



Make Me Green

Student Outreach Leader's Guide



Make Me Green

Dear Elfun program leader:

Are you ready to meet the future? The youngsters you will be working with as you present the **Make Me Green** program will be our colleagues and customers in just a few short years. Their ideas, beliefs, and imaginations will shape the world we live in. And you have the chance to use science to help them take hold of that world. This guide will show you how.

Overview

We have developed materials for three **Make Me Green** learning activities to use with students in grades 3-6. The first two are designed to raise awareness about the importance of conserving energy; they provide ideas for reducing energy use in the home. The third is designed to raise awareness about the importance of conserving water; it provides ideas for reducing water use in the home.

Activity 1: Sticker Shock

As they play this game, students will match some familiar energy-saving behaviors with “price tags” that show how much money and how much energy each would typically save over the course of a year.

Activity 2: Vampire Hunt

This activity introduces the concept of “vampire” electronic devices that drain energy even when they are supposedly turned off. Students become “vampire chasers” to brainstorm and identify as many energy vampires as they can.

Activity 3: Slow the Flow

In this activity, students are introduced to facts that reinforce the importance of conserving our water supply. Then students unscramble sentences to identify water-saving tips.

Presentation Tips

If you are new to engaging with youngsters, the following tips can help you prepare for a fun and effective presentation.

Attitude

It's important to approach students with an open, friendly, and upbeat attitude. Let them know that you are excited about getting to know them and about having the chance to share your enthusiasm for our work at GE. Try to model the attitude we want to promote in today's youngsters—curiosity, respect for other people's ideas, and a keen interest in learning.

Expectations

To help students stay focused, it is important to establish your expectations up front. For example, do you want questions during your presentation (generally best for this age group) or at the end? Do you want students to raise their hands when they have comments or questions (again, generally the best approach), or should they simply speak out? The activities in this guide are designed to be fun for the students and for you, but it's no fun for anyone if things get out of control.

Flexibility

This guide should help you feel well-prepared for your presentation, but when you're working with youngsters, it's also important to remain flexible so that you are ready to take advantage of “teachable moments”—when something unexpected happens that provides an opportunity to make an important point or connection. Listen for that unanticipated comment, look for that unexpressed question, and take a break from your presentation plan to create a moment of real insight.

The Opening

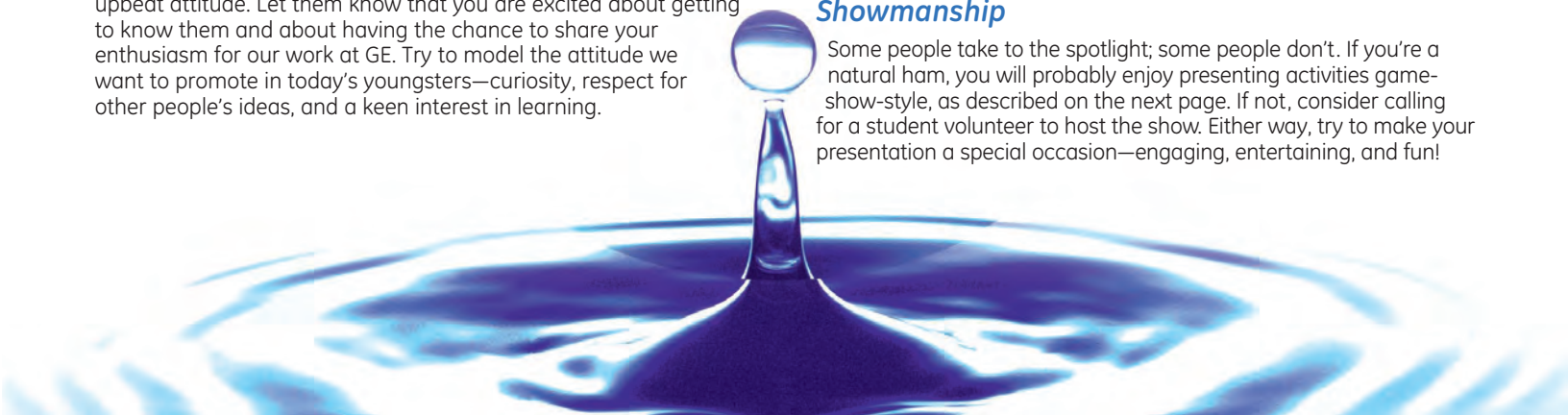
Try to capture your students' attention with the first words you speak. Your opening should let students know immediately that what you have to tell them will be interesting and fun. For example, you could start a presentation about energy conservation with the rhetorical question, “Are you ready to get energized?” And you might start a presentation on water conservation with this riddle: What runs and runs but never gets tired? (The answer is water flowing from a faucet.) It also would be a good idea to make sure the students understand what conservation is. Explain that we practice conservation when we protect something from waste or loss.

Introductions

Be sure to spend a minute talking about yourself. Tell the students where you work and what you do at GE, or—if you are retired—what you used to do, and maybe something about your background. This also would be a good time to say a little bit about the GE *ecomagination* program. Ask students where the word *ecomagination* may have come from, then explain that the word combines *imagination* and *ecology* to represent GE's commitment to imagine and build innovative solutions to today's environmental challenges. Thanks to *ecomagination*, the people at GE are constantly coming up with new ideas for cleaner sources of energy, more efficient appliances, and technologies to provide everyone with enough clean water. If you have specific examples of how the *ecomagination* program is working, talk about them now. Remember, this is your chance to help the students feel that they know you and to help them feel a personal connection to GE.

Showmanship

Some people take to the spotlight; some people don't. If you're a natural ham, you will probably enjoy presenting activities game-show-style, as described on the next page. If not, consider calling for a student volunteer to host the show. Either way, try to make your presentation a special occasion—engaging, entertaining, and fun!



How to Use the *Make Me Green* Activities

Activity 1 *Sticker Shock*

Advance Preparation: If you plan to post the cards on the board or a wall rather than projecting the images, cut out the pictures and price tags. Enlarge each one before printing it. (To lengthen the life of the cards, have your local quick-print shop laminate them.)

The Presentation: Introduce this activity by asking students to name some ways we can save energy around the home. They will probably have plenty of ideas—turning off lights when you leave a room, turning down the thermostat, using cold water when you can, etc. Make the point that most of us know how to save energy, but not many people know *how much energy—and how much money*—they actually are saving!

Post the picture cards in one row and the price tags in a second row, or project the images on a white board. Explain that you are going to play a game to help students find out how much they can save by conserving energy. Point out the 5 energy-saving behaviors described on the cards and the 5 price tags that show different amounts of savings. Explain that these figures are averages, because energy costs are different in different parts of the country. Ask the group which behavior they think pays off with the biggest savings (Price Tag A). Then choose one student to give an answer while allowing the rest of the group to offer suggestions and encouragement.

Reveal that the correct answer is behavior Number 3, *Lower the heat by 1 degree on your thermostat*. Help students see the basis for this answer by reminding them that it takes a lot of energy to heat a whole home, and that saving even a small portion of so much energy can mean very big savings.

Build on this reasoning by asking students to name the behavior they think will yield the smallest savings (Price Tag E). Again, choose one student to give the answer. Ask the student to explain the reasoning behind his or her choice. Then reveal that the correct answer is behavior Number 4, *Lower the temperature on your water heater by 1 degree*. Remind students that a water heater holds a much smaller volume than a whole house, and even though it operates at a higher temperature, it has the home heating system to help it reach that temperature. So, any way you look at it, a water heater will use much less energy than a home heating system, which means lower potential savings.

Continue this game show routine through the remaining energy-saving behaviors and price tags, helping students articulate the rationale for each pairing. Then, wrap up the activity by emphasizing that every energy-saving behavior, big or small, contributes to energy conservation. If time permits, have students add up the total annual monetary savings for all five energy-saving behaviors for a whole year, and then determine how much 1,000 families would save. Next, raise the stakes by calculating the savings for 100,000 families (\$4.586 million) and for a million families (\$45.86 million) to close your presentation with a strong demonstration of the potential of everyday energy conservation. *Note:* If you are working with younger children, demonstrate by doing the math yourself and talk about just how big each number is.

Answers: 1-C, 2-D, 3-A, 4-E, 5-B. Total savings for one family: \$45.86. Total savings for 1,000 families: \$45,860. Source: www.willyoujoinus.com/usingenergywisely/energygenerator/

Activity 2 *Vampire Hunt*

Advance Preparation: None needed.

The Presentation: Set the stage for this activity by talking about how even small savings can add up and make a big difference when it comes to energy conservation. Then talk about “vampire” electronic devices—the ones that keep using energy even when they are turned off. Explain that they are easy to spot: They have a small light that glows all the time; it’s generally green when they are on and red when they are off. Tell the students that you want them to become “vampire chasers” and

brainstorm a list of as many energy vampires as they can. You can have students work in teams to come up with their lists and then write their ideas on the board as each group reports, or you can take the lead and invite ideas from the whole group, listing the energy vampires they “capture.” Add to the list if you can think of other items. Then point out that vampire devices consume more than \$10 billion worth of electrical power every year. That’s a huge amount of energy we could save simply by unplugging electrical devices when we are not using them! Have the students copy the list and take it home to see how many of the energy vampires they can hunt down, or create a list of your own in advance and provide each student with a copy. Encourage students to talk with their parents about which energy vampires they can eliminate by unplugging them when they are not in use.

Source: www.energystar.gov/index.cfm?c=about.vampires

Some common household energy vampires: computer, DVD player, DVR, laptop charger, microwave, phone charger, printer, television, video game console.

Activity 3 *Slow the Flow*

Advance Preparation: Cut out the cards and make a copy of each card, enlarging it when you make the copy. There are 5 cards for the bathroom, 5 for the kitchen, and 5 for outdoors. Each card displays one letter from the word “water.” Write one of these scrambled sentences on the back of each card. Hand them out and let students work in pairs to try and unscramble the sentences. When they’re done, provide time for sharing the answers.

Bathroom

long after a flush/and should fix it/**W**hen you hear/you have a toilet leak/running water
(When you hear running water long after a flush, you have a toilet leak and should fix it.)

down the toilet/**A**lways drop/in the trash can/facial tissue/instead of flushing it
(Always drop facial tissue in the trash can instead of flushing it down the toilet.)

your hands/teeth and lathering/**T**urn off the/while brushing your/faucet
(Turn off the faucet while brushing your teeth and lathering your hands.)

do it in/**E**very time you/5 minutes or less/take a shower
(Every time you take a shower, do it in 5 minutes or less.)

showerhead/**R**educe water/installing a water-saving/use by
(Reduce water use by installing a water-saving showerhead.)

Kitchen

a running faucet/ a partially-filled sink/**W**ash fruits/not under/and vegetables in
(Wash fruits and vegetable in a partially-filled sink, not under a running faucet.)

at the faucet/cold water/in the fridge/**A**lways keep/instead of filling your glass
(Always keep cold water in the fridge instead of filling your glass at the faucet.)

faucet tightly/so it/**T**urn off the/doesn't drip
(Turn off the faucet tightly so it doesn't drip.)

you run the/a full load/**E**very time/you have/dishwasher make sure/
(Every time you run the dishwasher make sure you have a full load.)

your dirty plate/**R**educe water/ while you scrape/the faucet off/use by turning
(Reduce water use by turning the faucet off while you scrape your dirty plate.)

Outdoors

their roots;/ the leaves/**Water** garden/don't water/plants at (Water garden plants at their roots; don't water the leaves.) running hose/sidewalks, driveways, and decks/with a broom/**Always** clean/ instead of a Always clean sidewalks, driveways, and decks with a broom instead of a running hose.

flow from a/a trigger nozzle/garden hose, use/**To** control the (To control the flow from a garden hose, use a trigger nozzle.)

wash the car/a running hose/**Every** time you/water instead of/use a bucket of (Every time you wash the car, use a bucket of water instead of a running hose.)

in the morning or evening/less intense/**Reduce** evaporation/the sun's heat is/by using lawn sprinklers/when the (Reduce evaporation by using lawn sprinklers in the morning or evening when the sun's heat is less intense.)

To lengthen the life of the cards, have your local quick-print shop laminate them. Also, before your presentation, ask the teacher if there is a map or globe available that you can use to show the students just how much of the planet is covered in water.

The Presentation: Introduce this activity by explaining that water is probably our most precious resource, because we cannot live without it. Point out that if you look at a picture of the earth, it may seem like there's a lot of water, because water covers about 70 percent of the earth's surface. But that's misleading, because 97 percent of that is salt water, which is not drinkable. So that leaves only 3 percent that is fresh water. And, most of the fresh water is frozen in glaciers or is too deep underground for drilling.

Tell students that they will have a chance to show just how much they know about using water. After you read each of the following statements aloud, stop and ask students to indicate, by a show of hands, whether they think the statement is true or false. (If possible, project each statement and note how many students vote *True* and *False*.) When you have read all the statements, explain that each one is true. The answers demonstrate why it's so important to think about how we use water and how we can conserve it!

- The average American uses about 100 gallons of water per day; the average African uses 2-5 gallons per day.
- A running toilet can use up to 200 gallons of water per day.
- Taking a bath requires up to 70 gallons of water; a 5-minute shower uses 10-25 gallons.
- You can save up to 4 gallons of water every morning by turning

off the faucet while you brush your teeth.

- In one year, the average American household uses more than 100,000 gallons of water.

Source: http://water.epa.gov/learn/kids/drinkingwater/water_trivia_facts.cfm

Next, divide the students into 5 teams. Give each team one of the cards from each of the 3 groups and allow several minutes for the students to work together to unscramble their water-saving tips. Point out that the first letter of the first word in each tip contains one of the letters in the word WATER, and provide time for each group to share their unscrambled tips when they are finished. If it is not possible to have students work in teams, you can conduct this as a whole-class activity by projecting the scrambled sentences or writing them out on the board, and then calling on students to unscramble them phrase by phrase.

Home Water-Saving Tips

Bathroom

When you hear running water long after a flush, you have a toilet leak and should fix it.

Always drop facial tissue in the trash can instead of flushing it down the toilet.

Turn off the faucet while brushing your teeth and lathering your hands. **Every** time you take a shower, do it in 5 minutes or less.

Reduce water use by installing a water-saving showerhead.

Kitchen

Wash fruits and vegetables in a partially-filled sink, not under a running faucet.

Always keep cold water in the fridge instead of filling your glass at the faucet.

Turn off the faucet tightly so it doesn't drip.

Every time you run the dishwasher, make sure you have a full load.

Reduce water use by turning the faucet off while you scrape your dirty plate.

Outdoors

Water garden plants at their roots; don't water the leaves.

Always clean sidewalks, driveways, and decks with a broom instead of a running hose.

To control the flow from a garden hose, use a trigger nozzle.

Every time you wash the car, use a bucket of water instead of a running hose.

Reduce evaporation by using lawn sprinklers in the morning or evening when the sun's heat is less intense.

Message to Parents and the *ecomagination* Family Challenge

To help extend this learning experience, we also have provided two versions of a letter for students to take home to their parents. One letter is specific to Earth Day, and the other letter can be used at any time. Both versions inform parents about what their child has learned about energy and water conservation and encourage them to **Make Me Green** by working with their child to put these conservation principles into practice around their own home. The reverse side of each letter contains a GE *ecomagination* Family Challenge, with ideas designed to involve family members in taking small steps at home each day to save energy and conserve water. Make at least one copy of the letter you wish to use for each of the students in your group. And to save paper, be sure to copy the GE *ecomagination* Family Challenge page on the reverse side of the letter.

You might want to fold the letters ahead of time and insert them in envelopes together with *I'm on the Green Team* stickers described below.

I'm on the Green Team Stickers

When your presentation is done, reward students for a job well done with *I'm on the Green Team* stickers. Just print them out and give one to each student. The stickers are formatted for printout on Avery 6572/6578 pre-cut label sheets, or equivalent. Suggest that students wear their stickers when they conduct their conservation exercises with their parents.



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Sticker Shock

Energy savings add up, whether you are saving a lot or just a little!



1. Replace 1 light bulb with a Compact Fluorescent Light (CFL).

A. Save \$23.15 per year and enough energy to power your home for more than 6 days.



2. Switch to cold water for 1 load of laundry each week.

B. Save \$9.88 per year and enough energy to power your home for more than 3 days.



3. Lower the heat by 1 degree on your thermostat.

C. Save \$7.05 per year and enough energy to power your home for nearly 2 days.



4. Lower the temperature on your water heater by 1 degree.

D. Save \$4.68 per year and enough energy to power your home for more than 1 day.



5. Use the microwave to cook 1 meal each week.

E. Save \$1.10 per year and enough energy to power your home for about 7 hours.



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Slow the Flow

R



Bathroom

R



Kitchen

R



Outdoors

E



Bathroom

E



Kitchen

E



Outdoors

T



Bathroom

T



Kitchen

T



Outdoors

A



Bathroom

A



Kitchen

A



Outdoors

W



Bathroom

W



Kitchen

W



Outdoors

I'm on the
Green
Team!



I'm on the
Green
Team!



I'm on the
Green
Team!



I'm on the
Green
Team!



I'm on the
Green
Team!



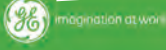
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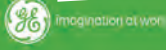
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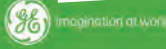
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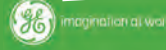
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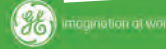
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I'm on the
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I'm on the
Green
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A Message to Parents

Today, a member of the GE team brought a special program, **Make Me Green**, to your child's classroom or activity group—a program with information about how each of us can help make the world a greener place by taking simple steps to conserve energy and water. We think the lessons your child learned today are important because in just a few short years, the children of today will be our leaders. It will be their knowledge, ideas, beliefs, and imaginations that will shape the world we live in.

Conservation is a guiding principle for us at GE. In 2005, we introduced the *ecomagination* initiative, which is our commitment to imagine and build innovative solutions to today's environmental challenges. It guides the way we operate our plants, design our products, and plan for the future. This **Make Me Green** student outreach program is an extension of that initiative.

We hope your child enjoyed learning about conservation today, and we hope you will continue the discussion at home. To help you get started, we are providing some background on the importance of energy and water conservation, along with some conservation tips. We've also provided a GE *ecomagination* Family Challenge with ideas designed to engage all family members in taking small steps at home each day that can add up to a significant savings in energy and water.

Saving Energy

Over the past 25 years, worldwide energy consumption has increased by about 60 percent, and experts predict that it will increase by another 30 percent over the next two decades. To meet this increasing demand, we need to develop new sources of energy, such as wind and solar power. But the most economical source for more energy is already available today—energy conservation. By finding ways to use energy more efficiently, we can slow down energy consumption and get more out of our current energy resources.

Here are some easy ways your family can save energy:

- Replace incandescent light bulbs with compact fluorescent lights.
- Always turn off lights when you are not using them.
- Unplug “vampire” electronic devices that consume electricity even when they are supposedly turned off.
- Lower the heat on your home thermostat.
- Keep your car tuned up and your tires properly inflated.

Saving Water

Worldwide, there are now more than 1 billion people who do not have enough water to meet their everyday needs. And that number is expected to rise to around 4 billion in coming decades. Even in the United States, there are many areas where water is already in short supply. Companies like GE are working to increase water resources by developing technologies to remove the salt from ocean water, but the most economical solution to our water shortage is conservation—finding ways to use water more efficiently and get more done with the water we have.

Here are some easy ways your family can save water:

- Repair or replace leaking faucets and toilets.
- Use the shower instead of the bathtub, and limit showers to 5 minutes or less.
- Turn off the faucet while brushing your teeth or lathering your hands and when washing dishes by hand.
- Wait until you have a full load before running your dishwasher or washing machine.
- Clean sidewalks and decks with a broom instead of a hose.

We hope that you will adopt some of these energy- and water-saving practices. Working together, with a combination of common sense and imagination, we can meet the resource challenges that face us and set an example of success for the next generation!



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A Special Earth Day Message to Parents

Today, in preparation for Earth Day 2012, which we will celebrate on Sunday, April 22, a member of the GE team brought a special program, **Make Me Green**, to your child's classroom or activity group. The program featured thought-provoking activities about how each of us can help to make the world a greener place by taking simple steps to conserve energy and water. The lessons your child learned today are important because in just a few short years, the children of today will be our leaders. It will be their knowledge, ideas, beliefs, and imaginations that will shape the world we live in.

Conservation is a guiding principle for us at GE. In 2005, we introduced the *ecomagination* initiative, which is our commitment to imagine and build innovative solutions to today's environmental challenges. It guides the way we operate our plants, design our products, and plan for the future. The **Make Me Green** student outreach program is an extension of that initiative.

We hope your child enjoyed talking about Earth Day and learning about conservation today, and we hope you will continue the discussion at home. To help you get started, we are providing some background on the importance of energy and water conservation, along with some conservation tips. We've also provided a GE *ecomagination* Family Challenge with ideas designed to engage all family members in taking small steps at home each day—not just on Earth Day—that can add up to a significant savings in energy and water.

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- Unplug “vampire” electronic devices that consume electricity even when they are supposedly turned off.
- Lower the heat on your home thermostat.
- Keep your car tuned up and your tires properly inflated.

Saving Water

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Here are some easy ways your family can save water:

- Repair or replace leaking faucets and toilets.
- Use the shower instead of the bathtub, and limit showers to 5 minutes or less.
- Turn off the faucet while brushing your teeth or lathering your hands and when washing dishes by hand.
- Wait until you have a full load before running your dishwasher or washing machine.
- Clean sidewalks and decks with a broom instead of a hose.

We hope that you will adopt some of these energy and water-saving practices. Working together, with a combination of common sense and imagination, we can make every day Earth Day and meet the resource challenges that face us and set an example of success for the next generation!



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GE Ecomagination Family Challenge *Make Me Green*

Conserving energy and water isn't hard, once you make being "green" a habit. Use these family challenges to have some fun as you get in the conservation groove!

Energy-Saving Challenge #1 *Reduce the Sticker Shock*

There are lots of things you can do to save energy and reduce your energy bill. A few of them are listed below. Assign a family member to be in charge of each one, and add a few more to the list. Then, at the end of each week, sit down together and review how well you are doing!

Write the name of the family member in charge above each column.

Only run the dishwasher when it is full, then air-dry the dishes instead of using the dishwasher's drying cycle.	Only run the washing machine when you have a full load, and use cold water for at least 1 load each week.	Make sure the thermostat stays 1 degree lower than you used to keep it.	Make sure the lights are off when no one is in a room.	Close the curtains and shades at night, and open them during the day.		

Energy-Saving Challenge #2 *Seek Out the Energy Vampires*

Energy vampires are electronic devices that keep using energy even when they are turned off. They are easy to spot—they have a small light that glows all the time. Find the energy vampires in your house. Give everyone a piece of paper and a pencil, and set the oven timer for 5 minutes. The person with the most vampires on his or her list when the timer goes off is your family's Super Vampire Sleuth. Then decide which vampires can be unplugged when they aren't in use and who will be in charge of making sure that happens!

Water-Saving Challenge #1 *Short-Shower Superstar*

We've all done it—used up all the hot water when we take a shower. And while a quick shower uses less water than a typical bath (10-25 gallons for a 5-minute shower, vs. 70 gallons for a bath), the longer we stay in that shower, the more water we use. So set a Short-Shower Standard for your family—5 minutes or less. But first, have some fun. See who can take the shortest shower! The family member with the quickest time becomes the *Short-Shower Superstar*.

Water-Saving Challenge #2 *Slow the Flow*

There are lots of other things we can do each day to save water. Some are listed here, with space for you to add a few more. See how many each family member can do in one week. Just write your initials in the space each time you help slow the flow. At the end of the week, count the initials to see who did the best job!

Slow the Flow Action

Family Member Initials

Turn off the faucet when brushing your teeth.	
Put bathroom trash like facial tissues or cotton balls in a trash can instead of flushing it down the toilet.	
Clean fruits and veggies in a partially filled sink, not under running water.	
Don't rinse dishes before putting them in the dishwasher.	
Clean sidewalks, driveways, and decks with a broom instead of a hose.	



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