

# Science Lesson: Greening the Holidays

OHIO Academic Standard/Indicator: I will

## **Fifth Grade Earth Systems**

1. explain how the supply of many non-renewable resources is limited and can be extended through reducing, reusing and recycling but cannot be extended indefinitely
- 2. investigate ways Earth's renewable resources (fresh water, air, wildlife and trees) can be maintained**

## **Sixth Grade Nature of Energy**

5. explain that energy found in nonrenewable resources such as fossil fuels (oil, coal, natural gas) originally came from the sun and may renew slowly over millions of years
6. explain that energy derived from renewable resources such as wind and water is assumed to be available indefinitely
7. describe how electric energy can be produced from a variety of sources (sun, wind, coal)
8. describe how renewable and nonrenewable resources can be managed (fossil fuels, trees, water)

## **Materials:**

- <http://www.garden.org/urbangardening/index.php?page=greening> (see below)
- cranberries & popcorn
- large needles and thread

## **Procedures:**

- 1) Read the article about "Greening the Holidays" with a partner.  
<http://www.garden.org/urbangardening/index.php?page=greening>
- 2) Discuss which steps you can take to "green" your holidays.
- 3) Write in your journals: Three choices for Greening your holidays
- 4) In small groups or partners string cranberries and popcorn
- 5) Decorate trees outdoors with the garlands

**Lesson Summary by students: What did you learn?**



## Greening for the Holidays

<http://www.garden.org/urbangardening/index.php?page=greening>

QuickTime™ and a  
TIFF (Uncompressed) decompressor  
are needed to see this picture.

Shiny leaves and berries make hollies the quintessential holiday greens.

Greening encompasses many aspects of life, not just exercising our green thumbs. Reducing energy use, emissions, and toxic pollutants helps the environment and improves our health, so here are some steps we can take toward making this a greener holiday season.

1. Conserve energy in your holiday decorating by:

- Using fewer incandescent lights
- Connecting lights to a timer so they turn off at night when there's no one awake to appreciate them
- *Adding more garlands, ornaments, and ribbons to the tree in place of lights. Making your own ornaments from recycled products and/or garden materials (pinecones, seed heads, berries, and branches) is a fun family activity.*
- Switching some of your remaining incandescent Christmas lights to LED lights. Eventually look to replace all your decorative lights with LEDs. Check stores and Web sites after the holidays for discounts and sales. LEDs are:
  - More efficient, using 90 percent less energy
  - More durable, tough, and long-lasting (~50,000 hours per bulbs)
  - Less of a fire/burn hazard because they are cool to the touch (approved by the Home Safety Council)

2. Consider using rechargeable batteries for children's toys and electronics. This reduces the amount of batteries (and their toxic chemicals) in landfills and incinerators.

3. Before doing holiday cleaning, consider switching out some of your more harsh and toxic cleaners for environmentally friendly ones. Many of them are not only safer, they are also more effective. Check with your local municipality to determine how to properly dispose of your toxic cleaners and chemicals.

4. Recycle Christmas trees. They can be chipped into mulch, or branches can be cut and placed in the garden as a decorative winter ground cover.

5. Find and visit green places in your town by using Greenmaps ([www.greenmap.org](http://www.greenmap.org)). These maps show the location of organic stores and restaurants, bike trails, parks, farmers' markets, green buildings, sustainable transportation, geologic formations, cultural and historic institutions, and more. Greenmaps are compiled mostly by communities of volunteers around the world. This egalitarian process allows you to help create new maps or add to existing ones if your town has not been charted or your favorite places are not listed.

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Pinecones make a long-lasting wreath that you can save from year to year.

6. Add a few houseplants for winter color and to help improve air quality. Pothos and spider plants are some of the best for cleaning the air. Check [Top 10 Winter Houseplants](#) for ideas about colorful, fragrant home companions.

7. Instead of rock salt (NaCl), use sand, magnesium chloride (MgCl<sub>2</sub>), or calcium chloride (CaCl<sub>2</sub>) to deal with snow and ice. Salt is corrosive to metal, wood, asphalt, and concrete, and it is toxic to plants. Conversely, sand, MgCl<sub>2</sub>, or CaCl<sub>2</sub> can help improve soil texture and fertility. Sand only helps gain traction, not melt snow. MgCl<sub>2</sub> is the safest snow-melting product for plant roots, animals, and ground water. CaCl<sub>2</sub> is almost as safe and is the most effective for melting ice at any temperature.

8. Volunteer with your local park district or forest preserve to help restore local habitats. This is a good opportunity to get some fresh air and outdoor activity during the winter months. Plus, you get to meet and converse with outgoing, concerned members of your community. Winter is the ideal time to remove invasive woody species, which can alter habitats and squeeze out native plants. For us in Chicago, that means taking out European buckthorn and Asian honeysuckle. My relatives in South Carolina are wrestling with autumn olive and Chinese privet. And my friends in California need help removing saltcedar and blue gum eucalyptus.

9. Carpool or share a taxi van to the New Year's Eve party. This saves on CO<sub>2</sub> and avoids a DUI.

10. For the New Year, resolve to make a green change in your household. You don't have to go all out. Pick one resolution and then add another when you are ready.

Some to consider are:

- Lower your thermostat by 2 degrees this winter and put on another layer while in the house to help reduce energy consumption.
- *Change some of your wasteful incandescent light bulbs to energy-efficient ones.*
- Take a 30-minute walk daily. Instead of driving to the store or the gym or the post office, walk. This reduces emissions, promotes good health, and gets you out into the local community.
- *Consistently recycle and reuse.* This saves raw material, such as trees, and reduces landfill waste. Start with Christmas paper, boxes, and gift bags. Right now my collection of leftover gift bags and tissue paper would get me through the next five weddings, two graduations, and three Christmases.

Let's show how much we appreciate,  
By greening up in 2008.

Happy Holidays!