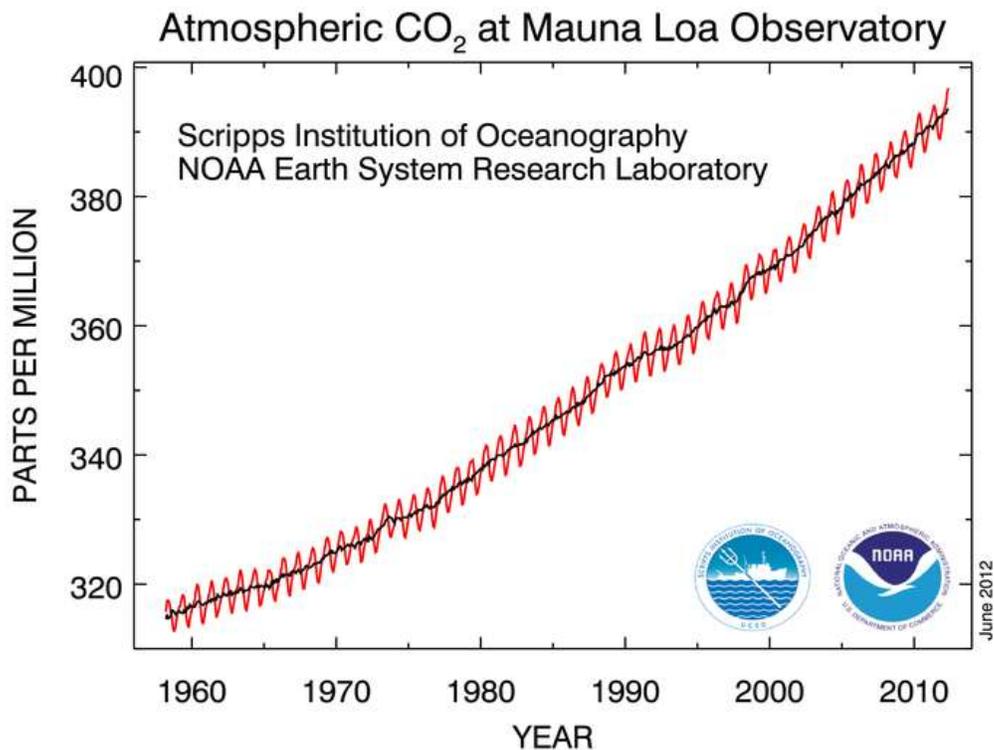


# A Companion Guidebook to National Wildlife Federation's Curriculum: *Energy and Climate Change*



*Links to our Past, Present, and Future*



*Special thanks to those who worked to make this opportunity possible.*

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## I. Guidebook Introduction

The guidebook is designed to assist those persons interested in working to address energy and climate change at their school through the Eco-Schools USA framework. Any adult who is a part of the school community can register the school as an Eco-School, school administrator, teacher, PTA member, facilities manager, etc. To register as an Eco-School go to [www.eco-schoolsusa.org](http://www.eco-schoolsusa.org) and click on the “register” tab across the top.

The National Wildlife Federation has over forty years of education experience with a rich, diverse, and strong connection to wildlife and wild places. Our mission, to inspire Americans to protect wildlife for our children’s future and our focusing on finding solutions to the climate crisis, turning inside kids out, and safeguarding America’s wildlife and wild places, and one way we work to reach our goals is through our nation’s schools; whether public, private, home, or charter.

Our nation’s young people are the problem solvers of the future and they will continue our great work in the not so distant future. Use this guidebook as a tool to engage and motivate students, educators, parents, and the entire school community in moving toward a school that has a lower carbon footprint, is more energy efficient, and where its student’s actions, no matter how small, make a huge difference!

## II. Energy and Climate Change Overview

The United States is home to just 5 percent of the world’s population but consumes more than 20 percent of its energy. On average, a person in America uses 10 times more energy that a person in China and nearly 20 times more than a person in India. The nation’s school districts spend more than \$7.5 billion a year on energy. Schools are the largest energy consumer in many municipalities, but up to 30 percent of that energy is used inefficiently or unnecessarily wasting millions of dollars a year that could be better spent on student needs.

No longer is global warming something only facing future generations. Changes to our climate are being documented all across the planet today. People, animals, and plants are already feeling the heat. Average temperatures are rising in most places around the world, and the warming trend is very likely the result of human activities. Schools across the country and around the world are joining the movement to solve this urgent environmental issue.

National Wildlife Federation's climatologist Dr. Amanda Staudt has compiled state data that highlights how global warming is and will continue to affect your state along with information on clean energy solutions. <http://www.nwf.org/Global-Warming/In-Your-State.aspx>

Regional information from Global Climate Change Impacts on the United States, <http://globalchange.gov/> Houston is right on the cusp of the Great Plains and Southeast maps therefore looking at information contained in each will be insightful.

Great Plains-<http://globalchange.gov/images/cir/region-pdf/GreatPlainsFactSheet.pdf>

Southeast-<http://globalchange.gov/images/cir/region-pdf/SoutheastFactSheet.pdf>

### III. Service Learning

#### A. What is Service Learning?

Service Learning is a way in which students can apply the knowledge they have learned over the course of a unit in an authentic, real-life learning experience in their community. **Service learning is different from community service** in that the experiences students are involved in are clearly aligned with the curriculum and in most cases serve as a final assessment tool of what students have learned during the unit of study. Students should be able to demonstrate their understanding of content objectives, by incorporating them directly into the service learning project.

Service learning can be thought of as a **reciprocal** relationship between students and their community, however, community is defined as a school, town, etc, and where the learning process involves members of the community sharing their knowledge, and as an end –product, learning is shared back with the community.

Ideally, service learning projects should be facilitated by the teacher, but the students should be the driving force behind the selection, development and implementation of the project. An added benefit to service learning is the use of community resources and volunteers who can both help teachers facilitate the service learning process and help students reach their project goals and objectives.

## B. The Cool School Challenge and the Eco-Schools USA Carbon Calculator

The Cool School Challenge was developed in 2006 by the Puget Sound Clean Air Agency in collaboration with Redmond High School environmental science teacher Mike Town, and Puget Sound Energy's Powerful Choices for the Environment program.

Conceptually modeled after the U.S. Mayor's Climate Protection Agreement, the Cool School Challenge aims to motivate students, teachers, and school districts to reduce carbon dioxide and other greenhouse gas emissions. **In 2009 the program received a Clean Air Excellence Award from the U.S. EPA**, and in 2012 the program was transferred over to the National Wildlife Federation and incorporated into the Eco-Schools USA program.

Cool School Challenge engages students and teachers in practical strategies to reduce carbon dioxide (CO<sub>2</sub>) and other greenhouse gas emissions school-wide. Students challenge individual classrooms to reduce their carbon emissions over a set period of time, and utilize a carbon calculator to evaluate progress.

Best of all; because it's aligned to the Eco-Schools USA program, schools that complete the Challenge automatically qualify for a bronze level award through the Eco-Schools USA program!

To learn more about the **Cool School Challenge** and to access materials go to - <http://www.nwf.org/Global-Warming/School-Solutions/Eco-Schools-USA/Become-an-Eco-School/Cool-School-Challenge.aspx>

To access the **Carbon Calculator** go to - <http://www.nwf.org/Global-Warming/School-Solutions/Eco-Schools-USA/Become-an-Eco-School/Cool-School-Challenge/Materials.aspx>

## C. Student Actions

Providing students with the opportunity to make observations, gather data, think critically, communicate with their peers, and draw their own conclusions is only a part of the Eco-Schools program and only a part of what makes a great educator. Calling students to action no matter how small those actions may be, is powerful and allows students to see the fruits of their work and to know they can make a difference. Our focus is not on doom and gloom but on the positive impacts students can and do make. Below is a link to our student pages. Students may choose their age range and then select from one of the following tabs to the left –

- **Service Learning** allows students to apply what you are learning in the classroom to solve real-life problems.  
<http://www.nwf.org/Global-Warming/School-Solutions/Eco-Schools-USA/Student-Resources/Ages-11-14/Service-Learning.aspx>
- **Students in Action** is the place to go to find out what students are doing to improve the environment; read their stories for inspiration and then send in your own story to Eco-Schools USA.

#### IV. How To Fundraise

As you create an [Action Plan](#) to green your school, one important step is to determine the costs associated with each project on your list. You'll find that you can take many steps that will require little or no money to accomplish. However, more involved projects may require materials, labor, tools and other items for which you'll need a budget. How can your school cover these costs and make these worthwhile projects happen?

Here are some tips for finding the funds you need.

- **Take a Long Term View.** Will the changes you seek to make save money in the long term after an initial expenditure? This is true of many projects that conserve energy or water, cut down on waste, or reduce chemical inputs. If so, perhaps your administration will be able to incorporate the costs into the school's budget.
- **Connect with your Community.** Are you looking for native plants? Perhaps a nearby nursery will donate them. Do you need materials to build a compost bin? Why not ask your hometown hardware store? Wanting to make a switch to more efficient light bulbs? Find out if a local business would be willing to sponsor the project. You can acknowledge their support in a visible way, providing them with community recognition in return for their help.
- **Look for Volunteer Labor.** For any given school, there are teachers, staff, parents, and other community members with a wealth of expertise, both in their professions and their personal interests. Often you'll find that people are happy to share their talents to benefit the school and its students. Put out a call for help in your school newsletter, or make a personal call to someone who has the skills you need. Not only can this be a cost-effective way to get the job done, it's also a great way to involve the community in your Eco-Schools work.

- **Seek Grants.** Grants are certainly another way to raise funds. The application process can be time-consuming, but well worth it when you are successful and a “dream” project becomes possible. There are countless sources for grant funding, and you’ll need to do some homework to find the ones that best fit your situation. Here are some places to start:
  - **Local Sources.** Is there a community foundation that provides funding for worthy local projects? A corporate or family foundation that prioritizes your area? Starting close to home can be advantageous for many reasons.
  - **Online Directories.** A number of websites keep current listings of funding opportunities for education and school greening. Check out the following:
    - Grants Alert - <http://www.grantsalert.com/>
    - NAAEE’s EE-Linked - <http://eelink.net/pages/EE-Link+Introduction>
    - Greening Schools - [http://www.greeningschools.org/resources/funding\\_opportunities.cfm](http://www.greeningschools.org/resources/funding_opportunities.cfm)
    - Green Schools Initiative - <http://www.greenschools.net/section.php?id=28>
    - EPA Green Building - <http://www.epa.gov/greenbuilding/tools/funding.htm>
  - **The Eco-Schools e-newsletter.** New opportunities are constantly popping up. We highlight current grants, contests, and other funding sources in the monthly Eco-Schools e-news. If you aren’t yet on the mailing list, you can [sign up here](#) and [see past issues here](#). You can also connect with [Eco-Schools USA on Facebook](#) to be the first to hear about new opportunities.

## V. Getting the Community Engaged

Developing and maintaining critical partnerships is an important tool for the success of NWF’s Eco-Schools USA program. By identifying key organizations and programs on the ground and working to develop mutual goals and understandings, NWF is able to expand our reach to schools across the country, coordinate and provide better access for schools to resources, tools and programming and as well help to build capacity for both organization involved.

Within your school community there are many individuals and groups that support your school’s efforts to educate children. Below is a framework to guide you as you look for partners and form relationships that will help you reach the goals you’ve set forth for your school as you participate in the Eco-Schools USA program.

## A. Identify Potential Partners

### Administrators

Administrators set the atmosphere within a school and where many hats. They are responsible for:

- Academic progress of students
- Best practices for staff
- Professional development
- Professional Learning Communities
- Safety of students and staff
- Encouraging family involvement

Having the support of your building principal is critical to the success of any initiative you would like to put in place. Consider - How is what you want to accomplish through Eco-Schools USA going to help your administrator reach his or her goals?

### School Boards

Just as school administrators have goals and objectives they strive to achieve so do school boards. On a larger scale they work to enable campuses to promote academic achievement through various strategies and want to see the community, parents, business members, and organizations support schools. Consider - How can my Eco-Schools initiative help the school board achieve their goals? Would my initiative(s) benefit the district?

### Parent Teacher Associations

*"To make every child's potential a reality by engaging and empowering families and communities to advocate for all children."* The PTA is one of the best assets the school and the school community have and it is important to be an active member. Know your PTA's goals and objectives and ask for the opportunity to have your students present their proposal for funds and/or assistance at a monthly PTA board meeting. Requests for assistance are more meaningful coming from students, and remember students are the driving force behind the Eco-Schools program.

### Other Groups

A community is built on the strength of its citizens and many small and large businesses and organizations help strengthen and bring the community together. A commonality among other members of the community is service and many specifically want to provide opportunities to the young people within the community. So think...Who are my community members? What type of initiatives do they support? What type of service could they potentially provide? Free services, monetary donation, etc...

## B. Develop an Engagement Plan

### Step 1: Research

Research your potential partner. What are their goals and objectives? What work have they done with or for students in the past? Do they care about the environment? Have they supported initiatives in the past that are environmentally focused?

### Step 2: Plan

Develop a plan for how you will garner their support, and think about the type of support you will ask for. Consider a few things, including:

- How will Eco-Schools USA help them meet their specific goals and objectives?
- What resources from the Eco-Schools USA program can we utilize to make the case? Take a look at these resources on the Eco-Schools USA website:
  - Benefits page – <http://www.nwf.org/Global-Warming/School-Solutions/Eco-Schools-USA/About-Eco-Schools-USA/Benefits.aspx>
  - 2012 Survey results – <http://www.nwf.org/Global-Warming/School-Solutions/Eco-Schools-USA/About-Eco-Schools-USA/Survey-Results.aspx>
  - Case studies – <http://www.nwf.org/Global-Warming/School-Solutions/Eco-Schools-USA/Become-an-Eco-School/Case-Studies.aspx>
  - Map of registered schools – <http://www.nwf.org/Global-Warming/School-Solutions/Eco-Schools-USA/Map.aspx>
- Will support from this group help us sustain the Eco-Schools USA program?
- Does the group have a “green” commitment and is it important to the group?

### Step 3: Meet

When you finally meet with your potential partner, make sure to cover these things:

- Describe the Eco-Schools USA program
- Explain the value the program brings to your school
- Highlight program statistics
- Make your ask personal
- Describe how you want them to be engaged in the program
- Leave behind additional information

## VI. Recognition For A Job Well Done

There are many different factors that motivate students, teachers, and schools. These include academic reasons, financial reasons, power, achievement, opportunity for advancement, the ability to contribute, etc. Another major factor is the power of ... RECOGNITION.

Students who feel good about their abilities and their contributions to a school or to a team are more likely to be happy, content and motivated. When they are recognized for their efforts, they will also continue in their desire to excel. And, there should be a celebration to recognize the significant achievements that the school and students have undertaken to green their school buildings, school grounds, curriculum, and student experience.

When a school has reached an award status, they should celebrate and share this success and accomplishment school and community-wide. It truly is a cause for celebration when an Eco-School has made such significant gains on their path to sustainability!

### A. Eco-Schools USA Award's Recognition

Once your school has registered through the Eco-Schools USA program and implemented the Seven Steps, your Eco-Action Team can apply for an Eco-Schools award. There are three levels of the award system. The first two levels are the Bronze and Silver awards which are self-assessed. The top level is the Green Flag award, which must be assessed by an Eco-Schools USA assessor and renewed every two years. A school is considered to be a permanent Eco-School once it has gained its fourth Green Flag.

Generally speaking, your school can apply for a Bronze award if it has addressed one pathway, a Silver award if it has addressed two pathways, and a Green Flag award if it has addressed three pathways. For the Silver and Green Flag awards the energy pathway must be addressed.

The awards checklists, which will provide you with more detailed information on the level of criteria that must be met for each award level, and step-by-step instructions on how to apply for an award, can be found at the following link, <http://www.nwf.org/Global-Warming/School-Solutions/Eco-Schools-USA/Become-an-Eco-School/Awards.aspx>

Visit the Eco-Schools USA website to download participation certificates that can be customized to recognize the achievements of participants on your Eco-Action team and to those in the community who have helped you make a difference.

[http://www.nwf.org/Global-Warming/School-Solutions/Eco-Schools-USA/Become-an-Eco-School/Awards/Participation\\_Certificates.aspx](http://www.nwf.org/Global-Warming/School-Solutions/Eco-Schools-USA/Become-an-Eco-School/Awards/Participation_Certificates.aspx)

## **B. State-based Green Schools Partners**

NWF's Eco-Schools has partnered with several state based organization and programs to help us promote and deliver the Eco-Schools program throughout much of the United States. Groups like the Kansas Green School program which is run by the Kansas Association of Conservation and Environmental Education(KAECE) and the Maryland Green Schools program have joined forces with Eco-Schools to provide cross promotion, joint fundraising, increased opportunities for schools and a cross-certification system that allows schools to obtain both state and national/international recognition for their sustainability work. Not only do these partnerships help schools, but it is increasing clear that by partnering with other like and sometimes non-like organizations it helps all involved to:

- Improves progress towards shared goals
- Creates space for collective thinking and action (each organization brings a new "lens" to the partnership!
- Improves scaling impact
- Reduces duplication
- Builds capacity for Initiatives and for partnering organizations

### **Check out some of our state-based Eco-School Partnerships:**

- **Kansas Green Schools** [www.kansasgreenschools.org](http://www.kansasgreenschools.org) run by the Kansas Association of Conservation and Environmental Education
- **Oregon Green Schools** [www.oregongreenschools.org](http://www.oregongreenschools.org)
- **Maryland Green Schools** [www.maeoe.org/greenschools](http://www.maeoe.org/greenschools) run by the Maryland Association for Education and Outdoor Education
- **NJ Audubon** [www.njaudubon.org](http://www.njaudubon.org)
- **EarthCare** [www.earthcarenm.org](http://www.earthcarenm.org)
- **Cool the Earth** [www.cooltheearth.org](http://www.cooltheearth.org)
- **Children's Environmental Literacy Foundation (CELF)**  
[www.celfeducation.org](http://www.celfeducation.org)

### C. DOE-Green Ribbon Schools

The U.S. Department of Education Green Ribbon Schools recognition award honors schools that are exemplary in reducing environmental impact and costs; improving the health and wellness of students and staff; and providing effective environmental and sustainability education, which incorporates STEM, civic skills, and green career pathways.

The recognition award is part of a larger U.S. Department of Education effort to identify and disseminate knowledge about practices that are proven to result in improved student engagement, higher academic achievement and graduation rates, and workforce preparedness, as well as a government wide goal of increasing energy independence and economic security.<sup>1</sup>

At this web address you will find the following information:

<http://www2.ed.gov/programs/green-ribbon-schools/index.html>

1. The Green Strides Webinar Series
2. States Intending to Nominate Schools
3. Green Ribbon Schools Fact Sheet
4. Green Ribbon Schools Overview

If you would like more information about your state's nominating procedures please follow this link: <http://www2.ed.gov/programs/green-ribbon-schools/contacts.html> and click on "State Education Agency Contacts for ED-GRS".

### D. Resources

Eco-Schools USA offers many resources that can be a valuable asset to as your school takes its journey toward sustainability. Take this opportunity to check them out and see which ones will best to address the Eco-Action team's goals and objectives.

1. **Eco-Schools USA Student Pages** were designed to give students a platform all their own within the Eco-Schools USA program. This site is divided into three age ranges, 5-10, 11-14, and 15-18 years of age. Each age range has age appropriate components that include Games and Activities, Outdoor Adventures, Preparing for the Future, Service Learning, and Students in Action.  
<http://www.nwf.org/Global-Warming/School-Solutions/Eco-Schools-USA/Student-Resources.aspx>

2. The **Energy Pathway** is a great tool filled with many resources that will allow Eco-Action teams to address energy consumption at school. Knowing that the nation's school districts spend \$7.5 billion a year on energy and it's estimated that up to 30 percent of that energy is used inefficiently or unnecessarily it is important that schools work to reduce their consumption and put energy conserving practices in place.  
<http://www.eco-schoolsusa.org/energy>
  
3. The **Climate Change Pathway** allows Eco-Action teams to investigate climate change and its effect on the school community. With the Earth's climate changing it is imperative students are knowledgeable and prepared to take action to reduce their own carbon footprint and carry a positive, action-oriented message to others.  
<http://www.eco-schoolsusa.org/climatechange>
  
4. **Classroom Carbon Calculator** is an excel spreadsheet that allows you to enter data from your classroom audit, calculate carbon emissions both before and after taking action, and provide visual tools in the form of charts and graphs that can be utilized during classroom instruction and to showcase classroom and/or school success.  
<http://www.nwf.org/Global-Warming/School-Solutions/Eco-Schools-USA/Become-an-Eco-School/Pathways/Energy/Audit.aspx>
  
5. **Cool School Challenge** engages students and teachers in practical strategies to reduce CO<sub>2</sub> and other greenhouse gas emissions school-wide. Students challenge individual classrooms to reduce their carbon emissions over a set period of time, and utilize a carbon calculator to evaluate progress. May the best carbon fighters win!!  
<http://www.nwf.org/Global-Warming/School-Solutions/Eco-Schools-USA/Become-an-Eco-School/Cool-School-Challenge.aspx>
  
6. **Climate Classroom for Kids** is a website for teachers, parents, and students to learn about climate change in an age and developmentally appropriate manner. There are lesson and activities for teachers and parents to use with their students and games and activities that are tailored for students in grades 4-6.  
<http://www.climateclassroomkids.org/default.aspx>
  
7. **Climate Classroom** is a National Wildlife Federation initiative that focuses on creating age and developmentally appropriate curricula and projects that educate youth about the causes of and remedies for global warming. (Grades 7-12)  
<http://www.nwf.org/Global-Warming/School-Solutions/Eco-Schools-USA/Become-an-Eco-School/Pathways/Climate-Change/Curriculum/Climate-Classroom.aspx>