Water Audit

Eco-Schools USA Water Audit

Eco-Schools USA
eco-schoolsusa.org
NATIONAL WILDLIFE FEDERATION

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.

You will want to keep the data in this table handy, as you will need to report this information when you apply for an Eco-Schools USA award.

1) On average, how much has your school's water usage decreased per year? (Gather this information by comparing the school's monthly water bills.)	Pending Research _____ **gallons**
2) What's the name of your local watershed? Roaring River	☐ Yes ☐ No

IMPORTANT NOTE As you continue to make progress don't forget to update your metrics on your dashboard.

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 a facilities manager.

What is the source of your school's water supply? Newark Ave.	☐ School has own well ☒ Municipal water supply
If your water comes from a municipal supply, what is its source? Passaic River	☒ 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?	$ _____ X NA
How much does the water company charge per unit of water?	$ 0.65 per gallon
Based on water bill or in-school meters, how much water did your school use last year? (1 cubic foot = 7.48 gallons – provide both)	179325 gallons 2400 cubic feet
If your drinking water comes from a private well, who does the water sampling?	X NA
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
Where does water used in your school go?	☐ On-site septic system and drainage field ☒ Municipal sewer system
Does your school have a plan to deal with chemical spills that may travel down floor drains into the public sewage system?	☐ 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 you school have?	One Tank
What type 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? If yes, where are they located?	☒ Yes ☐ No
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, found on page 5, write the number of each device found at each location.
- After that number, indicate the number that is 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)

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2) What's the name of your local watershed?	☐ Yes ☐ No

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How many hot water heaters does you school have?	
What type 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? If yes, where are they located?	☐ Yes ☐ No
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

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Location	Room Number	Faucets				Toilets			Urinals			Showers	
		A	S	M	GPM	S	M	GPF	S	M	GPF	M	GPM
Classroom 1	208			✓	1 1/3		✓	3.8L					
Classroom 2	212			✓	4		✓	3.8L					
Classroom 3	108	✓			1 1/2		✓	3.8L					
Classroom 4	109	✓			1 3/4		✓	3.8L					
Classroom 5	209			✓	8		✓	3.8L					
Classroom 6	211			✓	3/4		✓	3.8L					
Classroom 7	213	✓			1/4		✓	3.8L					
Bathroom 1	3rd (G) Floor	✓			1 1/2		✓	3.8L					
Bathroom 2	2nd (G) Floor			✓	2		✓	3.8L					
Bathroom 3	3rd (G) Floor			✓	2		✓	3.8L					
Bathroom 4	2nd (G) Floor			✓	1		✓	3.8L					
Locker Room 1	105	✓			1 1/2		✓	3.8L					
Locker Room 2	107			✓	1		✓	3.8L					
Nurses Office													
Custodial 1				✓	4 1/2		✓	3.8L					
Custodial 2													
Teacher Prep													
Pool													
Other:													
Other:													
Other:													