each classroom in your school should fill out this worksheet.

Classroom #:	**Teacher:**
Grade Level:	**Subject:**
Total # in Class (Students & Staff):	**Date of Assessment:**

1. How do students and staff get to school? (# of each)

Personal Vehicle	**Number**	**School Bus**	**Number**
Hybrid/Alternative	**Number**	**Public Bus**	**Number**
Car	**Number**	**Bike**	**Number**
Van/Minivan	**Number**	**Walk**	**Number**
Truck	**Number**	**Other**	**Number**
SUV	**Number**	**Other**	**Number**

2. How many of the students and staff carpool to school?

Note: A carpool must have 1 driver plus 2 or more students or 1 driver plus 1 or more adults.

	Number that Carpool	Convert these numbers to percentages
Students		
Staff		

Part 2. School Transportation Totals

To answer questions 1 and 2, total all the classroom worksheets from Part 1. Then answer the remaining questions.

1. How do students and staff get to school? (Convert the totals to percentages.)

Personal Vehicle	%	School Bus	%
Hybrid/Alternative	%	Public Bus	%
Car	%	Bike	%
Van/Minivan	%	Walk	%
Truck	%	Other	%
SUV	%	Other	%

2. Approximately what percent of students and staff carpool to school?

Note: A carpool must have 1 driver plus 2 or more students or 1 driver plus 1 or more adults.

	Percentage that Carpool
Students	
Staff	

3. Approximately how many buses drop off students at your school during the day?

Time of Day	Number of Buses
Before School	
During School (kindergarten or special programs	
After School	

4. Do your buses idle their engines for longer than 3 minutes while waiting for students? ☐ Yes ☐ No

5. Does your school/district use bio-diesel for any of its cars, trucks, and buses? ☐ Yes ☐ No

6. Besides buses, what other types of vehicles does your school own or use? What is their average gas mileage?

Type of Vehicle	Number	Use	Average Gas Mileage
Large car			
Mid-sized car			
Economy car			
Hybrid			
Electric			
Van			
Truck			
Other			

7. Does your school community participate in a *Safe Routes to School Partnership*? ☐ Yes ☐ No

8. Does your school allow students to bike to school?	☐ **Yes** ☐ **No**
9. Does your school provide bicycle racks and a safe place to store bikes for students and staff?	☐ **Yes** ☐ **No**
10. Does your school have a "Walking School Bus" program?	☐ **Yes** ☐ **No**
11. Which of the following options are available for students and staff to get to and from school?	
Sidewalks	☐ **Yes** ☐ **No**
Bike Paths	☐ **Yes** ☐ **No**
Bike Lanes	☐ **Yes** ☐ **No**
Public Transportation	☐ **Yes** ☐ **No**
School Buses	☐ **Yes** ☐ **No**
Other	☐ **Yes** ☐ **No**
12. Are sidewalks and bike paths safe and accessible for all?	☐ **Yes** ☐ **No**
13. Does your school curriculum include transportation-related topics including health, safety, and environmental impacts? **If yes, which subjects or courses and at what grade levels?**	☐ **Yes** ☐ **No**

Subject / Course	Grade Levels

14. Does your school sponsor or participate in any programs to encourage carpooling, use of public transportation, or non-vehicular transportation to and from school? If yes, describe the program **Carpooling:_____** **Public Transportation:_____** **Non-Vehicular:_____** **Other:_____**	☐ **Yes** ☐ **No** ☐ **Yes** ☐ **No** ☐ **Yes** ☐ **No** ☐ **Yes** ☐ **No**

Eco-Schools USA Energy Audit

Learning Objectives

- To investigate energy use within the school and identify inefficiency.
- To record and analyze energy data.

Curriculum Links

Mathematics, Science, Citizenship, Language Arts

Eco-Schools USA Pathways

Energy, Climate Change

Use these worksheets to help you to complete an Energy Audit. You will use the data you collect to create your Energy Action Plan.

The Energy Auditing documents are provided courtesy of Educational Dividends. Educational Dividends developed the curriculum for Student Power and the award-winning EnergyNet Project (www.energynet.net). Educational Dividends also manages the EnergyNet Project.

There are a number of different audit forms: Energy Lifestyles; Building Envelope; Foundation; Lighting; HVAC; and Equipment. You may need the assistance of your school facility manager or building engineer to answer some of these questions or help you to conduct the audit.

Step 1. Go to each room (classrooms, office, gym, lunchroom, etc.) and answer the questions below for each type of energy audit.

Step 2. Utilize the "Data Driven Decisions" forms to keep track of the number of rooms visited and the total number of each type of energy-wasting behaviors reported.

It may be helpful to determine the percentages associated with each energy-wasting behavior. This would be done by dividing the total number of occurrences for each energy-wasting behavior by the total number of rooms visited. *For example, if 60 rooms had "Lights On But No One's Home" and the school has 120 rooms, then 60 divided by 120 = 50%.*

Step 3. Use the "Synopsis of Audit Results" to help to organize your findings.

Eco-Schools USA Energy Audit

ENERGY LIFESTYLES AUDIT FORM

Room Number:	
Purpose:	
Side of Building (North, South East, West):	

We visited this room during the *(circle whichever applies):*	☐ a.m. ☐ p.m.
We found the room uncomfortably *(circle only if one applies)*:	☐ hot ☐ cold
We believe this is due to: *(Please be as specific as possible.)*	☐ temperature settings ☐ doors and/or windows open or leaking ☐ blinds not closed ☐ other: _____ ☐ other: _____
We found unnecessary: *(Please be as specific as possible.)*	☐ lights left on ☐ equipment left on ☐ water left on ☐ other: _____ ☐ other: _____
We found the following maintenance problems:	☐ broken windows ☐ cracks ☐ dripping faucets ☐ lights left on ☐ equipment left on ☐ water left on ☐ other: _____ ☐ other: _____
Additional Comments:	
Signed by Auditors:	
Audit Date:	

Credit: Educational Dividends

Eco-Schools USA Energy Audit

BUILDING ENVELOPE AUDIT FORM

Room Number or Location:	
Purpose:	
Side of Building (North, South East, West):	

WINDOWS

From the inside, examine all outside windows for cracks and leaks.	
Are the seals between the frame and the pane tight?	☐ Yes ☐ No
Can they be opened and closed?	☐ Yes ☐ No
Measure the windows:	Size: _____
Window Covering *(Indicate what window covering, if any, is used.)*	Window Covering: _____

OUTLETS

Indicate the number of light switches and electric outlets on any outside walls.	Number of light switches: _____ Number of electric outlets: _____
Do they have insulating outlet gaskets?	☐ Yes ☐ No

DOORS

Examine all outside doors for cracks and leaks.	
Is the seal around the door and the door frame tight?	☐ Yes ☐ No
Can you see light around the frame?	☐ Yes ☐ No
Note the number and condition of all outside doors.	Number of outside doors: _____ Condition of outside doors: _____

FOUNDATION:

From the outside, look at the foundation of the building.	
Are there any visible cracks?	☐ Yes ☐ No
Are there areas where plumbing or wiring is going into the building?	☐ Yes ☐ No

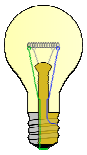
TREES/SHADING:	
If there are trees around the building, measure the distance from each tree to the building, and draw the location of the trees as they relate to the building wall. Use the space to the right for this drawing. Identify the type and approximate height of tree (evergreen or deciduous).	
Signed by Auditors:	
Audit Date:	

Credit: Educational Dividends

Eco-Schools USA Energy Audit

LIGHTING AUDIT FORM

Room Number or Location:	
Purpose:	
Side of Building (North, South East, West):	

DESCRIBE LAMPS USED:		
Incandescent: 	Number Used: _____ Type of Fixture: _____ Timer: ☐ Yes ☐ No	Watts per Lamp: _____ Task: _____
Compact Fluorescent: 	Number Used: _____ Type of Fixture: _____ Timer: ☐ Yes ☐ No	Watts per Lamp: _____ Task: _____
Fluorescent Tubes:		
T12 (Size is written on tube) 	Number Used: _____ Type of Fixture: _____ Timer: ☐ Yes ☐ No	Watts per Lamp: _____ Task: _____
T8 **(Thinner than T12)** 	Number Used: _____ Type of Fixture: _____ Timer: ☐ Yes ☐ No	Watts per Lamp: _____ Task: _____
LED 	Number Used: _____ Type of Fixture: _____ Timer: ☐ Yes ☐ No	Watts per Lamp: _____ Task: _____
Other:	Number Used: _____ Type of Fixture: _____ Timer: ☐ Yes ☐ No	Watts per Lamp: _____ Task: _____
Total Wattage of Room: ***NOTE: Complete this AFTER the audit.***	_____ Watts	

Outside / Gym Lights:		
Mercury Vapor 	Number Used: _____ Type of Fixture: _____ Timer: ☐ Yes ☐ No	Watts per Lamp: _____ Task: _____
Metal Halide 	Number Used: _____ Type of Fixture: _____ Timer: ☐ Yes ☐ No	Watts per Lamp: _____ Task: _____
Sodium 	Number Used: _____ Type of Fixture: _____ Timer: ☐ Yes ☐ No	Watts per Lamp: _____ Task: _____
Note: In many cases, you will need to consult the building engineer.		
Signed by Auditors:		
Audit Date:		

Credit: Educational Dividends

Eco-Schools USA Energy Audit

HVAC AUDIT FORM

Room Number or Location:	
Purpose:	
Side of Building (North, South East, West):	
Was there a thermostat in the room that could be adjusted by occupants?	☐ Yes ☐ No
If yes, what was the thermostat setting?	_____°F
Temperature of room?	_____°F
Was the room comfortable?	☐ Yes ☐ No
If no, was it too hot, too cold, and/or drafty?	☐ Too Hot ☐ Too Cold ☐ Drafty
Was any water dripping?	☐ Yes ☐ No
If yes, from what location? ***Note: Use the Water Audit from Eco-Schools USA for washrooms, kitchens, locker rooms, and other high water use areas.***	_____
Maintenance Issues: ***Note: Indicate any known maintenance issues. Talk to your facilities manager or building engineer about this.***	_____ _____ _____ _____ _____
Additional Comments:	
Signed by Auditors:	
Audit Date:	

Eco-Schools USA Energy Audit

HVAC AUDIT FORM

SYSTEM INFORMATION:

Heating:

What fuel source provides heat for the building?	☐ Natural Gas ☐ Electric ☐ Propane ☐ Solar ☐ Wind Power ☐ Biofuel ☐ Coal ☐ Other: _____
What equipment is used to deliver that heat?	☐ Hot Water Boiler ☐ Steam Boiler ☐ Forced Air Furnace ☐ Other: _____
What is the age of the equipment?	Equipment Age: _____
If boiler, are pipes insulated?	☐ Yes ☐ No
Describe (or attach) the maintenance schedule including cleaning coils and filters and maintaining motors and pumps:	Maintenance Schedule Description:

Ducts:			
Does the building have ducts?	☐ Yes ☐ No		
If yes, were you able to inspect the ducts?	☐ Yes ☐ No		
If yes, were they insulated and sealed?	☐ Yes ☐ No		
Describe (or attach) the maintenance schedule for checking the ducts:	Maintenance Schedule Description:		
Cooling:			
What equipment is used to cool the building?	**Type**	**Model**	**Size**
Window Air Conditioners (indicate #)			
Central Air Conditioner			
Chiller			
Geothermal			
Describe (or attach) the maintenance schedule including cleaning coils and filters and maintaining motors and pumps:	Maintenance Schedule Description:		

Temperature:

How is the temperature controlled in the building:	☐ Central Control ☐ Room Controls ☐ Room Controls with Programmable Thermostats
In the cold months, what is the thermostat setting during the day?	_____ °F
In the cold months, what is the thermostat setting during the night?	_____ °F
If there is air conditioning, what is the thermostat setting during the day?	_____ °F
If there is air conditioning, what is the thermostat setting during the night?	_____ °F
How often are the thermostats calibrated?	☐ Weekly ☐ Monthly ☐ Bi-Monthly ☐ Quarterly ☐ Semi-Annually ☐ Annually

Domestic Hot Water:

What equipment provides domestic hot water for the building?

Equipment	Number	Size	Fuel Source	Brand/Model
Boiler				
Water Heater				
Other _____				

Describe (or attach) the maintenance schedule for the domestic hot water system:	Maintenance Schedule Description:

Note: For a complete water audit, please use the Eco-Schools USA Water Audit Forms

Additional Comments:	
Signed by Auditors:	
Audit Date:	

Credit: Educational Dividends

Eco-Schools USA Energy Audit

EQUIPMENT AUDIT FORM

Room Number or Location:	
Purpose:	
Side of Building (North, South East, West):	

Using the choices below, check the type of equipment found in the room. Estimate the number of hours each piece of equipment is used per day.

Note the watts and amps which can be found on the face plate. For refrigerators, note the brand and model number.

Equipment	Number (Quantity)	Hours Used Per Day	Watts	Amps
Computers				
Printers				
Copiers				
Radio/Stereo				
Television (Please note if it is a plasma screen.)				
DVD Players				
Coffee Pot				
Microwave				
Refrigerator Brand:_____ Model:_____				
Clock				
Other (Please describe): _____				
Other (Please describe): _____				

Other (Please describe): _____				
Other (Please describe): _____				
Total Wattage of Room: ***NOTE: Complete this AFTER the audit.***		_____ Watts		
Note: In many cases, you will need to consult the building engineer.				
Signed by Auditors:				
Audit Date:				

Credit: Educational Dividends

Eco-Schools USA Energy Audit

DATA DRIVEN DECISIONS

Data Driven Decisions:

Keep track of the total number of rooms visited and the total number of each type of energy wasting behaviors reported. For example, the note takers should indicate how many rooms had "Lights On, But No One's Home."

It may be helpful to determine the percentages associated with each energy-wasting behavior. This would be done by dividing the total number of occurrences for each behavior by the total number of rooms visited. For example, if 60 rooms had "Lights On, But No One's Home" and the school had 120 rooms, then 60 divided by 120 = 50%.

Lighting:

Lifestyles:

Building Envelope:

HVAC:	
Equipment:	
Additional Comments:	
Signed by Auditors:	
Audit Date:	

Credit: Educational Dividends

Eco-Schools USA Energy Audit

SYNOPSIS OF AUDIT RESULTS

The following form will help you to organize your thoughts and the data you collected.

We visited _____ (#) rooms on the _____ side of the _____ (1st, 2nd, etc.) floor.

Note: For large buildings, you may want to use a separate form for each floor and/or each side of the building.

Lighting:

We found _____ (#) of incandescent lamps. These should be replaced by compact fluorescent bulbs.

We found _____ (#) of T12 fluorescent lamps with magnetic / electronic ballasts. These should be replaced with T8 or T5 lamps with electronic ballasts.

Our exit lights were: _____ (Type: LED or Incandescent). There were _____ (#) of exit lights.

The lights in our gym were _____ (Type) and our outside lights were _____ (Type).
The outside lights ☐ were ☐ were not on a timer.

Daylighting Opportunities:

Other:

Lifestyles:

We found _____ (#) of rooms with lights left on when no one was in the room.

We found _____ (#) of rooms with equipment left on when no one was in the room.

We found _____ (#) of rooms with dripping water.

We found the following significant comfort issues:

We found the following maintenance issues:

Building Envelope:

We found _____ (#) of leaky windows that should be caulked.

We found _____ (#) of outside doors with gaps that should be weatherstripped.

We found _____ (#) of foundation cracks or gaps that should be fixed.

We found _____ (#) of outlet gaskets that should be insulated.

Other:

HVAC:

Comments about thermostat settings:

Comments about overall comfort:

Comments about maintenance schedules:

Other:

Equipment:

We found _____ % of non-EnergyStar®/inefficient equipment.

We found _____ (#) pieces of equipment left on unnecessarily.

Opportunities for timers:

Credit: Educational Dividends

Eco-Schools USA Water Audit

Learning Objectives

- To investigate water use within the school and identify inefficiency.
- To record and analyze water data.

Curriculum Links

English, Science, Geography, Citizenship

Eco-Schools USA Pathways

Water, School Grounds, Energy, Climate Change

Use this worksheet to help you to complete a Water Audit. You will use the data you collect to create your Water Action Plan.

This audit is adapted from the *Be Water Wise!* School Water Audit. It was developed by the National Environmental Education Foundation (NEEF) as a tool for students to investigate water use inside and outside of the school building and to work to improve water conservation at school. Many of the questions will require the assistance of school staff, including custodians and facility managers.

A Teacher's Guide for the audit is available at www.eeweek.org/water_wise/water_audit. Also available is a Report Outline, which you can use to develop a report of the findings to be presented to the school community.

Eco-Schools USA Water Audit Worksheet

School Name:	Date of Assessment:

Conducted By:

A. Water Use

The questions in this section ask about water use at your school. To answer them, you may need the assistance of the school custodian or facility manager.

What is the source of your school's water supply?	☐ School has own well ☐ Municipal water supply
If your water comes from a municipal supply, what is its source?	☐ Lake or river (surface water) ☐ Well (aquifer/groundwater)
If your water comes from a municipal supply, what did your school pay last year for water?	$_____
How much does the water company charge per unit of water?	$_____ per _____
Based on water bills or in-school meters, how much water did your school use last year? (1 cubic foot = 7.48 gallons; provide both)	_____ gallons _____cubic feet

If your drinking water comes from a private well, who does the water sampling?	
Is that person a certified operator?	☐ Yes ☐ No
If your drinking water comes from the school's private well, is it metered so that the amount used can be monitored?	☐ Yes ☐ No
Is your drinking water tested for chemical contaminants and bacteria? Chemical Contaminants Bacteria	☐ Yes ☐ No ☐ Yes ☐ No
What contaminants are sampled for? List them to the right.	
Does your water contain fluoride?	☐ Yes ☐ No
If no, does your school have a fluoride rinse or tablet program?	☐ Yes ☐ No
Is all ice used for consumption made only from drinking water?	☐ Yes ☐ No
Where does water used in your school go?	☐ On-site septic system and drainage field ☐ Municipal sewer system. Name: _____

Does your school have a plan to deal with chemical spills that may travel down floor drains into the public sewerage system?	☐ Yes ☐ No
Does your school have a program to encourage frequent hand washing?	☐ Yes ☐ No
Does your school have time built into the schedule for washing hands prior to food consumption?	☐ Yes ☐ No
Does your school maintain adequate supplies for hand washing?	☐ Yes ☐ No
On average, how much water do the school's toilets use per flush?	☐ >3 gallons ☐ 2-3 gallons ☐ 1-2 gallons ☐ <1 gallon
How many hot water heaters does your school have?	_____ Number
What type(s) of energy is used to heat the school's hot water?	☐ Natural gas ☐ Propane ☐ Electricity Other: _____
Are there any booster heaters located near appliances that use a lot of hot water?	☐ Yes ☐ No
Does your school have any "on demand" hot water systems (in which water is heated as it is being used, rather than stored hot)?	☐ Yes ☐ No
If yes, where are they located?	

Are there any re-circulation pumps for rooms that are located a long distance from the water heater?	☐ Yes ☐ No
Does your school have a swimming pool?	☐ Yes ☐ No
If you answered yes, is a pool cover used? (Important because pool covers limit evaporation)	☐ Yes ☐ No
Does your school have a cooling tower? *Cooling Towers are usually found outside or on the roof next to the Chiller (HVAC) Room. Cooling towers extract heat from water that has been used to cool the building. This is an example of what a cooling tower may look like.* 	☐ Yes ☐ No

The School Building Audit

Complete the chart on the following page as you investigate water-using devices throughout the school building. Add rows if needed in order to collect information on all the rooms in your school building.

- On the chart, write the number of each device found at each location.
- After that number, indicate the number that are leaking in parentheses. Example: If bathroom 1 has 10 faucets and two are leaking, write 10(2).
- For each leak you identify, calculate the amount of water wasted per unit time. Time how long it takes for a set volume of water to drip into a beaker, and then calculate how much water is wasted per day due to the leak.

These notations are used in the Sample Water Audit:

A = Automatic (equipment that must be turned on manually but turns off automatically)
S = Sensors (equipment that turns on and off based on the movement of a person)
M = Manual (equipment that must be physically be turned on and off by user)
GPM = Gallons per minute (faucets and showers)
GPF = Gallons per flush (urinals and toilets)

School Building

Audit Chart

Location	Room Number	Faucets				Toilets			Urinals			Showers	
		A	S	M	GPM	S	M	GPF	S	M	GPF	M	GPM
Classroom 1													
Classroom 2													
Classroom 3													
Classroom 4													
Classroom 5													
Classroom 6													
Classroom 7													
Bathroom 1													
Bathroom 2													
Bathroom 3													
Bathroom 4													
Locker Room 1													
Locker Room 2													
Nurses Office													
Custodial 1													
Custodial 2													
Teacher Prep													
Pool													
Other:													
Other:													
Other:													

Eco-Schools USA School Grounds Audit
(Outdoor Water Use)

In this section you will collect data about outdoor water use on the school property. Again, you may need the assistance of the custodian or facility manager. Many of these questions will be most easily answered shortly after watering. Plan to collect this data soon after the sprinklers have stopped.

How many water faucets are located outside of the school building?	_____ Number
How many outdoor water faucets are leaking?	_____ Number
How many outdoor faucets have been secured so that only school staff may turn them on or off?	_____ Number
Does your school building have gutters and/or downspouts?	☐ Yes ☐ No
Does your school have a rain collection system (such as rain barrels)?	☐ Yes ☐ No
How many water meters are there at the school? *Water meters measure and record the amount of water flowing through them at any moment. They may be found buried outside the building or indoors where the water line comes into the building.*	_____ Number
Do the meters record water used both indoors and outdoors?	☐ Yes ☐ No
If yes, what do you think is the ratio of water used outdoors vs. water used indoors?	_____

Do you see dry or soggy patches in the grass, in flowerbeds or in other landscaped areas?	☐ Yes ☐ No
If yes, describe the location and what you see. Take photographs or sketch the area.	
Do you see puddles or standing water resulting from irrigation runoff?	☐ Yes ☐ No
If yes, describe the location and what you see.	
Do you see moss growing or slippery-wet spots on any paved areas?	☐ Yes ☐ No
If yes, describe the location and what you see. Take photographs or sketch the area.	
Do you see cracks in the pavement, uneven sidewalks where water runs off or other water damage in the pavement or parking lots?	☐ Yes ☐ No
If yes, describe the location and what you see. Take photographs or sketch the area.	
Do you see lots of weeds in the landscape?	☐ Yes ☐ No
If yes, describe the location and what you see. Take photographs or sketch the area.	
Are there slopes in the landscape?	☐ Yes ☐ No

If yes, complete the following: Describe the location and what you see. Take photographs or sketch the area.	
Do you see dirt running off the landscape due to slopes?	☐ Yes ☐ No
Does school staff use hoses to wash sidewalks and parking areas?	☐ Yes ☐ No
Where does water that runs off the school's roof, parking lots and grounds go?	☐ Storm Drain ☐ Recessed grassy areas ☐ Rain Garden ☐ Retention pond ☐ Drainage ditch ☐ Natural pond, stream or wetland
Does your school have a plan for managing and reducing runoff from school grounds?	☐ Yes ☐ No
Does your school have any outdoor fountains or artificial waterfalls?	☐ Yes ☐ No
If yes, answer the following: Are they turned off in the evening? Are they turned off in very hot weather? Do they re-circulate water? Who maintains them?	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No _____
Curriculum and Community	
Is water conservation part of your school's curriculum?	☐ Yes ☐ No
If yes, in what grade(s) is it taught?	

Has your school staff recently participated in any staff development programs for water education?	☐ Yes ☐ No
Does your school participate in any water projects that benefit the community?	☐ Yes ☐ No
If yes, what are they?	
Some water management facilities can be used as educational resources. Which are found in your community?	
Pumping station	☐ Yes ☐ No Location: _____
Drinking water treatment plant	☐ Yes ☐ No Location: _____
Water tower	☐ Yes ☐ No Location: _____
Wastewater treatment plant	☐ Yes ☐ No Location: _____

Eco-Schools USA Green Hour Audit

Learning Objectives

- To assess the current amount of time staff and students spend outside ("Green Hours") both during and after school.
- To collect and record data about outdoor time.

Curriculum Links

Mathematics, Science, Social Studies, Citizenship, Physical Education

Eco-Schools USA Pathways

Green Hour, School Grounds, Global Dimensions

School_____**Date**_____**Time**_____

Names of Reviewers_____

Use this worksheet to help you prepare a Green Hour Action Plan.

Step 1: Have students and teachers answer the questions below. If your school population is *more* than 500 students go to at least 50% of your school's classrooms and answer the questions below.

Step 2: After you complete the Classroom Assessment, complete the School Assessment.

Eco-Schools USA Green Hour Classroom Assessment Worksheet

Classroom #:	**Teacher:**
Grade Level:	**Subject:**
Total # in Class (Students & Staff):	**Date of Assessment:**

Estimate how many hours per week students and staff spend outside doing school-related activities:

Outdoor Recess:	_____ hrs.
Outdoor physical education:	_____ hrs.
Walking to/from school:	_____ hrs.
Classes outside:	_____ hrs.
Outdoor field trips (zoo, nature center, etc):	_____ hrs.
Outdoor sports practice:	_____ hrs.
After-school outdoor activities (school-sponsored, not sports teams):	_____ hrs.
Additional time spent working in the schoolyard habitat or taking care of the school's gardens:	_____ hrs.
Other (please describe, in addition to # of hrs.):	_____ hrs.

Estimate how many hours per week students and staff spend outside when they are not at school:	
Dog walking:	_____ hrs.
Outside jobs:	_____ hrs.
Playground time:	_____ hrs.
Park time:	_____ hrs.
Yard work:	_____ hrs.
Walking to do errands:	_____ hrs.
Family walks:	_____ hrs.
Hanging out in the backyard/neighborhood:	_____ hrs
After-school outdoor activities/sports (not school-sponsored):	_____ hrs.
Other (please describe, in addition to # of hrs.):	_____ hrs.

Eco-Schools USA Green Hour School Assessment

Step 1: Have each classroom in your school complete the Green Hour Classroom Assessment Worksheet

Step 2: Total all of the classroom assessments from Step 1 for #1 and #2 in this section.

Calculate the <u>average</u> amount of time per week students and staff spend outside doing school-related activities:	
Outdoor Recess:	_____ hrs.
Outdoor physical education:	_____ hrs.
Walking to/from school:	_____ hrs.
Classes outside:	_____ hrs.
Outdoor field trips (zoo, nature center, etc):	_____ hrs.
Outdoor sports practice:	_____ hrs.
After-school outdoor activities (school-sponsored, not sports teams):	_____ hrs.
Additional time spent working in the schoolyard habitat or taking care of the school's gardens (planting, weeding and watering):	_____ hrs.
Other (please describe, in addition to hrs.):	_____ hrs.

2. Calculate the <u>average</u> amount of time per week students and staff spend outside doing when they are not at school:	
Dog walking:	_____ hrs.
Outside jobs:	_____ hrs.
Playground time:	_____ hrs.
Park time:	_____ hrs.
After-school outdoor activities/sports (not school-sponsored):	_____ hrs.
Yard work:	_____ hrs.
Walking to do errands:	_____ hrs.
Family walks:	_____ hrs
Hanging out in the backyard/neighborhood:	_____ hrs.
Other (please describe, in addition to # of hrs.):	_____ hrs.
How many classes does your school offer that have an outdoor component of the curriculum?	
Please list:	

Does your school have a student-monitored garden on school property?	☐ Yes ☐ No
Does your school have outdoor space that is suitable for holding class outdoors?	☐ Yes ☐ No
How many school-sponsored outdoor field trips does your school host per year?	_____
Has the school implemented wellness policies that address nutrition and physical activity?	☐ Yes ☐ No
Does the school have a walk/bike to school program?	☐ Yes ☐ No

Eco-Schools USA School Grounds Audit

Learning Objectives

- To investigate school grounds use and identify ways to green the space.
- To record and analyze school grounds data.

Curriculum Links

English, Science, Mathematics, Geography, Citizenship

Eco-Schools USA Pathways

School Grounds, Water, Energy, Climate Change, Green Hour

The sample School Grounds Audit was developed as a tool for students to investigate school ground use and to be used as a basis for improving the habitat at school. Many of the questions will require the assistance of school staff, including facility managers.

A full Schoolyard Habitat How-To Guide is available at *http://www.nwf.org/schoolyard/howtoguide.cfm*

Eco-Schools USA School Grounds Audit

Does the school contain all four wildlife habitat requirements (food, water, shelter, places to raise young?)	☐ Yes ☐ No
Are the school grounds free from herbicides or pesticides?	☐ Yes ☐ No
Are there plenty of things for climbing and balancing on, and jumping and swinging from?	☐ Yes ☐ No
Are there quiet, shaded places to sit and talk?	☐ Yes ☐ No

Are there lots of different surfaces and materials to feel, touch and explore?	☐ Yes ☐ No
Are there murals, mosaics or other artworks?	☐ Yes ☐ No
Are there games painted on the playground?	☐ Yes ☐ No
Does the school have a pond or a marshy area?	☐ Yes ☐ No
Does the school have a log pile?	☐ Yes ☐ No
Does the school have a meadow?	☐ Yes ☐ No
Does the school have a hedgerow or shrubs?	☐ Yes ☐ No
Does the school have trees?	☐ Yes ☐ No
Does the school have bird boxes?	☐ Yes ☐ No
Does the school have a bird feeding station?	☐ Yes ☐ No
Are the school grounds used for learning and teaching?	☐ Yes ☐ No
Are native plants used in the school grounds?	☐ Yes ☐ No
Do the school grounds utilize drip irrigation?	☐ Yes ☐ No

Eco-Schools USA Consumption and Waste Audit

Learning Objectives

- To investigate categories of school waste.
- To learn sampling techniques to monitor waste volume.
- To record and analyze waste data.

Curriculum Links

Mathematics, Science, Citizenship

Eco-Schools USA Pathways

Consumption and Waste, Energy, Climate Change, Global Dimensions

The aim of the waste audit is to measure the weight and types of waste produced by your school in one day. It is an integral part of a school waste reduction campaign. Waste is collected, sorted and weighed by students, teachers and other helpers. The data collected will help you measure the effectiveness of your campaign. The audit should be carried out prior to the implementation of a school action plan to reduce waste and again afterward, in order to measure the reduction levels achieved.

This waste audit is adapted from www.recyclenow.org.

Eco-Schools USA Waste Audit Recording Sheet

Area of school	White paper (lbs)	Colored paper (lbs)	Card-board (lbs)	Plastics (lbs)	Metal (lbs)	Glass (lbs)	Food waste (lbs)	Other (lbs)	Total (area)
Example: Classroom 1	0.44 lbs	0.31 lbs	0.18 lbs	0.09 lbs	0 lbs	0 lbs	0.22 lbs	0.09 lbs	1.83 lbs
TOTALS									

Eco-Schools USA Waste Audit School Total Worksheet

Material	School Total (lbs) per day	School Total (lbs) per week (x 5 days)	School Total (lbs) per year (x 38 weeks)	%
White paper				
Colored paper				
Cardboard				
Plastics				
Metal				
Glass				
Food waste				
Other				
TOTAL				**100%**

Eco-Schools USA Climate Change Audit

Learning Objectives

- To have students quantify their own carbon footprints.
- To quantify the school's carbon footprint.
- To identify ways that students can reduce both their own footprint and their school's.
- To design and conduct an action project related to carbon emissions

Curriculum Links

Mathematics, Science, Social Studies, Government, Economics

Eco-Schools USA Pathways

Climate Change, Energy, Transportation, Water, Consumption and Waste

"Carbon footprint" is an expression that describes how much carbon dioxide a person (or entity such as a school) releases over time. Assessing your school's carbon footprint is a way to measure the impact your school's activities and behaviors have on the environment. The more energy, paper, and other supplies your school uses, the bigger your school's footprint or impact.

There are many different calculator tools available to help you measure your carbon footprint. These calculators can be very simple or very complex. Here is one way you could approach it.

1) **Personal Footprints.** To begin the process, have students use the calculator at Meet the Greens (www.meetthegreens.org/features/carbon-calculator.html) to determine their personal carbon footprint. When students have their results, review their footprint scores as a class and discuss which activities emit the most and least carbon. Have students think about specific actions they could take to reduce their own footprints.

2) **School Footprint.** Follow with a carbon audit of your school using the EPA's Climate Change Emission Calculator Kit (Climate Check)(www.epa.gov/climatechange/wycd/school.html). This calculator helps students to learn about climate change, estimate their school's greenhouse gas emissions and conceptualize ways to mitigate their footprint. The EPA also provides schools across the nation an opportunity to compare energy use through their Portfolio Manager. For additional carbon calculators, check out the Resources for this Pathway.

Also, check out NWF's Climate Classroom.org and the *An Inconvenient Truth* curriculum you'll find there. It includes lesson plans for exploring the science of the carbon cycle and investigating sources of carbon in students' daily lives.

Eco-Schools USA Climate Change Worksheet (Simple)

MeetTheGreens.org is a new kids' guide to looking after the planet. Kids can watch THE GREENS' cartoon adventures and discover related green games, news, downloads, action tips, links, and much more. This innovative, Web-only project comes from WGBH in Boston, the producer of shows like *ZOOM*, *ARTHUR*, *Frontline and NOVA*. The link for their individual carbon calculator is http://www.meetthegreens.org/features/carbon-calculator.html

Gather the data asked for below before logging your data online. The activity that accompanies this exercise can be found at www.climateclassroom.org

Transportation:

Transportation measures the GHG impacts of your car, public bus, school bus, and airplane travel and the amount of land converted to road areas as a result of your travel.

HOW DO YOU GET TO SCHOOL *(more than one can be checked)*	YES	NO
Car		
City bus		
School bus		
I walk or bike to school		
Have you flown in a plane in the last month? Yes no		
Do your parents ride their bikes to work?		

What you eat:

The food section measures the amount of CO_2, land, and water required to grow and transport the food you eat, as well as the amount of waste generated by eating in fast food restaurants or bringing your lunch to school in a disposable bag every day.

What Kind of Food Does Your Family Eat?	Just Vegetables (Vegan)		Eggs and Dairy (Vegetarian)		Everything	
How often do you eat at a fast food restaurant?	Never	Once a Week	Twice a Week	More Often		
How much soda do you drink?	0 Cups a Day	1 Cup a Day	2 Cups a Day	3 Cups a Day	4 Cups a Day	5 Cups a Day
Do you bring your lunch in a bag or lunch box?	Yes			No		

Home & School:

Calculates the CO_2 emissions from the energy you use to heat your home and provide you with hot water. It also measures the amount of land your building currently occupies, the amount of water your lifestyle requires, and the waste from your paper use.

What type of home do you live in?	**Apartment**			**House**		
How many people live in your home?	**One**	**Two**	**Three**	**Four**	**Five**	**More**
Do you have a summer house?	**Yes**			**No**		
Do you have a lawn?	**Yes**			**No**		
How often do you shower?	**Twice per day**	**Once per day**	**Once every 2 days**	**Once every 3 days**	**Don't believe in showers**	
How many loads of laundry do your parents do each week?	**One**	**Two**	**Three**	**Four**	**Five**	**More**
What type of clothes washer do you use?	**Top Loading**			**Front Loading**		
Do your parents dry your laundry outside?	**Yes**			**No**		
Do you brush your teeth once or twice a day?	**Once**			**Twice**		
Do you leave the tap on when brushing your teeth	**Yes**			**No**		
Do you own a swimming pool?	**Yes**			**No**		

What you use?

This category measures the CO2 emissions from the energy used to run appliances in your home – fridges, stoves, dishwashers, washers, dryers, computers, cell phones, TV's, DVD's, and VCRs. It also measures the environmental impact of your newspapers and magazines.

Do You Have These Things?	Yes	No
Cell phone(s)		
TV(s)		
DVD Players		
computers		
washing machine		
dishwasher		
refrigerators		
Do you turn off the lights when you leave a room?		
What do your light bulbs look like?	Fluorescent	Incandescent
Do your parents get a newspaper?		
Do your parents get a magazine?		

What you throw away?

This category measures the land required to dispose of your household garbage and the volume of GHGs released. It also includes some "wasteful" activities – such as leaving lights on when – and calculates the environmental impact from these activities.

How many bags of garbage do your parents throw out each week?	2 Bags	4 Bags	6 Bags	8 Bags	10 Bags	More
Do you recycle?	Yes			no		
Do you compost?	Yes			no		
Do you turn your computer off and not just put it to sleep when you're not using it?	Yes			no		

Eco-Schools USA Climate Change Worksheet
(More Complex)

A more comprehensive, school-oriented carbon footprint calculator can be found at EPA's Climate Change Emission Calculator Kit (Climate Check) website. (www.epa.gov/climatechange/wycd/school.html). This calculator helps students to learn about climate change, estimate their school's greenhouse gas emissions and conceptualize ways to mitigate their footprint. The EPA also provides schools across the nation an opportunity to compare energy use through their Portfolio Manager. A Microsoft Excel spreadsheet and accompanying student manual can be found at this link. A sample of the data needed is shown below.

Gather the data needed before logging your data online.

Stationary Devices

The following stationary devices are used in our school (use the table to the right for the device types, fuel types, and units used in the kit.

DEVICE TYPE
Boiler
Heater
Generator
Other

FUEL TYPES	UNITS
Coal	Metric Tons
Natural Gas	Cubic Feet
Propane	Liters
Gasoline	Liters
Diesel Fuel	Liters
Fuel Oil	Liters
Kerosene	Liters

Device Name	Device Type	Type of Fuel	Units	Quantity of Fuel

Electricity & Steam

Our school's electricity supplier is:	Name:
The amount of electricity our school purchased during the inventory year was:	_____ kilowatt hours (kWh)
The amount of steam our school purchased during the inventory year was: *(Purchased steam can be reported in any one of the units listed to the right.)*	_____ Btu _____ lbs _____ cf

The type and percent fuel mix used to produce this steam is:	Fuel Mix (%) _____ Coal _____ Natural Gas _____ Propane _____ Gasoline _____ Diesel Fuel _____ Fuel Oil _____ Kerosene
Mobile	
The number of commuter vehicles at our school is:	_____ Vehicles
The average commuting distance of these vehicles is:	_____ Miles
The fuel consumed by vehicles owned by our school is: **GASOLINE:** Cars Trucks, Vans, & SUVs Buses **DIESEL:** Cars Trucks, Vans, & SUVs Buses	 _____ Gallons _____ Gallons _____ Gallons _____ Gallons _____ Gallons _____ Gallons
Waste	
The total amount of waste our school sent to landfill during the inventory year was:	_____ kilograms
Or: The volume of each dumpster and number of times our school sent waste to the landfill during the inventory year:	Volume _____ cubic meters _____ cubic meters # of Times Dumpster is Emptied Each Year _____ times _____ times
Or: The average individual's annual waste disposal and the percent disposed at our school is:	_____ kg/year _____ percent (disposed at school)
Does the landfill practice methane flaring?	☐Yes ☐No
Wastewater	

The amount of wastewater treated from our school is:	_____ gallons
Does the wastewater treatment plant practice methane flaring?	☐Yes ☐No

REFRIGERATION & AC

The type and amount of refrigeration and air conditioning units using HFC-134a and R-410a at our school is:

Type	# of units using HFC-134a	Charge Size (kg)	# of units using R-410A	Charge Size (kg)
Refrigerated Appliances				
Air Conditioning				
Window Units				
Small Commercial Unitary				
Large Commercial Unitary				
Packaged Terminal A/C				

The type of vehicle and percent use of the following vehicles per year at our school:

Type	# of Vehicles	Vehicle Use (%)
Cars		
Trucks/SUVs		
Buses in School District		

Land Management

Fertilizer:

The type and amount of fertilizer applied in one year and the nitrogen content of these fertilizers is:

Type	Amount Applied (kg)	Synthetic Fertilizer Nitrogen Content (%)
Synthetic		
Organic		
Manure		

Non-Road:

The type and amount of fuel consumed by non-road equipment (i.e., backhoes, lawnmowers, tractors, leaf blowers, and chain saws).

Gasoline: _____gallons

Diesel: _____gallons

Forestry:

The type, age, and amount of trees located on school property:

Tree Type	Age of Trees	# of Trees