

Connect the Dots Challenge: Lenten Carbon Footprint Fast

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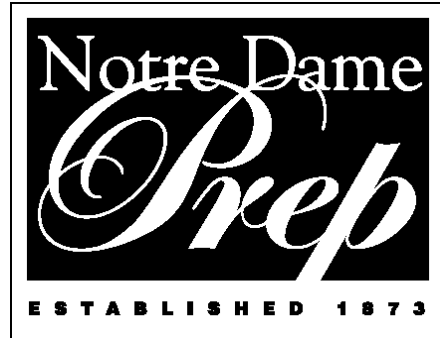
Notre Dame Preparatory middle level classes (grades 6-8) participated in a carbon footprint fast during Lent, from Ash Wednesday on February 14, to Holy Thursday on March 29. During this time students from the middle level STEAM club, assisted by the Green School and Shalom clubs, educated and encouraged 180 middle level students to take action that demonstrated care for creation. The students focused their efforts on conservation and the environmental impact of their actions by sponsoring "No Waste Wednesdays" during Lent. Each Wednesday classrooms in middle level turned off a row of lights for the day and supplemented with natural sunlight as a visual reminder of their Lenten commitment to conserve energy. This visual reminder on Wednesdays encouraged students to make every effort to (a) reduce their use of plastic utensils in the dining room and (b) increase their use of reusable water containers. The percentage of students participating in No Waste Wednesdays from each grade level increased every week during Lent. Students in the STEAM Club tracked the impact of carrying reusable water bottles by monitoring the digital counters on purified water stations located in the student dining room, on the middle level floor, and next to the middle level gym. Energy saved from turning down the lights in classroom and using natural sunlight was quantified through an energy report provided by the school's facilities manager. As part of their energy conservation effort, students in the STEAM Club also identified four rooms as areas of potential energy savings. They recommended that light timers be installed in these rooms so that lights would automatically turn off when the room is empty. The rooms identified were the art lab, the innovation lab, a science lab (Room 301) and the middle level faculty lunch room. These rooms had been newly renovated, but light switch timers—currently in all other middle level classrooms—had not been installed. Results in student efforts during Lent include: an estimated **5,952** water bottles replaced and **143.4** kilowatts of electricity saved. Student participation in No Waste Wednesday increased from **18%** during the first week of Lent to **37%** in the last week of Lent. Increased participation was the result of educating students with videos and student-written poems and prayers presented during chapel time or over the middle level broadcast studio WNDP.

In order to support and continue to encourage student efforts to learn more about reducing a carbon footprint the STEAM club planned an assembly. They asked the project mentor, Marissa Oeste, to speak on her role and responsibility as a civil engineer to protect the environment when constructing buildings. They planned an activity to use recycled newspapers to have each student create a paper flowerpot in which to plant seeds that they could watch grow until Easter. They would then plant the seedlings, paper and all, into the middle level garden. Giving each student the opportunity to participate in contributing to the garden would reinforce students' understanding of their role as global citizens to care for creation and their responsibility to reduce their carbon footprint. Plans and schedules, however, do not always work out. The first full day of spring brought 6 -8 inches of snow and school was cancelled. The assembly has been re-scheduled to May.

To build on the strong foundation established by the STEAM club, working with the Green School and Shalom clubs, WNDP plans to continue airing weekly reminders to participate in No Waste Wednesdays. The STEAM club itself plans to explore how best to encourage even more students to carry reusable water containers and bring their own reusable utensils. On St. Patrick's Day students measured their Green IQ by taking a short survey on ways to conserve our natural resources. Fun activities like the survey--together with setting goals and celebrating benchmarks for the number of water bottles replaced at the water stations--are just a few ways that the STEAM club hopes to keep students interested in lowering their carbon footprint. They will use Earth Day, April 22, with its "End Plastic Pollution" theme, as an opportunity to raise student awareness of the dangerous levels of plastic pollution in the earth's oceans. Finally, several STEAM club students volunteered to write questions and interview the owner of the food services at Notre Dame Preparatory. The purpose of their meeting was to better understand opportunities that might exist to make the school dining room and kitchen more environmentally friendly. Suggestions made by the students are currently being reviewed and areas that require additional problem solving present future opportunities.

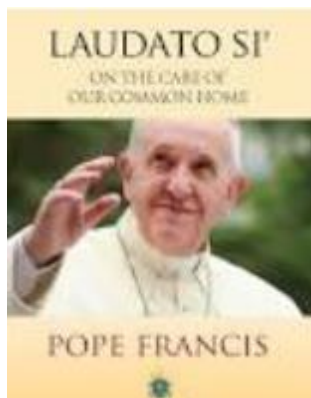
Reducing carbon footprint through this Lenten fast fit into NDP's curriculum in many ways. NDP is a green school and this project served as an activity to help renew that certification. Religion classes used Pope Francis' encyclical, *Laudato Si*, as an important way to remind students of their responsibility to care for creation as global citizens. Math classes used the "Problem of the Week" to foster student understanding of the data analysis used to solve environmental issues and conservation efforts. Sixth graders spent some of their advisory time (a) defining what a carbon footprint is and (b) calculating their own carbon footprint score by using a survey tool. Getting a tangible score for their individual footprint inspired students to increase their efforts and commit to reducing their personal carbon footprint. That tangible score is believed to be one reason why sixth graders led the effort week after week with the highest percentage of participation in No Waste Wednesday. Eighth grade science classes promoted the effort with poems and art that they shared on WNDP. Weekly chapel gatherings included prayer reflections on the importance of caring for all creation. One middle level extra-curricular activity offered a unique opportunity to showcase conservation, and that was the annual NDP Middle Made fashion design competition, using only recyclable materials. This year, with a theme of "Beauty in Nature," more than 20 teams—each with two designers and a model—participated in the competition. The main corridor transformed into their runway. Expanding on this competition in the future would be a real opportunity for the students to create practical clothing ideas that recycle or re-purpose supplies or materials in their closets.

The parent e-bulletin, WNDP, all-school announcements, charts and tables were primary ways that students communicated their efforts and example to the larger NDP community of parents, upper level students (800), potential new students, and visiting grandparents on grandparent's day. Through their efforts students became an example to others and created a deeper community awareness of care for creation. Middle level efforts also encouraged the upper level Green School club to join the effort and help the entire student body learn more about single-stream recycling and how to take advantage of using the single-stream trash cans on campus and recycling bins in each classroom. Students carry their learned behaviors from school to their homes and wider communities. Inspiring each student to be her best and do her best to care for creation by reducing her personal carbon footprint over 40 days has created—we hope—a new habit that will help each student stay committed to the cause.



Carbon Footprint Fast

for LENT 






No Waste Wednesday Participation				
Grade	# students	14-Feb	21-Feb	28-Mar
6th	59	22%	36%	56%
7th	60	18%	22%	23%
8th	61	13%	13%	31%
Total	180	18%	23%	37%

***Participants brought a reusable bottle & drank water during the day & did not use plastic utensils.**





What is your GREEN IQ?

 Energy Audit				
# of Classrooms	# Lights off	# watts per light	# hours	# watts saved per day
14	8	32	8	28,672
Total Kilowatts saved:		143.4	Total \$ Savings	\$ 14.34
Potential savings \$ per year			\$ 745.47	

4ft 4000k T8 LED
Tube Light, Ballast
Bypass

Product Description

The DELux LED DLX 236-T8 is a high quality Energy Star rated LED light bulb that is 4 Ft, 2000 lumen, 4000 kelvin, replaces 32 watt florescent, draws 20 watts. This is a ballast bypass LED T8 tube light*.

Assumptions:

- hours in a day 7:30 a.m. - 3:30 p.m.
- row of classroom lights = 8 light fixtures
- Each light fixture uses 2 T-8s
- 4 foot lamp T-8 draws 32 watts

Total Watts saved = (number of watts conserved per day * 5 days)/1000
 * 2/28 Middle Level was on field trips, 3/21 school closed for snow



STEAM CLUB celebrates St. Patrick's Day with a Green IQ survey!



PURIFIED WATER STATIONS

PURIFIED WATER STATION USAGE		Numerical Data from Water Station Counters						
<i>Helped eliminate waste from</i>		2/14/2018	2/21/2018	3/7/2018	3/28/2018	+/- 2/21	+/- 3/7	+/- 3/28
Middle Level Hallway	589	26,701	26,872	27,080	27,290	171	208	210
Middle Level Gym	1,978	31,341	31,989	32,644	33,319	648	655	675
Dining Room (East side)	1,736	45,281	45,677	46,335	47,017	396	658	682
Dining Room (West side)	1,649	40,008	40,330	41,116	41,657	322	786	541
Totals	5,952	143,331	144,868	147,175	149,283	1,537	2,307	2,108
<i>disposable plastic bottles.</i>		* 2/28 Middle Level was on field trips ,3/14 No Data, 3/21 snow storm. There are a total of 10 purified water stations but these stations are the ones primarily used by middle level students.						





Newspaper pots <https://youtu.be/7dlGQP81yfo>



Snow Day caused STEAM assembly for Middle Level garden on first day of Spring to be rescheduled in May. On earth day we will celebrate, “End Plastic Pollution” day!

FINDING WAYS to HELP MAKE OUR DINING ROOM MORE ENVIRONMENTALLY FRIENDLY



STEAM CLUB Representatives INTERVIEW NDP's FOOD SERVICE MANAGER Mrs. Barry

1. How can we limit the waste in the kitchen?

Kitchen recycles all boxes and bags that food is delivered in. You can't control the type of material the company decides to deliver it in. When available, the cafeteria sends back containers to be reused by the company.

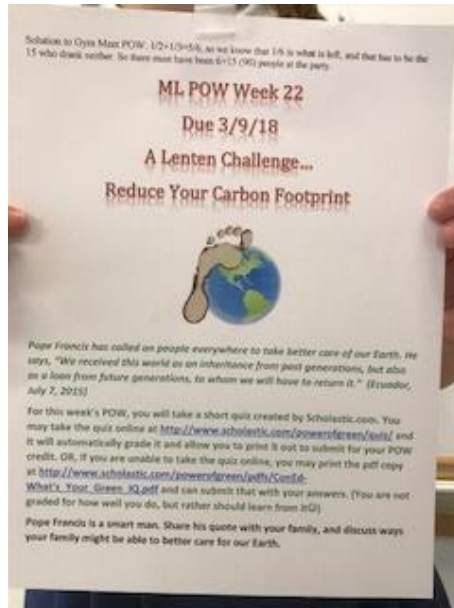
2. Can we use a different material other than Styrofoam that would benefit the environment?

Yes, but it would be more expensive. Styrofoam can be recycled but not often. Pasta are served in a biodegradable plate. Biodegradable plates cost 3 to 4 times more. If we used bio plates, lunch prices would go up. Styrofoam doesn't leak for the drinks and doesn't burn people's hands or get hot. It's a liability/hazard. It would be better to reduce it, not get rid of Styrofoam.

3. What are some other ways that the cafeteria can be more environmentally friendly?

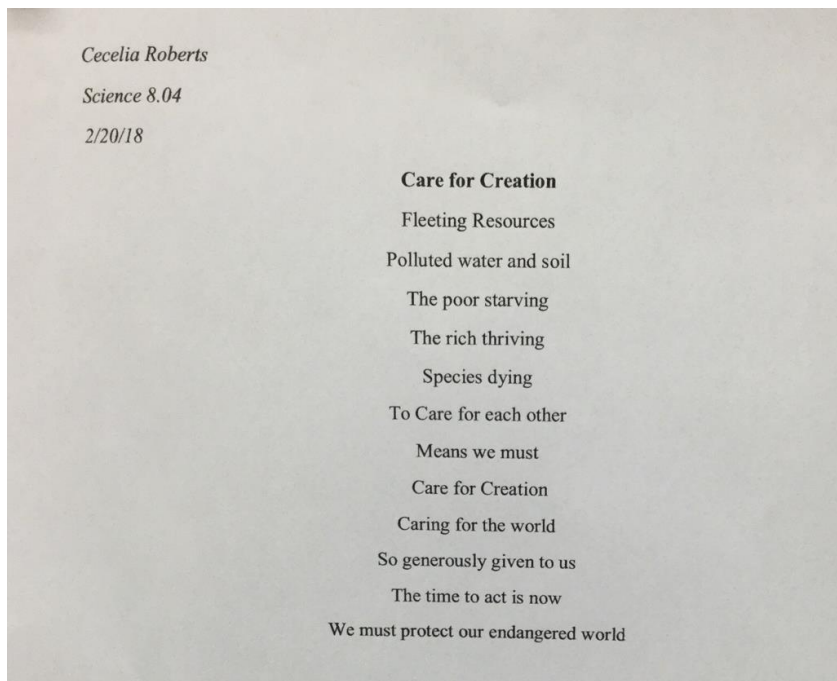
- People who bring their lunch should take their trash home to recycle/throw out at home. It would cut back on the trash in the lunchroom.
- People could bring their own forks, knives, and spoons to cut back on the plastic utensils use.
- Approaching the issue of recycling with a fun and positive perspective (incentive, game, competition) instead of reprimanding/lecturing.

IN MATH CLASS



Students solve MATH problem of the week related to Carbon Footprints

IN SCIENCE CLASS



WNDP Morning Announcements



We are here today to talk a little bit about a letter written by Pope Francis – Laudato Si. In this letter, Pope Francis calls us to think about how we are shaping the future of our planet. He reminds us that we are all responsible for caring for God's creation. The earth is one of God's greatest gifts to us. In science class, the 8th grade has been considering this call from Pope Francis. We were challenged to think of a way to convey the Pope's message to others. We would like to share a poem that we wrote in our class. Other students will also be coming on WNDP to share.

Read poem – I will have an image of your poem to project as you read your poem.

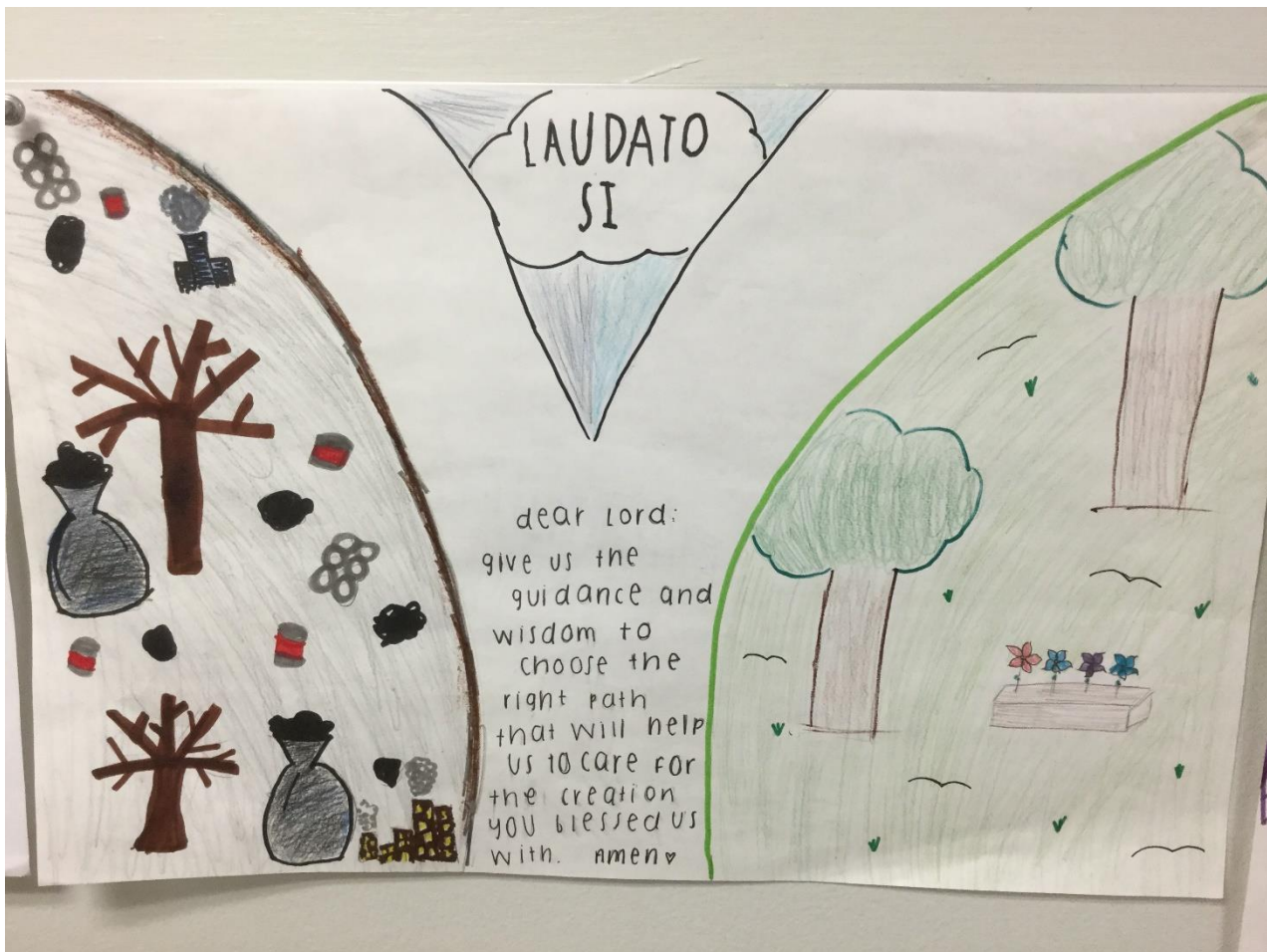
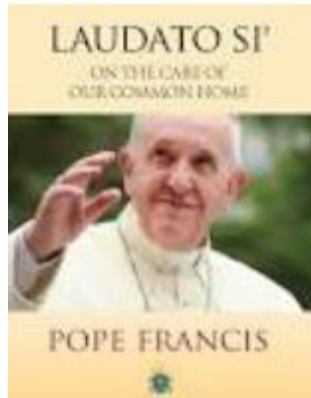


The earth is like a pet
take care of it and God's plan will
be met
Keep the clouds white and
bright
so it will stay a beautiful sight
Keep the earth clean and
neat
so we can eat our beets and
wheat
Always remember to recycle
your trash
so it won't end up in a big
mash
God gave us this gorgeous
place
treat it like your home, your
base
Think about the birds and
the trees
the flowers, vines, and the bees
God gave us this as
a gift

we want to keep the water
clean and adrift
God loves us with all
his heart
keep his creation like a work
of art



MORNING CHAPEL





Morning prayer

music from *Desert Spirit*

Native American flute music

CHAPEL PRAYER LED by Middle Level Campus Minister

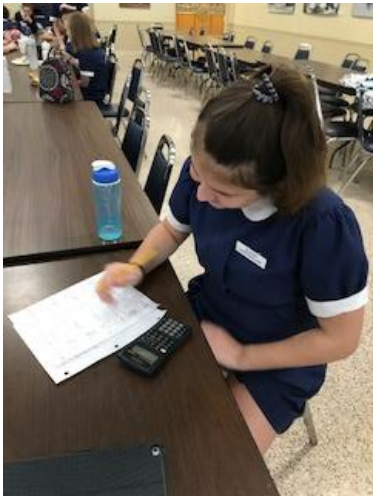
All-powerful God, you are present in the whole universe
and in the smallest of your creatures.
You embrace with your tenderness all that exists.
Pour out upon us the power of your love,
that we may protect life and beauty.
Fill us with peace, that we may live
as brothers and sisters, harming no one.
O God of the poor,
help us to rescue the abandoned and forgotten of this earth,
so precious in your eyes.
Bring healing to our lives,
that we may protect the world and not prey on it,
that we may sow beauty, not pollution and destruction.
Touch the hearts
of those who look only for gain
at the expense of the poor and the earth.
Teach us to discover the worth of each thing,
to be filled with awe and contemplation,
to recognize that we are profoundly united
with every creature
as we journey towards your infinite light.
We thank you for being with us each day.
Encourage us, we pray, in our struggle
for justice, love and peace.

From *Laudato Si* by Pope Francis

Middle Made FASHION Designn SHOW of Dresses Made of Recyclable Materials



STEAM CLUB Compiling CARBON FOOTPRINT STATISTICS



Carbon Footprint Worksheet



Circle the letter that best answers the following questions, and then use the Scoring Instructions to calculate your "carbon footprint" – the effect your family has on the climate in terms of greenhouse gasses you produce measured in units of carbon dioxide.

- 1. How do you get to school?**
A. Walk or ride your bike C. Car
B. Motorcycle D. Bus or van
- 2. What kind of vehicle(s) do your parents drive?**
A. None (Don't own a vehicle) C. Car
B. Motorcycle only D. SUV, van or truck
- 3. How often does someone in your family fly in a plane?**
A. Less than once per month C. 2 to 4 times per month
B. Once per month D. Once or more per week
- 4. How often does your family eat out or order food at a restaurant?**
A. Never C. Once per week
B. Once per month D. Twice or more per week
- 5. What kind of food does your family eat?**
A. Home grown or raised C. Store bought only
B. Combination of store bought and home grown
- 6. How many carbonated drinks (soda or pop) do you drink?**
A. None C. 2 cans per day
B. 1 can per day D. 3 or more cans per day
- 7. How often does your family do laundry?**
A. Once per month C. Once per week
B. Twice per month D. Twice or more per week
- 8. Do you get newspapers or magazines at home?**
A. Yes B. No
- 9. Do you turn the lights off when not needed?**
A. Yes B. No
- 10. Do you turn off your computer, video games or other electronics when you're not using them?**
A. Yes B. No
- 11. What type of fuel or energy is used to heat your home?**
A. Wood C. Oil
B. Propane D. Natural gas
- 12. Does anyone in your home own any of the following items? (Circle all that apply.)**
A. TV F. Dishwasher
B. Cell phone G. Refrigerator
C. DVD player H. Motorcycle, snowmobile, quad
D. Computer I. Motorboat
E. Washing machine

SCORING INSTRUCTIONS: For questions 1 through 11, assign 1 point for each A answer, 2 points for each B, 3 points for each C and 4 points for each D. For question 12, assign 1 point for each item circled. Add the points together to determine your "carbon footprint."

13 – 20 Points:
Green is your favorite color.
Keep up the good work.

21 – 28 Points:
Very good.

29 – 36 Points:
Your efforts are appreciated.

36 – 43 Points:
There's room for improvement.

44 – 46 Points:
Look for ways to become better
friends with Mother Nature.

A Note About Your Carbon Footprint

As this worksheet shows, the more you consume, the greater your carbon footprint. Each time something is consumed, the earth's natural resources are used. By knowing your carbon footprint, you can understand how the earth is impacted and identify ways to protect natural resources.

ML POW Week 22

Due 3/9/18

A Lenten Challenge...

Reduce Your Carbon Footprint



Pope Francis has called on people everywhere to take better care of our Earth. He says, “We received this world as an inheritance from past generations, but also as a loan from future generations, to whom we will have to return it.” (Ecuador, July 7, 2015)

For this week’s POW, you will take a short quiz created by Scholastic.com. You may take the quiz online at

<http://www.scholastic.com/powerofgreen/quiz/> and it will automatically grade it and allow you to print it out to submit for your POW credit. OR, If you are unable to take the quiz online, you may print the pdf copy at

<http://www.scholastic.com/powerofgreen/pdfs/ConEd->

[What's Your Green IQ.pdf](#) and can submit that with your answers. (

Pope Francis is a smart man. Share his quote with your family, and discuss ways your family might be able to better care for our Earth.

WHAT'S YOUR GREEN IQ?

Test your energy smarts with this quiz.

1. **Which saves the most energy?**
 - a) Taking a hot bath
 - b) Taking a warm bath
 - c) Taking a hot shower
 - d) Taking a warm shower

2. **Using a gas range or oven is not a safe way to heat a home.**
 - a) True
 - b) False

3. **What temperature should you set your thermostat to in the summer?**
 - a) 78 degrees
 - b) 70 degrees
 - c) 88 degrees
 - d) 65 degrees

4. **How can you ensure your heating and cooling systems are running efficiently?**
 - a) Buy Energy Star-rated appliances
 - b) Replace filters regularly
 - c) Keep all air vents clean
 - d) All of the above

5. **What should your family do if you see a power line that has been knocked down by a large tree branch?**
 - a) Unplug all the appliances in your home
 - b) Call a tree-cutting company
 - c) Call the electric company and the police
 - d) Call the cable company

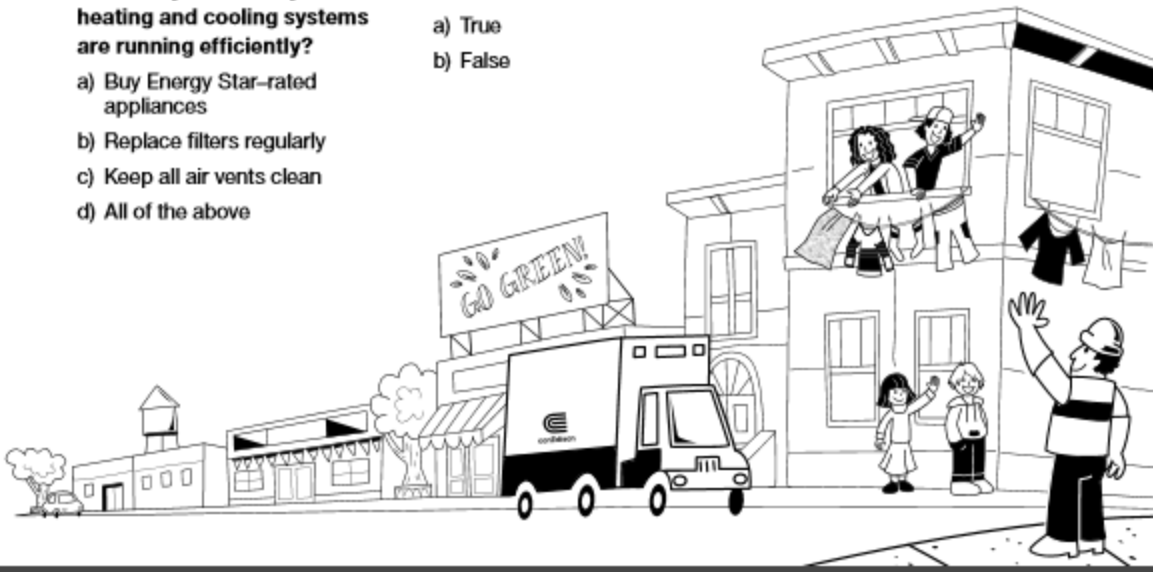
6. **When is it a good idea to use a ceiling fan to circulate indoor air?**
 - a) Winter
 - b) Summer
 - c) Spring
 - d) All year

7. **Phone and computer chargers only draw energy when in use.**
 - a) True
 - b) False

8. **Which uses less energy?**
 - a) A ceiling fan
 - b) An air conditioner

9. **What are three things you can do every day to save energy?**

Answer Key for Quiz:
 1. d; 2. a; 3. a; 4. d; 5. c; 6. d; 7. b; 8. a; 9. Possible answers include: turning off lights when I leave the room, unplugging computer chargers when not in use, and taking a short shower instead of a bath.



Resources:

Websites:

"International Solidarity Reflection: February 2018." *SSND Congregational Website*, 22 Jan. 2018, gerhardinger.org/international-solidarity-reflection-february-2018/?bblinkid=82136366&bbemailid=6995227&bbejrid=541223636.

What's Your Green IQ? An Energy Conservation Quiz From ConEdison, www.scholastic.com/powerofgreen/quiz/.

<https://www.youtube.com/watch?v=A9VkMB9P6Es>

Videos:

?https://safeshare.tv/submit?url=https%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3DYseZXKfT_yY

<https://safeshare.tv/submit?url=https%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3Dnf8QHkSZr88%26feature%3Dyoutu.be>