

# GSC Activities for Elementary Schools

## October Challenge – Energy Efficiency & Conservation

### Community Involvement Activity 1: Energy Scavenger Hunt at School and Home

#### Overview

This activity will help students identify and understand which electronic devices consume the most energy. Knowing how much energy is consumed by appliances and electronics can help students and their families make smarter energy decisions in the home.

#### Activity Description

Energy consumption attributed to electronic devices in the typical U.S. home has more than doubled since 1980 and is expected to continue to grow as a result of technological innovation designed to meet surging consumer demand and changing lifestyles. While the traditional sources behind this increasing energy consumption trend are office equipment and consumer electronics, other miscellaneous devices such as power tools, portable appliances, and personal care products contribute as well. Electricity costs associated with appliances are intensifying, straining consumer budgets while adding to the climate change burden. To address these concerns, consumers, more than ever, need relevant information about the growing array of miscellaneous products and their energy consumption in order to make smart buying decisions. Students and parents can work together to investigate the amount energy used to operate most commonly used appliances and electronic devices around the home and make decisions on how they can reduce electricity consumption at home.

#### Guidelines

- Students will work with their family at home to help them find the wattage of the appliance or electronic device and solve the formula to estimate energy/cost consumption.
- Use the following formulas to estimate the appliance or electronic device energy use and cost per year:

$$\begin{aligned} & \text{(Wattage*} \times \text{Hours Used per Day} \times \text{Days Used per Year)} \div 1000 \\ & = \text{Energy consumption in Kilowatt-hour (kWh) per year} \end{aligned}$$

EXAMPLE: Window fan

$$\begin{aligned} & (200 \text{ Watts} \times 4 \text{ hours/day} \times 120 \text{ days/year}) \div 1000 \\ & = 96 \text{ kWh per year} \end{aligned}$$

\*You can usually find the Wattage of most appliances or electronics stamped on the bottom or back, on its nameplate, on the package or through the model information online.

$$\text{Kilowatt-hour (kWh) per year} \times 11 \text{ cents} = \text{Cost to power device per year}$$

EXAMPLE: 96 kWh  $\times$  11 cents/kWh = \$10.56/year

- Use the Scavenger Hunt worksheet to match items and record results.
- Students will return the Scavenger Hunt worksheets to share findings with the class.
- Student will think of ways to reduce their electricity consumption at home, that is, by making use of power strips, buying electrical appliances with the Energy Star Label, not buying more appliances, etc.

## **Hands-On Learning Activity 2: Create an Environmental Collage** *(Adapted from a lesson designed by the Green Education Foundation)*

### **Overview**

This activity will encourage students to reuse a variety of paper products to create a collage with an environmental theme.

### **Activity Description**

Students work in teams to create a dynamic and engaging environmental collage that can serve two purposes: 1. allow students to engage in arts and craft to acquaint themselves with the concept of 'material reuse and recycle,' 2. Students create a collage to raise awareness about an environmental topic relating to Energy & Climate Change. This activity will allow students to create a piece of art that will help them develop a caring attitude towards the earth by learning to recycle and reuse materials rather than throwing them away.

**What is a collage?** A collage became a distinctive part of the modern art movement at the beginning of the 20th century. It is not an example of precision; for example, the pieces of paper do not need to be perfectly measured or layered. A collage is all about irregular shapes and sizes, layering and overlapping.

### **Guidelines**

- Before creating the collage, introduce the term collage to the class.
- Explain to students that they are going to make a collage from used materials. The collage may include newspaper headlines, pieces of other artwork, photographs, magazine advertisements, scraps of paper, etc. These pieces will be glued to a larger piece of paper or cloth.
- Explain to students that a collage is often created to represent a theme. Their collage will follow an environmental theme relating to energy and climate change. Have students brainstorm different ideas relating to this theme and ask them to share the ideas with the class.
- Have students form groups of 3 or 4 and decide what type of collage they would like to create, e.g. a quilt, a poster, a photo album, etc.
- Alternative students can combine their efforts to make a class collage about and the chosen theme. Their collage can be used to promote the theme at the school-wide level.

Creating a magazine collage:

- Have students think of a message they want to send to people about the theme, energy and climate change. Explain to students that the collage should express the message and their feelings about the theme they selected.

- Discuss the types of material students will need to find to address their themes (e.g., environmentally-friendly behaviors, pictures of the natural world—animals, plants, strong headlines, etc.)
- Have students cut pictures, words, phrases, from old magazines, newspapers and such to illustrate their themes. Students will glue these onto construction paper in collage form.

After conducting the activity:

- Have students break up into small groups and share their collages. Have students discuss the message each collage portrays.
- Display collages around the school to spread the messages of the students in the class.

### **Theatrical/Multiple Intelligence Activity 3: Film Screening Day and Discussion**

**Overview:** The Green Team will select an environmental documentary to view as a class. This activity may also be expanded to include the entire grade, school and even community members. Following the film, Green Team members will engage in a class discussion to talk about the main messages delivered by the film.

**Activity Description:** This activity is not just a break from the everyday routine; it is an opportunity to inspire, educate and motivate students to make small behavioral changes now that will impact their future.

Green Team members will conduct research on possible films to screen and put together discussion questions in order to lead a conversation about what the audience learned from the film. Student will then be asked to write a list of tips to encourage sustainable behaviors at school and at home.

#### **Guidelines:**

- Select a date and time for the film screening
- Invite other grades, teachers and the community to attend the film screening
- At the close of the film, break audience members into small groups and lead a short discussion about what people learned and how they plan to change behaviors
- Encourage students to write a list of tips on the changes they will make
- Following is a list of possible documentaries to choose from or students can research other films to screen.

**The Cleantech Future:** *What if we could live in a clean world? A world in which energy would be 100% renewable, water no longer polluted, transportation truly green and production methods clean and regenerative? There will be such a world. In this documentary VPRO Backlight explores the unprecedented possibilities of a new industrial revolution: Cleantech.*

**Sea to Summit:** The "Sea to Summit" video traces the entire hydrological cycle, using a mix of computer generated graphics and filmed footage to illustrate the process as water falls to earth in the form of precipitation, before filtering down through watersheds into urban and agricultural areas and finally flows out to sea, where it is eventually evaporated into the atmosphere to start the entire process over again.

[Earth- The Operators' Manual](#): All over the globe people are trying to decrease their reliance on fossil fuels and endorse sustainable energy alternatives. In some parts of the world - China, Europe and Brazil – energy novelties are altering the way we live, and the US military is trying to reduce its carbon footprint. In this documentary, we'll see how we know that Earth is heating up, and why, and find out what science advises us about clean, green energy possibilities.

[Damocracy](#): A documentary that debunks the myth of large-scale dams as clean energy and a solution to climate change. It records the priceless cultural and natural heritage the world would lose in the Amazon and Mesopotamia if two planned large-scale dams are built, Belo Monte dam in Brazil, and Ilisu dam in Turkey. Damocracy is a story of resistance by the thousands of people who will be displaced, and a call to world to support their struggle.

[Powering the Planet](#): The number of humans on Earth has now passed seven billion. And world energy usage is estimated to inflate more than 25% during the next 15 years, and probably will nearly double by the year 2050. But how much energy we need to exploit, and how we extract it, relies upon the decisions we make now. And those energy decisions have effects on the Earth's climate.

[Earth Quest USA](#): Americans used to depend on animals for transporting people and cargo from one place to another. Oil from whales was used to illuminate their evenings. Today it's petrol and cars, and enormous amounts of electricity to brighten their cities and support their economy. But one research asserts that Americans spend just six minutes a year thinking about energy.

**Watch documentaries online:** <http://topdocumentaryfilms.com/category/environment/>

## **Reporting Activity 4: School Energy, Water and Waste Mapping and Actions**

**Overview:** Students make a map of their school and chart energy and water 'users' and waste areas around the school. Discuss current energy, water and waste practices at school and potential ways to save and take action.

**Activity Description:** This activity provides Green Teams with an activity that can help them to successfully implement the 3<sup>rd</sup> and 4<sup>th</sup> Pillars of the Green Schools Challenge: conduct a water/energy walkthrough survey and take action using mapping techniques.

### **Guidelines:**

- Students discuss as a group why it's important to reduce energy, water and waste at school,
- Students then tour the school to conduct a quick walk-through of the school. They use the energy and water walkthrough survey provided in the Guidebook to map out what they see.
- Some materials they will need are: note paper, black and colored markers, red/blue/yellow/green stickers
- Ask the head custodian to participate on the tour as they're more familiar with the school's operating systems

- Students identify sources of energy and water use and waste and recycling. Visit classrooms, offices, the library, auditorium and gymnasium.
- Draw a diagram or 'map' of the school on paper using a black marker. Mark the energy, water and waste sources on the map (for example, Energy: lights, refrigerators, copy machines, computers).
- Use colorful stickers or markers to indicate energy, water and waste locations. For example: Use red to identify energy use/waste, blue to identify water use/waste, etc.
- Identify areas where there is waste and 'opportunities for improvement' such as lights or computers left on, and equipment and appliances that are left plugged in. Be as thorough as possible. Do the same for water and waste.
- Identify opportunities to conserve water, prevent waste and recycle.
- After identifying the areas of energy, water and waste and opportunities for saving on the school map, brainstorm ideas on how the school can save energy, water and reduce waste or increase recycling.
- Create a plan using these ideas and launch school-wide energy, water and waste-reduction initiatives.

### **Creativity Activity 5: Create Your Own Energy Efficiency and Conservation Activity**

**Overview:** This activity is intended for Green Team members to use their creativity and apply their leadership skills to design and lead an Energy Efficiency and Conservation project of their choosing.

**Activity Description:** By carrying out this activity, Green Teams have the opportunity to design their own Energy Efficiency and Conservation project.

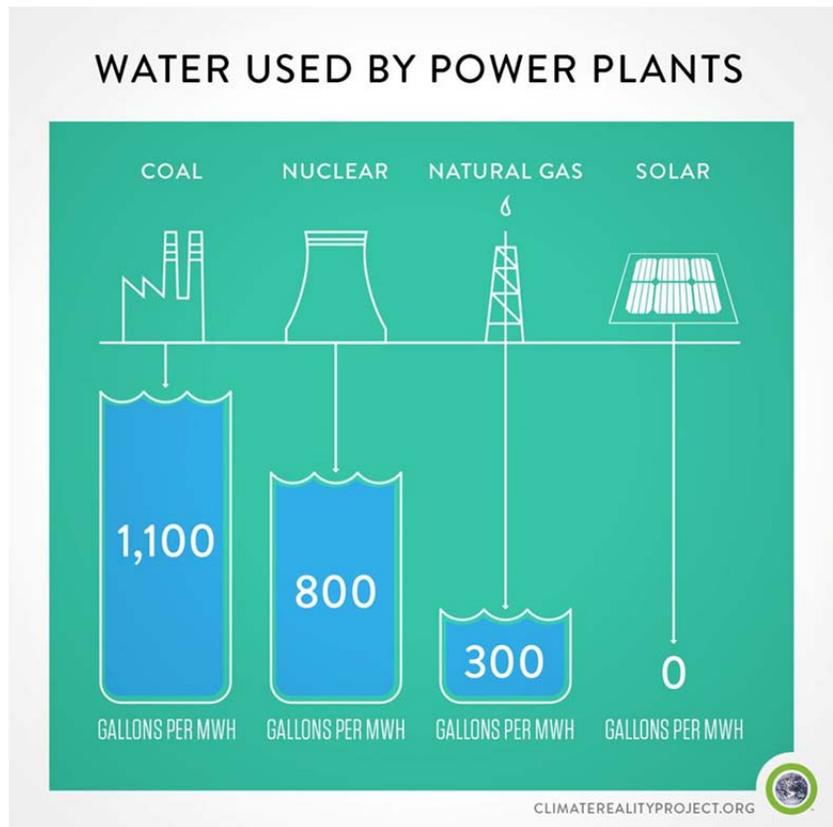
#### **Guidelines:**

- Students work in groups to design an activity that will enhance their understanding of energy efficiency and conservation or the relationship between energy and water.
- Make sure the activity: 1) identifies a problem area, 2) helps solve a problem and 3) leads to energy efficiency or conservation and/or greater awareness of climate change.
- Remember that there are points to be earned and prizes to be won. So make sure the information is resourceful, creative and has an effective message.

## WE-LAB Activity 6: The Water & Energy Nexus

**Overview:** Water and energy consumption are interdependent – the more water we use, the more energy we need, and vice versa. In fact, in Miami-Dade, Florida Power & Light (FPL) is the largest consumer of water, while Miami-Dade County Water & Sewer is the second largest consumer of energy with an FPL yearly expense of \$20 million. The average person uses 465 gallons of water per day for the electricity used at home versus 100 gallons per person per day in direct water use such as taking a shower.

**Activity Description:** Discuss as a group the energy/water nexus, the different types of ways to produce energy and how much water they use per day. Identify appliances at home and at school that include the water/energy nexus.



By saving water at home, you can save energy, reduce greenhouse gas emissions, and at the same time save money in the process. Calculating your water and energy footprint with the Home Water-Energy-Climate Calculator (WECalc) will demonstrate how the choices made in your home can impact our world’s freshwater resources.

WECalc will ask you a series of questions about your home water use habits. Based on your replies, it estimates your water use and provides personalized recommendations for reducing that use. WECalc also estimates your water-related energy use and associated greenhouse gas emissions. Delivering water to your home requires energy—to bring it to your community, to treat it so that it is safe to drink, and to deliver it to your home. More energy is used to heat water and, after use, to convey it and clean it at a wastewater treatment plant.

<http://wecalc.org/>

<b>Tips: How to save water and energy</b>
Fix a leak by checking your plumbing fixtures and irrigation systems
Turn off the tap while brushing your teeth
Use low-flow showerheads & faucet aerators
Turn the temperature on your hot water heater down
Use a shower timer; and limit the shower to 10 minutes
Sweep driveways, sidewalks, and steps rather than hosing off
Use a dishwasher instead of manually washing dishes, but make sure the dishwasher is full

Flush only when necessary
Wash only full loads of laundry, and use cold water instead of hot

**Guidelines:**

- Research the importance of water and energy conservation
- Calculate your water and energy footprint with the Home Water-Energy-Climate Calculator (WECalc)
- Implement the recommendations made by your WECalc report to reduce water and energy
- Contact Dream in Green staff to get faucet aerators and showerheads for your home and school
- Provide copies of the water and energy reports to Dream in Green staff.

# November Challenge – Waste Reduction & Recycling

## Community Involvement Activity 1: Host a Trash Bash in your community

### Overview

This activity will promote cleanliness by decreasing litter throughout nearby parks and streets in your community. Encourage teachers, staff, individuals, family members, local organizations and community members to pick up litter, educate others about litter, and conduct litter-free activities.

This is a special year as we celebrate Peanut's 30<sup>th</sup> birthday. Peanut the turtle lives the story of how litter hurts. When young, this red-eared slider got a plastic six-pack ring stuck around her shell. She grew but the plastic ring didn't and she ended up with a peanut shape. Luckily, someone found Peanut. She lives at a nature center showing people the damage litter can do.



### Activity Description

Green Team members organize a group of neighbors, friends, fellow students, church members, etc. to pick up litter in a specific area. Bring rubber gloves and garbage bags and make it more fun by turning the cleanup effort into a game/contest. Enjoy making a difference, getting exercise and having cleaner surroundings.

### Guidelines

- Take the Litter Pledge:

I promise to do my part to make and keep my community litter free. I promise to keep my house, my yard and my town clean and free of trash. I will throw my trash away and pick up items left behind by others. I will tell my family and friends about Trash Bash! And encourage them to join.

- Organize a neighborhood litter cleanup:
- Choose a safe location for your cleanup
- Create a “Cleanup Committee” to help you organize the cleanup. Assign responsibilities and set deadlines for getting volunteers, litter cleanup supplies, business support, publicity, etc.
- Pick a date (weekday or weekend) and time for the cleanup that allows as many volunteers as possible to participate. Consider choosing a rain date, too, just in case
- Consider asking local businesses to donate snacks or drinks
- Tell your local newspaper, radio, and television station about the litter cleanup and the positive impact it will have
- Take before photos
- Day of the cleanup:
- Set up an assembly area where volunteers can meet before and after the cleanup
- Have the volunteers sign-in, assign responsibilities, give litter cleanup and safety instructions, distribute the litter cleanup supplies, and tell the volunteers what time they should finish
- All volunteers should wear long pants, long-sleeved shirts, closed-toe shoes and rubber gloves
- Wear safety vests or bright colors for roadside cleanups
- Watch out for traffic near roads, even in residential areas
- Use the “buddy system.” Work in teams of two or three
- Place litter that can be recycled (e.g. aluminum cans, steel cans, plastic bottles, glass jars) into separate bags
- Take during and after photos.

## **Hands-on Learning Activity 2: Eco-Fashion Show made in the Classroom**

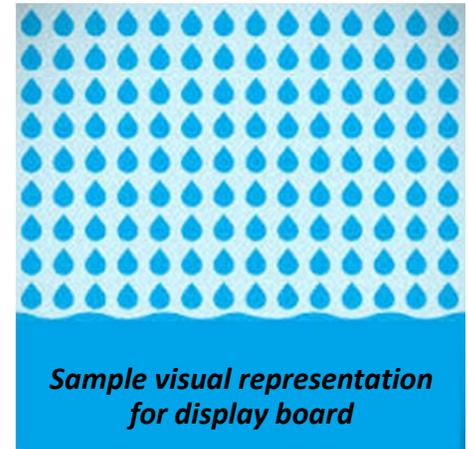
**Overview:** Students design fashion accessories and costumes using recycled materials and model their outfits and accessories in an art runway show either in the classroom or at the school-wide event.

**Activity Description:** Rooted in a love of fashion, an appreciation of art and passion for the planet, this activity allows students to use their thinking caps to come up with creative costumes for a wearable art runway show. This activity gets students thinking about how we ‘fashion’ our lives while lessening waste. Through this activity, students are encouraged to create fashion accessories such as costumes, hats, necklaces, bracelets, handbags using recycled or used materials. Students will share content knowledge through artistic expression that synthesizes experiences and educates others about our world.

### **Guidelines:**

- Students think of their favorite superhero or Disney character
- They then write down ideas for cartoon costumes and accessories and the materials that will be used to create them.
- **Materials:** Scissors, paper, glue, coloring pencils, markers and recyclable materials such as plastic bottles, cans, used clothes, newspapers, old buttons, bottle caps, etc.

- Create the costumes and accessories and host a fashion show for other students and a group of judges. Fashion shows can be a class performance or a school-wide event
- Judges may want to use score cards (ranging from 1 to 10) for each costume design. One being low quality and 10 being high quality costumes.
- Have a group of students keep scores
- Invite parents and community members to see the fashion show. Record the number of people that attend and take photos for inclusion in the GSC Newsletter.



### **Reporting Activity 3: Rise Above Plastics (RAP) in Your Neighborhood** *(Proposed by Surfrider Foundation Miami Chapter)*

**Overview:** By observing and documenting consumption and disposal, the Green Team will rapidly learn about the large amount of plastic waste embedded in our daily lives at home, school and the workplace. Plastic bags and plastic bottles are highly destructive to the environment and end up in the food chain including what humans eat!

**Activity description:** Students will be provided with a simple log to document the use of plastics, that is either bags or bottles, in their school, home, neighborhood, etc. for one week. On a daily basis, *especially* during the weekend, they will count how many water bottles and plastic bags they use and witness being used by other members of their household, by visitors, friends, at school, and in their movement around the city (shopping, dining, after school activities, etc.). During the Rise Above Plastics (R.A.P.) Challenge, it is critical that the counting of plastics be done by quiet observation – neutral, scientific data collection. The idea is to see what is being consumed and discarded under *normal* household patterns and habits without discussion as the daily log documentation continues. Upon the week’s end, Green Teams will tally up their score of plastic water bottles and bags used, evaluate its impacts on the environment, and brainstorm ideas on what simple changes they can make to reduce the amount of plastic consumption.

#### **Guidelines:**

- Educate students on the effects of plastic consumption and disposal on oceans and the environment
- Have students document and track all plastic water bottle and bag they encounter for one week
- Upon completion of the week, students will tally-up the results of the plastic water bottle consumption data into one grand team total for the week
- Students will create a board for their school which talks about the effects of plastic production, consumption and disposal on oceans and the environment and use a visual representation to demonstrate their results
- Create a blurb about the effects of plastic consumption and disposal on oceans and the environment
- Create a visual representation of the data collected by the Green Teams in one week and the impact that has on the environment.

- If the results of the data collection by the Green Team was 1000 water bottles and plastic bags observed– the Green Team would create a visual representation for the 1000 water bottles and plastic bags to demonstrate its impact.
- The teams will display the board in a location that can be seen by the entire school.
- The board should include: The water bottle effect on oceans and the environment, a visual representation of data results and it should also include some solutions/alternatives that can be implemented to mitigate the problem.

**The Surfrider Foundation** [www.surfrider.org](http://www.surfrider.org) is a non-profit grassroots environmental organization dedicated to the protection and enjoyment of oceans, waves and beaches for all people, through conservation, activism, research and education. Now in its 30th year, Surfrider has 50,000+ members and 90 chapters. The Miami Chapter <http://miami.surfrider.org> carries out Surfrider's mission at the local level.

### **Theatrical Activity 4 – Recycling Rhymes**

**Overview:** Students will brainstorm action points or tips for waste reduction and recycling and share their ideas with other students, teachers and staff members through a class performance.

**Activity Description:** Schools produce tons of waste—from paper and computers to food and books. By learning how to properly handle this waste, schools not only have an opportunity to greatly influence the future, but they can also have a significant impact on the environment. It is important that students understand why waste reduction and recycling is important. Through this activity, students will be communicating waste reduction and recycling tips theatrically to raise awareness. Students will decide what type of performance they will do to communicate the tips; it can be either through a song, rap, or play.

#### **Guidelines:**

- Research and write down 10 ideas to encourage school staff and students to reduce waste or recycle at the school
- Publish ideas in the school newspaper, weekly bulletin, or other communication medium
- Now create a play/song/rap/performance to communicate waste reduction and recycling tips
- Consider presenting the performance in class or during an assembly or special event at the school
- Don't forget to record the performance.
- Send photos or a video to Dream in Green for inclusion in our GSC Newsletter and on social media.

### **Creativity Activity 5: Create Your Own Waste Reduction & Recycling Activity**

**Overview:** This activity is intended for Green Team members to use their creativity and apply their leadership skills to design and lead a Waste Reduction & Recycling project of their choosing.

**Activity Description:** By carrying out this activity, Green Teams have the opportunity to design their own waste reduction & recycling project.

**Guidelines:**

- Students work in groups to design an activity that will enhance their understanding of waste reduction and recycling or the relationship between energy and waste
- Make sure the activity: 1) identifies a problem area, 2) helps solve a problem and 3) leads to waste reduction and recycling
- Remember that there are points to be earned and prizes to be won. So make sure the information is resourceful, creative and has an effective message.

**WE-LAB Activity 6 – Watershed Protection Campaign**

**Overview:** Green Team members raise awareness about our watershed through a campaign to reduce waste and protect The Watershed. Through this activity, students will create posters and flyers that will be posted around school for awareness. They may also promote waste reduction through art made by reused items. Students will research the effects of waste on storm water runoff so they may educate other students, staff members, and parents. It is important for them to keep track of how many people they have educated by creating a tally sheet.

**Activity Description:** All watersheds get water from rainfall. Rain flows as runoff over pavement and other surfaces which then runs into storm drains and eventually to canals and surface water. As it flows along, runoff collects everything in its path making water dirty or/and toxic to life forms. Students will create a campaign to inform others on the importance of ensuring waste does not enter the watershed. They will create posters, flyers, and think of ways to protect bodies of water from pollution. They may host a litter pick up day where students help pick up litter around campus. Find out if there are any river, beach, or highway clean-up projects in your area and see if you can participate.

**Optional** - As part of your campaign, bonus points can be awarded for students who create your own watershed with clay and rocks.

<b><u>How to Protect Your Water</u></b>
Keep trash and chemicals out of storms drains
Don't litter
Prevent garbage from getting into storm drains
Clean up after your animals and properly dispose of their waste in the garbage
Limit use of lawn fertilizers and yard pesticides

**Guidelines:**

- Research about where runoff goes and how to clean up your watershed
- Raise awareness about waste
- Think of ways to protect your watershed
- Design a campaign for awareness and create posters and flyers
- Create art through reused items

- Organize litter pickups at school
- Optional: create your own watershed
- Tally how many people you have educated (students, staff, and parents are tallied separately)
- Send photographs of posters created
- Also send the tallied results of how many people were educated about watersheds and waste reduction
- If a watershed is created, send photographs of the completed project.

## December Challenge – Water Conservation

### Community Involvement Activity 1: Celebrate the Holidays with a Showerhead Exchange

**Overview:** Students incorporate a showerhead exchange event into their holiday party/celebration.

**Activity Description:** Students research and compare inefficient showerheads with low-flow showerheads. A school-wide event is organized to promote water efficiency at home. This event should coincide with the school's holiday celebration. Students make posters and flyers about the benefits of low-flow showerheads to share with parents, school staff and other students. This event should be promoted school-wide to encourage parents, teachers and other school staff to participate and bring their old showerheads to exchange for new ones.



#### **Guidelines:**

- Organize the showerhead exchange event by first contacting Dream in Green staff [Tel: 305-576-3500] to set a date for the exchange
- Advertise the exchange for two weeks before the event to ensure that at least 20 people will attend the event and participate in the exchange
- The more people that participate the better. Dream in Green staff will bring enough water-saving showerheads for everyone
- Green Teams should create a one-page list of tips for saving water and energy to distribute at the exchange
- On the day of the event, parents will exchange their old showerheads for new ones. Each participants can receive up to 2 new showerheads as well as a flyer with a list of tips
- Keep track of how many families exchange showerheads and calculate how much energy and gallons of water will be saved by each family.

### **Hands-on Learning Activity 2: Conserving Water through Art** *(Adapted from a lesson designed by the EarthDay Network)*

**Overview:** This activity teaches students about the scarcity of water and encourages them to think of ways to conserve water in their homes. Students will be able to apply their knowledge in a creative way through art. They will take a pledge to personally use less water, and will use their creativity to make items that will remind them to conserve water in their homes.

**Activity Description:** Water is one of earth's most valuable resources, and one of the most scarce. Out of the earth's total supply of water, 97% is salt water and only 3% is fresh water. Furthermore, the amount of fresh water trapped in glaciers and icecaps is 2.2%, leaving only 0.8% of the earth's total water available for everyday human use. The water that is available for humans needs to be shared by everyone in the world, and therefore it is important not to waste it. Many areas in the world do not have access to safe, clean

drinking water like we do in the United States. Simple steps such as turning off the faucet and taking shorter showers can help to conserve the amount of water we use, so that we do not waste this precious resource.

**Relevant Vocabulary:**

**Conservation:** Preservation and protection of materials or resources

**Scarcity:** Deficient amount of something to meet the demands; not plentiful or abundant

**Guidelines:**

- In class, begin a discussion about how students use water in their daily lives. Have students list the things that they use water for and write them on the board as they are mentioned. See examples in table below
- Have a discussion with students about what they can do to conserve water. Brainstorm in general, or refer to the water uses listed previously on the board and try to think of one way to reduce for each use. See examples in table below.

<b>Water Use</b>	<b>Water Conservation Tips</b>
<i>wash hands</i>	<i>turn off the faucet after washing hands</i>
<i>brush teeth</i>	<i>turn off the faucet while brushing teeth</i>
<i>water the plants</i>	<i>water plants with water left over from cooking</i>
<i>take a shower</i>	<i>take shorter showers</i>
<i>do the dishes</i>	<i>take baths instead of showers</i>
<i>flush toilet</i>	Use rain water to flush toilets
<i>water lawn</i>	Water lawn in the evenings only

- Using a large paper banner, have students think of a pledge that they all want to make together concerning their water use. This could be very broad such as, "We pledge to use less water at home and school," or it could be more specific such as, "We pledge to turn off the water when we brush our teeth." Write the pledge in the center of the banner
- Have each student either trace, paint, or cut out and paste a copy of their hand and have them write or sign their name on/next to their handprints on the pledge banner. Hang it in the hallway so other classrooms can see and learn from it
- Pass out a jar to each student and place all craft materials out for them to use
- Explain that the jar will be used as a toothbrush holder and should be placed next to the sink as an everyday reminder to turn off the water when not in use. Have them decorate the jar with the craft materials, focusing on water as their inspiration. They should create something that will remind them to turn off the faucet when not in use
- Encourage students to share their ideas for water conservation with their family members and to show them their new toothbrush holder. How will they use less water at home?

## **Reporting Activity 3 – Field Trip to the Florida Everglades**

**Overview:** This activity encourages green schools to organize a trip to South Florida's most precious wilderness, the Everglades National Park.

### **The Florida Everglades**

The Everglades, spanning the southern tip of the Florida peninsula, is the largest remaining subtropical wilderness in the United States. It is actually a river, or wetland, featuring broad, shallow, slow moving water. Nicknamed "the river of grass," the Everglades is home to an unusual plant called sawgrass. In some areas, the water is barely visible because the sawgrass is so thick. Known for its rich animal and plant life, the Everglades is the only place in the world where alligators and crocodiles exist side by side. It is a refuge for large wading birds, such as the roseate spoonbill, wood stork, great blue heron and a variety of egrets. Featuring temperate and tropical plants, the river holds mangrove and cypress swamps, pinelands and hardwood hammocks.

### **Activity Description:**

The National Park Service (NPS) seeks to instill in all visitors an appreciation for South Florida's natural areas, and to cultivate an awareness of the many challenges they face. The vibrant, dynamic Everglades ecosystem provides the perfect outdoor classroom for field studies. Everglades National Park sponsors on-site, curriculum-based education programs. As today's students become tomorrow's leaders, it is hoped that they will be motivated to help solve the many problems we face today. These programs are best suited for local schools within reasonable driving distance to the park. Participation in these programs is free of charge and only available by advance reservation.

As part of this activity, teachers coordinate a field trip to the Florida Everglades. Teachers have several options for bringing students for a visit to the park. Students can participate in one of NPS' curriculum-based ranger-guided programs. Teachers can also easily lead your own field trip. The teacher activity guides are provided at: <http://www.nps.gov/ever/forteachers/classrooms/teacheractivityguides.htm>. Teacher registration for 2014-2015 curriculum-based, ranger-guided programs will begin at 8:00 am, Friday August 15, 2014. Programs will start October 21, 2014 and run through April 2015. Demand for programs greatly exceeds program dates - there is no guarantee that all requests will be met.

### **Guidelines:**

- Research the NPS curriculum on the Everglades and identify the appropriate field trip for your grade level
- Receive approval from your principal to take a field trip
- Coordinate the field trip with the Everglades National Park:  
<http://www.nps.gov/ever/forteachers/rangerguided.htm>
- Follow the teacher activity guides for the field trip
- Take pictures of students on the field trip and share with Dream in Green staff
- Post your pictures and write a blog on Love the Everglades Movement -  
<http://www.lovetheeverglades.org/>

## **Theatrical/Multiple Intelligence Activity 4: Superhero vs. Villain Skit Contest**

**Overview:** The Green Team will host a school-wide or classroom skit contest where students will create a superhero and a villain around the theme of water conservation. This activity will help students understand the importance of using water sparingly.

**Activity Description:** Water is quickly becoming the world's most precious resource. Skits should express the importance of water conservation. The best skit should be recorded and shared school-wide or with the community.

### **Guidelines:**

- The Green Team should announce the superhero/villain skit contest to the entire school, allowing contestants 1 to 2 weeks to design their skit
- Skits must express the importance of water conservation and may be presented using any format, such as a live or taped performance
- Green Team members will choose the best superhero/villain skit based on criteria they establish and decide how to reward the winner
- Tips: Consider writing a letter to local stores and restaurants asking them to donate a voucher or gift certificate to the winning skit.

## **Creativity Activity 5: Create Your Own Water Conservation Activity**

**Overview:** This activity is intended for Green Team members to use their creativity and apply their leadership skills to design and lead a water conservation project of their choosing.

**Activity Description:** By carrying out this activity, Green Teams have the opportunity to design their own water conservation initiative.

### **Guidelines:**

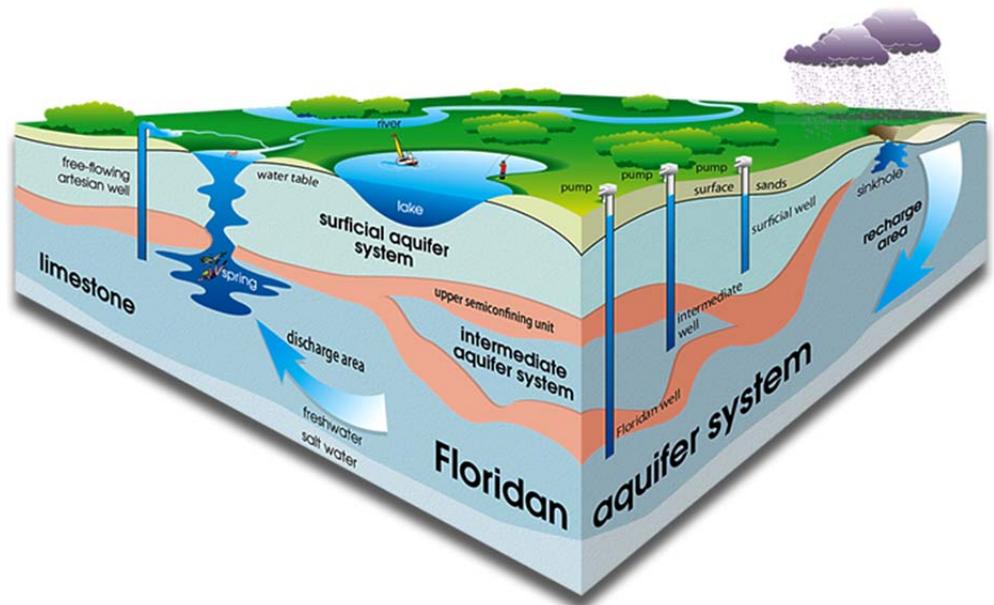
- Students work in groups to design an activity that will enhance their understanding of water conservation or the relationship between energy and water
- Make sure the activity: 1) identifies a problem area, 2) helps solve a problem and 3) leads to behavioral changes or greater understanding of water conservation
- Remember that there are points to be earned and prizes to be won. So make sure the information is resourceful, creative and has an effective message.

## **WE-LAB Activity 6 – Building a Model Aquifer**

**Overview:** Only one tablespoon in every gallon of water on earth is fresh water (called potable water). The remaining water is salty, or frozen as ice. In Miami-Dade County, the majority of fresh water is supplied by the Biscayne aquifer. Students will use a model of an aquifer to describe how ground water flows through the

Biscayne aquifer, how ground water can become contaminated, and why it is so difficult to clean contaminated ground water.

**Activity Description:** Use of ground water supplies is increasing at twice the rate of surface supplies, and the trend is expected to continue. Until the late 1970's, it was widely believed that ground water was protected from contamination by the natural filtering effect of the many layers of soil, sand, gravel and rocks. We now know that pollutants can travel through all these layers. Incidents of serious contamination have been reported in every state in the nation



A model can be a very flexible tool which will allow students to simply study groundwater flow, look at how well placement affects yield, or examine how ground water is vulnerable to contamination. For primary schools, each student can use a cup to build their own model aquifer. For secondary schools, the teacher may lead groups of four or five students in building their own models, or the teacher may build a single, larger (the larger the better) version for demonstration.

When completed, students must present their model aquifer to the class.

#### **Primary Schools Activity Details:**

[http://water.epa.gov/learn/kids/drinkingwater/upload/2005\\_03\\_10\\_kids\\_activity\\_grades\\_k-3\\_aquiferinacup.pdf](http://water.epa.gov/learn/kids/drinkingwater/upload/2005_03_10_kids_activity_grades_k-3_aquiferinacup.pdf)

#### **Secondary Schools Activity Details:**

[http://water.epa.gov/learn/kids/drinkingwater/upload/2009\\_04\\_29\\_kids\\_activity\\_grades\\_9-12\\_buildingamodelaquifer.pdf](http://water.epa.gov/learn/kids/drinkingwater/upload/2009_04_29_kids_activity_grades_9-12_buildingamodelaquifer.pdf)

#### **Guidelines:**

- Research where our drinking water comes from
- Discuss why it is important to protect the Biscayne aquifer
- Review the activity details in the links provided above
- For secondary schools, you may use an aquarium or large clear vase as alternative options to building a Plexiglas structure
- Have the students present their aquifer to the class
- Send pictures of the model aquifer(s) to Dream in green staff
- Send photographs of the students building their model aquifer, as well as photos of the completed model aquifers to Dream in Green staff.



## January Challenge - Alternative Transportation

### Community Involvement Activity 1: Walking School Bus Initiative *(Adapted from WSB guidelines designed by the WalkSafe Program)*

**Overview:** The Walking School Bus (WSB) is a group of children walking to school together under direct adult supervision.

**Activity description:** Traditionally, WSB participants meet at planned route points and pick up children at each “stop” along the route. The overarching goals of the program are to foster active travel and increase pedestrian safety among children. Active travel is an alternative mode of transportation with environmental benefits. It also increases safety in the neighborhood, creates familiarity with neighborhood areas and expands friendship for elementary school children. Other benefits include, decrease in car traffic and traffic speed, improves mental health and creates community cohesiveness.

#### Guidelines:

- **Student Transportation Assessment:** determine the needs of the community and the level of interest and safety of the area.
- **School Administration:** Speak to and receive the approval and support of school administration to initiate a WSB.
- **Recruitment and Educational Trainings:** Recruit and educate all participants, including parents on pedestrian safety skills to ensure everyone stays safe.
- **Creation of WSB Schedule and Routes:** Select safe walk routes and pick-up points with sidewalks and crosswalks. Select a schedule that works as best as possible for participants.
- **Kick-Off Event:** Promote the kick-off event throughout the school community.
- **Promotion/Sustainability:** Maintain program enthusiasm by recognizing WSB members, writing an article to local newspaper for the GSC newsletter, or creating a competition, etc.

### Hands-on Learning Activity 2: Sustainable Living: Transportation *(Adapted from a lesson designed by The Green Education Foundation)*

**Overview:** This activity introduces students to the concept of sustainable living. Students carry out a class survey, explore means of transportation and produce a visual wall frieze illustrating the results of their survey.

**Activity Description:** Compared to driving, public transit is less expensive, safer and better for the environment. It also significantly reduces traffic congestion, saves energy and benefits the communities it serves. Cars give off carbon dioxide gas and other fumes that pollute the air and is bad for our health and climate change. Students will research the different modes of transportation in a city and conduct a class survey of how students get to school every morning. The purpose of this activity is to engage in a discussion about what modes of transportation are less polluting to the environment.

#### Guidelines:

- Introduce six means of transport through mime. Invite a student to come to the front of the class and mime one of the means of transport for the class to guess. Write the word on the board next to it.

- Play a flashcard instruction game. Create six transportation flash cards. Stick the transport flashcards around the room. Divide the class into groups. Give each group instructions:

Group 1 cycle to the bicycle

Group 2 drive to the car

Group 3 fly to the airplane

Group 4 run to the bus

Group 5 jump to the train

- Each group does the action as they go towards the corresponding transport flashcard image.
- Students conduct a survey: Ask the student groups to move round the classroom and ask the following questions: What is your name? How do you travel to school?
- The students now move around the classroom with their survey sheet interviewing each other. You may want to drill the question structures, for pronunciation, before they begin. Monitor and support.
- Now as a whole class, check the results. Ask each group: how many students go to school by foot / bicycle / car / bus / train? Write the results up on the board.
- Talk about pollution. Ask the pupils which transport is cleaner for the environment. Which transport should be encouraged for a healthier and cleaner planet?
- Transport paper chains. Explain to the students that they are going to make a wall display which will illustrate their survey finding. Put the students into groups of four.
- Each group chooses a transport and a different colored paper. If the survey results show that 10 pupils come to school by car then together as a group they must make a paper chain ten cars long, cutting and sticking if necessary.
- When they are finished, hang up the transport paper chains next to each other on the wall.
- Invite the pupils to count and check that it corresponds with the survey results written on the board.
- Explain that lines of cars, a bit like the paper chain shows, are called 'traffic jams' which cause pollution and that we should try to take alternative transport for short distances.

### **Reporting Activity 3: Healthy Travel for You & Planet Earth** *(Adapted from a lesson designed by the City of Portland - Bureau of Traffic Management)*

**Overview:** Students will learn that walking, cycling, and using mass transit will benefit the environment and enhance their own health.

**Activity Description:** Have students brainstorm ideas to identify what alternative transportation options exists in their city and why it is important to walk, bicycle, carpool or use mass transit rather than a motor vehicle.

#### **Guidelines**

- Use the Healthy Travel for You & Planet Earth fact-sheet to brainstorm ideas with students.
- Create a report worksheet and have student document how using alternative forms of transportation is something people can do to be healthy and protect the environment. To do this ask students to draw a form of alternative transportation and then answer the following question: How does this form of Alternative Transportation help people be healthy and protect the environment?
- Create a poster board to display the student's Healthy Travel for You & Planet Earth report worksheets.

## Healthy Travel for You & Planet Earth

### Fact-Sheet

#### Did you know?

- ★ For every 25 miles driven, one pound of **pollution** dirties the air.
- ★ **Driving at a steady speed** minimizes pollution.
- ★ Automobiles account for about 30-40 percent of the nation's total **carbon-dioxide emissions**. Carbon dioxide is the main contributor to the greenhouse effect – the slow warming of the earth's atmosphere.
- ★ In the last fifteen years, the number of **vehicle miles traveled in the Portland area has increased 140 percent**, while population has increased only 47 percent.

#### *Energy Usage and Fuel Efficiency*

- ★ The U.S. has only five percent of the world's population, but uses 26 percent of all **commercial energy**.
- ★ **Fuel-efficient and properly tuned vehicles** minimize pollution, as do vehicles whose emissions-control systems are working properly.
- ★ Motor vehicles burn more than twice as much gasoline during the **first few minutes of operation** as they do at other times.
- ★ **Automobile air-conditioners** consume more than a gallon of gasoline for each full tank burned.
- ★ **Under-inflated tires** cause drag, which can raise fuel consumption by as much as 6 percent.
- ★ **Radial tires** can improve fuel economy by about one mile per gallon.
- ★ **Less gasoline is burned at 55 mph** than at 65 mph.
- ★ **Thirty seconds of idling** can consume more gasoline than the amount used to start a car.
- ★ The more **fuel-efficient** the motor vehicle, the more money you can save and the fewer valuable resources you use. (Students can read Consumer Reports to discover the most fuel-efficient cars and trucks on the market. For example, they could make a list of all cars that get more than 30 miles to the gallon.)
- ★ **Alternative fuels** are available for powering motor vehicles. These fuels include electric power, natural gas, ethanol, and methanol. (Students can write to their state and federal senators and representatives, asking them to support laws that would encourage, rather than discourage, alternative motor-vehicle fuels.)

#### *Other Impacts*

- ★ Motor vehicles often have **negative impacts on neighborhood streets**: noise, air pollution, threat to safety. (Students might encourage their parent(s)/guardian(s) to use more major thoroughfares and to drive more slowly.)

#### *How to Make a Difference*

- ★ If you drive alone to work and switch to the bus or a carpool, you can **cut your commuting costs** by more than half.
- ★ If each car carried two passengers instead of only one, up to **40 million gallons of gasoline would be saved** each day.
- ★ When just one commuter leaves a car in the garage and uses alternative transportation for one year, our lungs and planet are spared an average of **nine pounds of hydrocarbons, 63 pounds of carbon monoxide, five pounds of nitrogen oxides, and one pound of particulates**.
- ★ Carpoolers and transit riders may use Tri-Met's numerous **Park & Ride** lots for free. Park & Ride allows travelers (1) to meet Tri-Met halfway, (2) to avoid walking a long distance to a Tri-Met stop, and (3) to avoid having make multiple transfers. Call 503-238-RIDE for more information and for trip-planning assistance.
- ★ People can **carpool** to places of common destination: work, school, etc. To obtain a carpool matchlist and discounted parking for carpoolers, call 503-238-5833.
- ★ Leaving your car at home and using alternative forms of transportation – and convincing others to do the same – helps **reduce traffic congestion and air pollution, and conserves energy**.

## **Theatrical Activity 4: Design Competition – Alternative Transportation Models**

**Overview:** Organize a design competition around the theme “Alternative Transportation” and the idea of promoting alternatives to traditional single-occupant vehicles.

### **Activity Description**

Your Green Team will host a school-wide or classroom design competition, where students will make a model of their favorite model of alternative transportation to raise awareness of the various forms of alternative transportation available.

### **Guidelines**

- 🌱 The Green Team should announce the design competition to the entire school or class, allowing contestants 1 to 2 weeks to design their alternative transportation models.
- 🌱 Models must express the importance of alternative transportation and may take the form of an inanimate object or a costumed character.
- 🌱 Green Team members will choose the best model based on criteria they establish and decide how to reward the winner.
- 🌱 Suggested Alternative Transportation Modes: Walking, Biking, Bus, Mass Transit, Carpooling, and Eco Cars or invent your own!
- 🌱 Tips: Consider writing a letter to local stores and restaurants asking them to donate a voucher or gift certificate to the winning alternative transportation model. Make sure to say that it will help to promote the sponsoring company at the school throughout the contest.

## **Creativity Activity 5: Create Your Own Alternative Transportation Activity**

**Overview:** This activity is intended for Green Team members to use their creativity and apply their leadership skills to design and lead an Alternative Transportation project of their choosing.

**Activity Description:** By carrying out this activity, Green Teams have the opportunity to design their own Alternative Transportation initiative.

### **Guidelines:**

- Students work in groups to design an activity that will enhance their understanding of alternative transportation.
- Make sure the activity: 1) identifies a problem area, 2) helps solve a problem and 3) behavioral changes and/or greater awareness of why alternative transportation is important to mitigate the effects of climate change.
- Remember that there are points to be earned and prizes to be won. So make sure the information is resourceful, creative and has an effective message.

## **WE-LAB Activity 6 – Water Footprint of Fuel**

**Overview:** With biofuels and electricity poised to gain a significant share of the U.S. transportation fuel market, water will become increasingly linked to transportation energy. Biofuels, in fact, are often criticized for their high water consumption in their production. Results indicate that including indirect water use can increase our water footprint by as much as 82% or decrease by as much as 250%. Depending on our fuel choices, the water source used may also significantly impact the fuels' carbon footprint. Producing cellulosic ethanol using imported water, recycled wastewater, or desalinated water raises the carbon footprint by up to 47%.

**Activity Description:** Discuss as a group the different types of fuels and what they are used for. Students will use a water footprint calculator to determine the water footprint of different types of fuels, and provide recommendations on how to reduce the water footprint of fuel at home and school.

<http://www.waterfootprint.org/?page=files/productgallery>

### **Guidelines:**

- Research the importance of fuel, how we use fuels, the different activities where fuel is used directly or indirectly and how to decrease fuel use.
- Calculate the water footprint of fuel at <http://www.waterfootprint.org/?page=files/productgallery>
- Develop recommendations to reduce emissions and water footprint from fuel and transportation
- Implement the recommendations made at your school and home
- Provide completed spreadsheets of water and energy footprint of fuel to Dream in Green staff.

## **February Challenge - Green Buildings**

### **Community Involvement Activity 1: Invite a Professional to Speak at Your School about Green Buildings**

**Overview:** Students will be able to meet a green professional and learn about sustainable building practices, the economic benefits and the effects on natural resources and climate change. You might be surprised at how many green buildings there are and the cost to build them.

**Activity Description:** The buildings in which we live, work, and play protect us from nature's extremes, yet they also affect our health and the environment. Green, or sustainable, building is the practice of creating and using healthier and more resource-efficient models of construction, renovation, operation, maintenance and demolition. By inviting a local professional in to talk about green buildings, students will have the opportunity to present, ask questions and learn more about this new industry.

#### **Guidelines:**

- Set a time frame when you can host a green professional at your school
- Contact staff at Dream in Green who can provide you with a list of local green professionals
- Create excitement about the visit with your students – ask them to conduct research and think of questions prior to your green professional visiting
- Invite students, teachers and staff to attend the speaking engagement
- After the green professional visits, have the students recall the event by writing in their journals

### **Hands on Learning Activity 2: White Hot or Not?** *(Adapted from a lesson designed by The Green Education Foundation)*

**Overview:** Students will learn why the color of a roof plays a huge role in the energy consumption of a building. We might not be able to replace an entire roof but through this exercise students will learn why lighter colored coatings and paints are better for buildings.

**Activity Description:** You can engage the art and science classes in this one. Students will learn about the types of projects that landscape architects work on and then create their own green roof using a shoebox. Students are introduced to the landscape architecture profession and learn that green roofs are one type of project that landscape architects create. Students build a mini green roof in the lid of a shoebox. Discussion before and after the building process, along with a handout, highlights the benefits of green roofs.

#### **Guidelines:**

- Have each child bring shoe box lid or an 8 x 10 size piece of cardboard to class. Collect extra ones in case students forget or bring smaller sizes. There are lots of cardboard boxes at the school in the recycling areas
- You will need four colors of paint – white, yellow, black and orange. (Feel free to alternate yellow and orange with your schools colors, but white paint and black are required)

- Organize the class into four teams – by the four colors you have chosen
- Each child paints their shoe box lid or piece of cardboard with school-safe paint in the color of their team and allows them to dry overnight
- The following day, place them outside (weather permitting) at the beginning of the day in full sun
- After two hours take the kids outside to place their hands on the various colors and have them tell you which colors are hotter vs. cooler.

**Reporting Activity 3 – It’s Easy Being Green with a Team** *(Written by USGBC South Florida and adapted from a lesson designed by The Green Education Foundation)*

**Overview:** This activity will allow students to design a green school building. Green Team members will improve their school by making it "greener" than it is now.

**Activity Description:** Students will learn about green building concepts and techniques. Engage the students in discussion: How is your new school building different from the building you started with? Why do you think the changes in the school building will reduce its carbon footprint? What features and materials have you added to your school building? What features and materials have you removed from the school building? What might you imagine it would feel like when you are inside the new school building?

**Guidelines**

- Have students or green team members conduct research or homework about green buildings, ask them to find one example of a green building in Miami. Divide the class into teams. The team members will close their eyes and visualize their school building the way it is now. Think about all the floors, the roof, the composition of the outside walls, the areas surrounding the school, the windows and the shades
- Have the students draw a part of the school building that they imagine changing to be "greener."
- Make notes on what should be changed. (e.g. more windows, solar panels, different lighting, different roof, floor heating, change in the playground etc.)
- Each team could use construction paper to create a greener version of their school. Student teams can present their green school to the class.

**Theatrical Activity 4 – Draw a Green Building** *(Written by USGBC South Florida)*

**Overview:** Students will be able to use their creativity after reading an excerpt (grades 3-5) or listening to the teacher read an excerpt (grades K-2) on Green Buildings (see below).

**Grades 3-5**

Denver Zoo's Elephant Passage achieves LEED Platinum Certification - <http://greensource.construction.com/news/2013/05/130531-denver-zoos-elephant-passage-achieves-lead-platinum-certification.asp>

**Grades K-2**

Introduction to Green Building – you can find a short video to show the children on this site or find materials for reading. <http://www.childrenoftheearth.org/green-building-sustainable-homes/introduction-to-building-green-homes.htm>

**Activity Description:** Grades K-2: teachers will read the attached excerpt describing a green building and what goes into building and maintaining a green building. Students will be provided materials to draw and color a green building after the reading. Grades 3-5 will read the attached text and will create a green building using materials of their choice.

**Guidelines:**

- Read or handout the attached excerpt according to grade level
- Have a class discussion on why green buildings would be fun to live, work or learn in
- Formulate a discussion to find out whether the students have ever been in a green building and have them explain what their experience will be like
- Ask the children if they think their school is a green building
- After discussion or on the following day have students draw/paint/create their idea of a green building
- Use the drawings, etc. for another class discussion, time permitting.

### **Creativity Activity 5: Create Your Own Green Building Activity**

**Overview:** This activity is intended for Green Team members to use their creativity and apply their leadership skills to design and lead a green building project of their choosing.

**Activity Description:** By carrying out this activity, Green Teams have the opportunity to design their own green building initiative.

**Guidelines:**

- Students work in groups to design an activity that will enhance their understanding of green buildings
- Make sure the activity: 1) identifies a problem area, 2) helps solve a problem and 3) lead behavioral changes and/or greater awareness of why green buildings are important to mitigate the effects of climate change
- Remember that there are points to be earned and prizes to be won. So make sure the information is resourceful, creative and has an effective message.

## **WE-LAB Activity 6: PSA to Save Water & Energy at School & Home**

**Overview:** Students will create a Public Service Announcement (PSA) in order to encourage students, teachers and administrators to save energy and water at school and home. The message should involve the themes of saving water and energy. It is advised record your actions.

**Activity Description:** Green Team members are responsible for creating a play or PSA that will bring awareness in a theatrical manner. They should research ways in which a person may waste energy and water. The goal of the theatrical presentation is to increase awareness of what is good and bad for the environment. The play or PSA may be done in the classroom or in assembly, etc. Take pictures and record your efforts.

### **Guidelines:**

- Create a play or PSA with a green message
- Make sure the PSA is no more than five minutes
- Record or take pictures of what you have done
- Send photographs and/or videos of the play and PSA

## March Challenge - Green Careers

### Community Involvement Activity 1: Little Green Journalists

**Overview:** Students will report on “What’s green in the community” by writing short articles for a school newsletter.

**Activity Description:** Students will work with a teacher to design and write an informational newsletter for the school and community members covering ‘green’ topics. The idea is to have students work as Little Green Journalists to help raise awareness about environmental issues such as climate change, sea level rise, pollution, landfill sites, etc., and to think of solutions to these problems and present these solutions to the wider community. This will not only educate others but enable students to explore a career in journalism that is linked to environmental actions.

#### Guidelines:

- Teachers are encouraged to work with students in 4<sup>th</sup> and 5<sup>th</sup> grade for clear and concise reporting
- Select a group of students that are responsible, inquisitive and detail oriented for this challenge
- Begin by having a discussion on green journalism and the newsletter format
- Determine what format is best suited for the school. Remember the target audience is community members. Newsletters should include three sections: 1. Green Facts 2. Green Tips and 3. Green Actions
- Additional sections may be added as per the needs of the school and the community. Students may be assigned topics to write on and gather information by conducting research via the Internet, library and interviews. Articles may cover facts and opinions. Teachers are asked to verify all submissions for editing
- Newsletters may be published quarterly and distributed via email and or posted on school bulletin boards or distributed as flyers to community members. Ideas for newsletters include, but are not limited to: endangered species, The Everglades, and coral reefs, How much do we recycle? Building a school garden, effects of global warming, climate change, sea level rise, pollution prevention and the energy/water nexus.

### Hands on Learning Activity 2: Invite a Green Professional to Your School

**Overview:** Students will be able to meet a green professional and learn the various jobs that they do. You might be surprised at how many green professionals there are and the many different jobs they do.

**Activity Description:** This activity will demonstrate the many opportunities there are for students to go into the field of green jobs and provide face to face interaction, allowing students to ask the professionals questions about this growing field. It can also be incorporated into your career day like the one held at Driftwood Middle.

#### **See informational video**

<https://becon223.eduvision.tv/Default.aspx?q=M1%252fSz0zM2vemzFFr%252btx6WQ%253d%253d>

#### Guidelines:

- Set a time frame when you can host a green professional at your school

- Contact a Dream in Green staff to request a list of green professionals available to visit your school
- Create excitement about the visit with your students – ask them to think of green jobs prior to your green professional visiting
- After the green professional visits, have the students recall the event by writing in their journals

### **Reporting Activity 3: Sing about Renewable and Non-Renewable Energy**

**Overview:** Students will write songs about renewable and non-renewable sources of energy.

**Activity Description:** Partner up and write a song describing sources of renewable and nonrenewable energy. Students will state if the energy is renewable or nonrenewable. Students will create a song and perform for other classmates. The song should not reveal what type of renewable or non-renewable energy source it is about. Classmates can try to identify the type of energy source described in the song.

#### **Guidelines:**

- Green Team students will research a source of renewable and non-renewable energy
- They will create a song by writing three statements and asking one question. One sentence should state if the chosen source is a renewable or non-renewable energy
- Students will use a first person point of view
- Students can tell how the energy is used and where it is found
- Lastly, students will create a class performance from the song created.

See example below:

#### **Riddle/Song**

I can provide heat for your house  
when I'm burned in your furnace.  
I am taken from the earth.  
I am a non-renewable energy source.  
What am I?

### **Theatrical Activity 4: Dress Up as a Green Professional**

**Overview:** Students will research a green career and dress up as a green professional. They will present to the class what green professional they are and what they do.

**Activity Description:** Students learn about a green career by researching via the Internet and the library. A summary report will be written by each student that provides information about the particular green job they chose and convince others of this career path.

**Resources:**

A complete list of green careers from the Bureau of Labor Statistics: <http://www.bls.gov/green/greencareers.htm>

**Guidelines:**

- Teacher will provide students with a list of green careers for students to review or may assign one from the list
- A teacher guided discussion is encouraged to serve as a brainstorming session. This will motivate students and perhaps introduce other green jobs that were not listed
- The report can be in either an outline format or paragraph format. Reports must include years of study, subjects that were studied and how this career helps the environment
- Make sure to include pictures to make it attractive for other students.

**Green Jobs provide Environmental Benefits**

- Help improve energy efficiency.
- Create renewable fuel or energy.
- Reuse or recycle materials into new products.
- Prevent or mitigate the effects of pollution.
- Protect the environment.
- Educate or raise awareness about environmental sustainability and the green economy.

***EXAMPLE of Outline Format:***

Name of Green Professional: Landscape Architect

Years of Study: 5-6 years

What subjects were studied to prepare for this green career? Landscape architecture includes botany, horticulture the fine arts, architecture, industrial design, geology and the earth sciences, environmental psychology, geography and ecology.

How does this green career help the environment? It helps by designing public spaces such as parks that provide environmentally friendly areas for people to enjoy. Landscape architects are concerned with landscape planning for the location, scenic, ecological and recreational aspects of urban, rural and coastal land use. Examples are urban design, town and city squares, waterfronts, pedestrian schemes and parking lots. In the United States, landscape architecture is regulated by individual state governments. For a landscape architect, obtaining licensure requires advanced education and work experience, plus passage of the national examination. Several states require passage of a state exam as well. In the U.S., licensing is overseen both at the state level and nationally by the Council of Landscape Architectural Registration Boards (CLARB). The national trade association for U.S. landscape architects is the American Society of Landscape Architects. The average salary for landscape architecture professionals in the U.S. is \$71,000.

In the example the words Botany and Urban design are underlined to show that these were identified by the student as new vocabulary terms. The student may include their definitions on a separate sheet of paper to show expansion of vocabulary. In some cases, students may have 5 or more terms they learned during their research.

**Creativity Activity 5: Create Your Own Green Career Activity**

**Overview:** This activity is intended for Green Team members to use their creativity and apply their leadership skills to design and lead a green career project of their choosing.

**Activity Description:** By carrying out this activity, Green Teams have the opportunity to design their own green career initiative.

**Guidelines:**

- Students work in groups to design an activity that will enhance their understanding of green careers
- Make sure the activity: 1) identifies a problem area, 2) helps solve a problem and 3) leads to behavioral changes and/or greater awareness of why green careers are important to mitigate the effects of climate change
- Remember that there are points to be earned and prizes to be won. So make sure the information is resourceful, creative and has an effective message.

**WE-LAB Activity 6 – Dreaming of a Green Career**

**Overview:** According to the United Nations Environment Program a green job is work in agricultural, manufacturing, research and development, administrative, and service activities that contribute(s) substantially to preserving or restoring environmental quality. Specifically, but not exclusively, this includes jobs that help to protect ecosystems and biodiversity; reduce energy, materials, and water consumption through high efficiency strategies or programs; de-carbonize the economy; and minimize or altogether avoid generation of all forms of waste and pollution.

**Activity Description:** Students will perform research on the different types of careers in sustainability which may include the renewable and solar energy industry, recycling, green building, landscapers, agriculture, etc. Other examples include but are not limited to scientists, engineers and manufacturing, as well as non-profit, government and education jobs. They should identify one of those careers and create a job advertisement for a specific job. The goal of the job advertisement is to allow students to learn about different green careers, encouraging them to consider climate friendly careers.

**Optional:** Earn up to two bonus points if your students interview professionals in their chosen sustainability career. Students will need to prepare a summary of their interview with the professional including their name, job title and company name.

<b><u>Importance of Green Jobs</u></b>
Help and benefit the environment by reducing carbon emissions
Help save water and energy
Strengthens the economy by providing good jobs

**Guidelines:**

- Research the importance of careers in the sustainability industry
- Identify jobs in the sustainability industry and research their job duties and responsibilities
- Create announcements or ads regarding that specific job to include tasks and pictures
- Send photographs of the ads created. For bonus points, send examples of interviews performed.