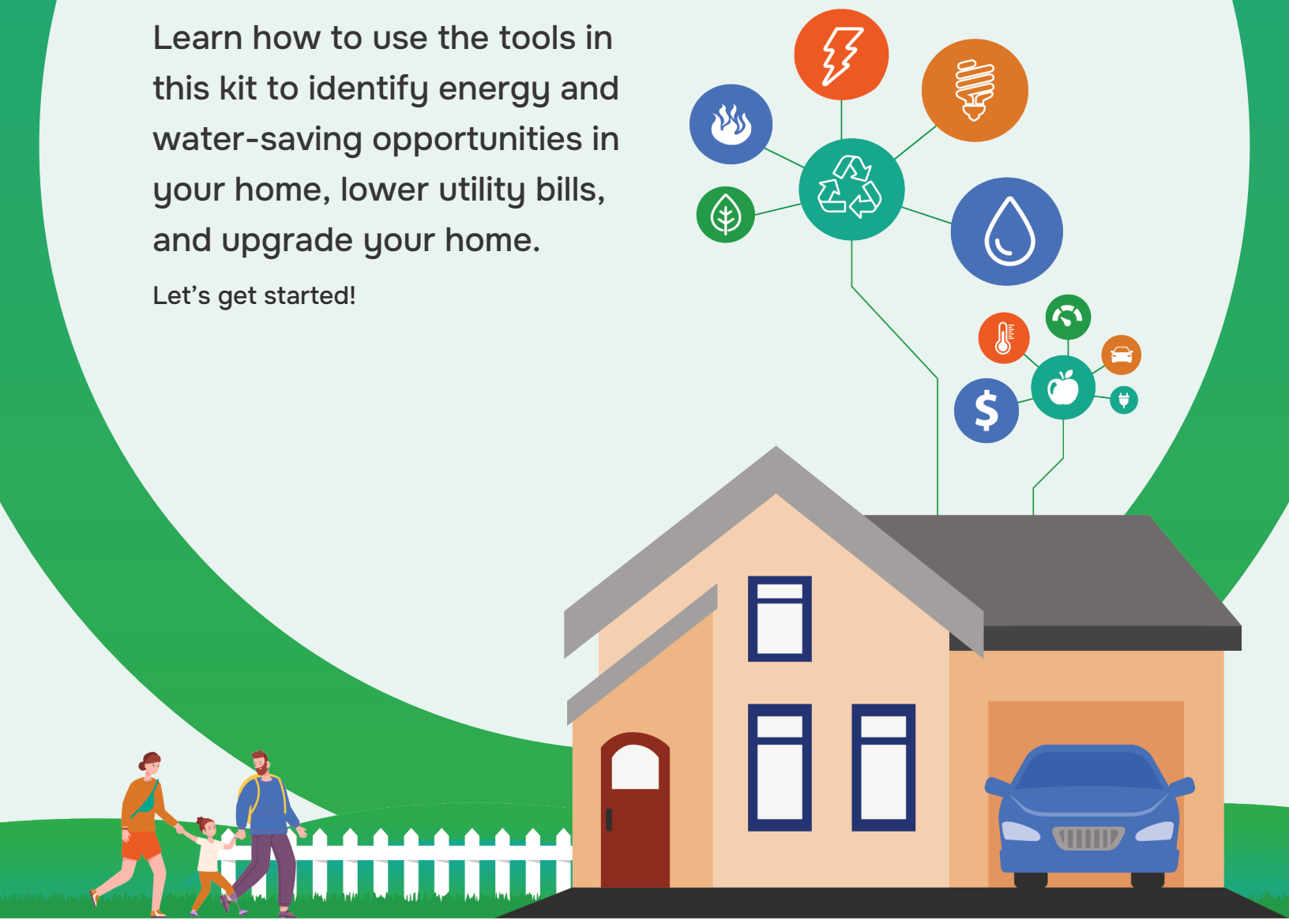
Check-It-Out! Home Energy and Water Savings Handbook

Learn how to use the tools in this kit to identify energy and water-saving opportunities in your home, lower utility bills, and upgrade your home.

Let's get started!



SAN MATEO COUNTY
Sustainability Department

Start Here

Discover the actions you can take in your home that will reduce your energy and water bills. This toolkit will also help you explore additional actions, information, and the latest rebates!

How to use this handbook

There are four sections to this handbook.

Instructions
What this toolkit has and how to use the handbook.

Energy
Information and actions on how to reduce home energy use.

Water
Information and actions on how to reduce home water use.

Resources & More
Websites, additional tips, and links to more actions.

There are two types of actions.



Toolkit Actions
These actions use items in the toolkit. All these actions are accessible to both homeowners and renters. If you rent, ask your landlord before making changes you are unsure about.

Add-on Actions
These are additional ideas to help you save energy and water.

Check out the San Mateo County Sustainability Department for more, then consider telling your friends or neighbors about this toolkit—get them excited and involved in conserving our valuable resources!
smcsustainability.org

Toolkit Inventory

Equipment: For you to install and keep. Please return anything you do not use.



LED (Light Emitting Diode) Bulbs
Replaces incandescent or compact fluorescent bulbs.



Low-Flow Showerhead
Reduces shower water use by injecting air into the water stream.



Weatherstripping
Seals air gaps in windows and doors.



Faucet Aerators (3)
Reduces water use by injecting air into the water stream.



Outlet Gaskets
Seals the void around your outlets.



Water Leak Detection Dye Tablets (2)
(not for consumption)

Tools: To be returned to the library with this kit.



Kill-A-Watt® Meter
Measures appliance energy use.



Drip Gauge
Measures how much water a leaky faucet is wasting.



Refrigerator Thermometer
Monitors the temperature in your refrigerator.



Pliers
Use to replace old faucet aerators and showerheads.



Infrared Laser Thermometer
Checks for heat loss by windows, vents, and doors.



Pipe Thread Seal Tape
Helps prevent leaks in your faucets and showerheads.



Air Quality Monitor
Measure carbon dioxide and fine particles in the air.



Thermometer
To check the temperature of your hot water supply.



Water Flow Rate Bag
Measures the true rate of flow of your faucets and showers.



Practical Plumbing Handbook
Additional water-saving tips.

If anything is missing from this toolkit, please notify your library staff!

Introduction to Energy Use

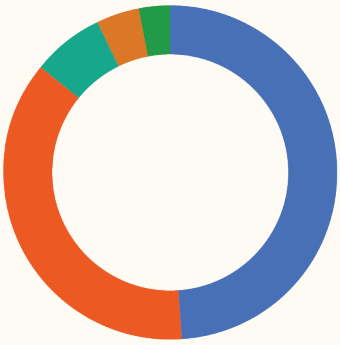
Average household energy use in California

Knowing how your home uses energy can help you use less and save money.



Electricity

- 22% Lighting
- 20% Electronics
- 20% Fridge & Freezer
- 18% Other
- 7% Air Conditioning
- 5% Heating
- 4% Dishwashing & Cooking
- 4% Laundry



Gas

- 49% Water Heating
- 37% Space Heating
- 7% Cooking
- 4% Other
- 3% Dryer

How much energy will this toolkit help me save?

We all use energy in our homes differently, so energy savings will vary. While EnergyStar® estimates that replacing one incandescent bulb with an EnergyStar® Certified CFL or LED bulb can save you $40 per year, these savings will depend on how often you use the light and the cost of your electricity, and the type of bulb.

Understanding units that measure energy

Lumens: How bright a lightbulb is. The higher the lumens, the brighter the light.

Watt (W): A measure of how much power a light, appliance, or device uses while it is on. For example, charging an electric car requires more watts than charging a small device like a smartphone.

Kilowatt (kW): A kilowatt is 1,000 watts.

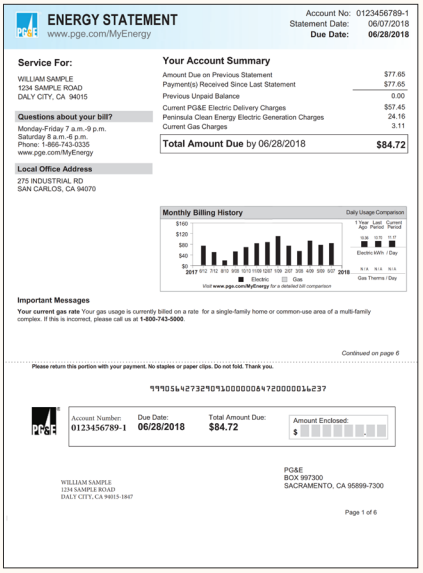
Kilowatt hour (kWh): How much total electricity that is consumed to create heat, light, or motion. To calculate this, multiple the wattage by the time. For example, a 60-watt (60W) light bulb when turned on for 1 hour consumes 60 watt-hours or 0.06 kWh of energy. In 2025, the median usage of a PG&E customer in San Mateo County was 319 kWh per month per household (note: this number does not include Los Banos).

Therm: The energy equivalent of burning 100 cubic feet of methane gas. The typical PG&E residential customer uses an average of 34 therms per month per household.

Understand Your Energy Bill

By understanding your PG&E bill, you will have a baseline of what you are paying for energy. This way, you can compare how much you are paying from month to month after taking the actions in this handbook.

Find your latest PG&E bill and identify the following:


ENERGY STATEMENT
www.pge.com/MyEnergy

Account No: 0123456789-1
Statement Date: 06/07/2018
Due Date: 06/28/2018

Service For:
WILLIAM SAMPLE
1234 SAMPLE ROAD
DALY CITY, CA 94015

Your Account Summary

Amount Due on Previous Statement	$77.65
Payment(s) Received Since Last Statement	$77.65
Previous Unpaid Balance	0.00
Current PG&E Electric Delivery Charges	$57.45
Peninsula Clean Energy Electric Generation Charges	24.16
Current Gas Charges	3.11
Total Amount Due by 06/28/2018	**$84.72**

Questions about your bill?
Monday-Friday 7 a.m.-9 p.m.
Saturday 8 a.m.-6 p.m.
Phone: 1-866-743-0335
www.pge.com/MyEnergy

Local Office Address
275 INDUSTRIAL RD
SAN CARLOS, CA 94070

Monthly Billing History

Important Messages
Your current gas rate Your gas usage is currently billed on a rate for a single-family home or common-use area of a multi-family complex. If this is incorrect, please call us at **1-800-743-5000**.

Continued on page 6

Please return this portion with your payment. No staples or paper clips. Do not fold. Thank you.

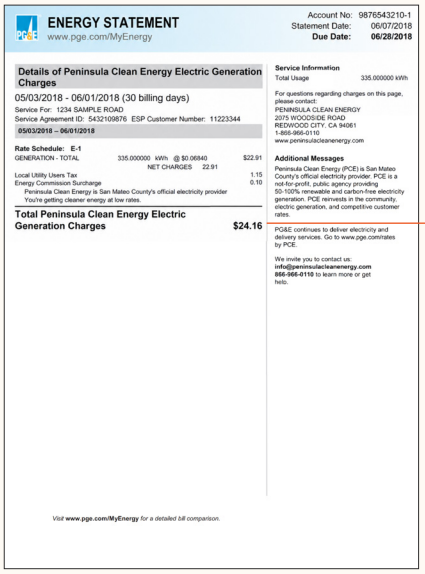
Account Number: 0123456789-1 | Due Date: 06/28/2018 | Total Amount Due: $84.72 | Amount Enclosed: $

PG&E
BOX 997300
SACRAMENTO, CA 95899-7300

WILLIAM SAMPLE
1234 SAMPLE ROAD
DALY CITY, CA 94015-1847

Electricity Delivery Charges
Charges for PG&E to deliver electricity to your home.

Total Amount Due


ENERGY STATEMENT
www.pge.com/MyEnergy

Account No: 9876543210-1
Statement Date: 06/07/2018
Due Date: 06/28/2018

Details of Peninsula Clean Energy Electric Generation Charges
05/03/2018 - 06/01/2018 (30 billing days)
Service For: 1234 SAMPLE ROAD
Service Agreement ID: 5432109876 ESP Customer Number: 11223344
05/03/2018 – 06/01/2018

Rate Schedule: E-1

GENERATION - TOTAL	335.000000 kWh @ $0.06840		$22.91
	NET CHARGES	22.91	
Local Utility Users Tax			1.15
Energy Commission Surcharge			0.10
Peninsula Clean Energy is San Mateo County's official electricity provider			
You're getting cleaner energy at low rates.			
Total Peninsula Clean Energy Electric Generation Charges			**$24.16**

Service Information
Total Usage 335.000000 kWh

For questions regarding charges on this page, please contact:
PENINSULA CLEAN ENERGY
2075 WOODSIDE ROAD
REDWOOD CITY, CA 94061
1-866-966-0110
www.peninsulacleanenergy.com

Additional Messages
Peninsula Clean Energy (PCE) is San Mateo County's official electricity provider. PCE is a not-for-profit, public agency providing 50-100% renewable and carbon-free electricity generation. PCE reinvests in the community, electric generation, and competitive customer rates.

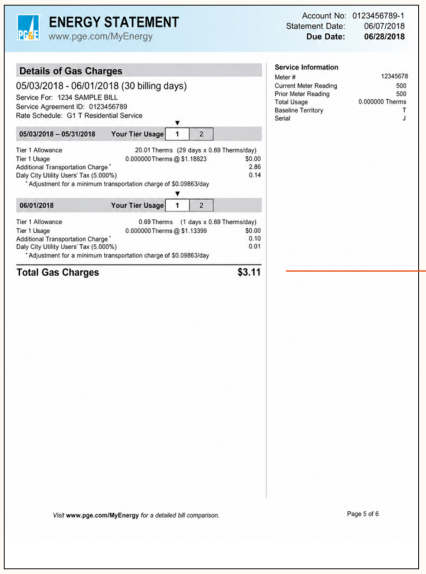
PG&E continues to deliver electricity and delivery services. Go to www.pge.com/rates by PCE.

We invite you to contact us: **info@peninsulacleanenergy.com** **866-966-0110** to learn more or get help.

Visit **www.pge.com/MyEnergy** for a detailed bill comparison.

Electricity Usage
In kWh.

Electricity Generation Charges
Charges for generating the electricity. The public agency WestLight Energy (formerly known as Peninsula Clean Energy) purchases clean energy for San Mateo County residents.


ENERGY STATEMENT
www.pge.com/MyEnergy

Account No: 0123456789-1
Statement Date: 06/07/2018
Due Date: 06/28/2018

Details of Gas Charges
05/03/2018 - 06/01/2018 (30 billing days)
Service For: 1234 SAMPLE BILL
Service Agreement ID: 0123456789
Rate Schedule: G1 T Residential Service

05/03/2018 – 05/31/2018 Your Tier Usage: 1 | 2

Tier 1 Allowance	20.01 Therms (29 days x 0.69 Therms/day)	
Tier 1 Usage	0.000000 Therms @ $1.18823	$0.00
Additional Transportation Charge *		2.86
Daly City Utility Users' Tax (5.000%)		0.14

* Adjustment for a minimum transportation charge of $0.09863/day

06/01/2018 Your Tier Usage: 1 | 2

Tier 1 Allowance	0.69 Therms (1 days x 0.69 Therms/day)	
Tier 1 Usage	0.000000 Therms @ $1.13399	$0.00
Additional Transportation Charge *		0.10
Daly City Utility Users' Tax (5.000%)		0.01

* Adjustment for a minimum transportation charge of $0.09863/day

Total Gas Charges **$3.11**

Service Information

Meter #	12345678
Current Meter Reading	500
Prior Meter Reading	500
Total Usage	0.000000 Therms
Baseline Territory	T
Serial	J

Visit **www.pge.com/MyEnergy** for a detailed bill comparison.

Gas Usage
In therms. The tier indicator shows the pricing level in which you are being charged, based on how much energy you use.

Total Gas Charges
Total gas charges, including taxes and fees.

REDUCING ENERGY USE

Appliances

Household electronics account for up to 15% of electricity consumption in a typical California home. Small appliances and electronics can consume up to 75% of the electricity when on standby mode as they do when they are on!

ACTION 1

Use the Kill-A-Watt® meter

The Kill-A-Watt® meter measures how much energy appliances and electronics use, including energy wasted when they are plugged in but turned off. Use the table to compare the energy use of your appliances to the average use.

1. Plug the meter into an outlet, then plug an appliance or electronic device you'd like to measure into the meter. You may need to wait a few seconds for the reading to display.
2. Push the "DOWN" button until "Watt" appears as the unit.
3. Measure the wattage when the appliance is both on and off. How much wattage does your appliance draw even when it is off?
4. Make sure you press the reset button before measuring a new appliance.

AVERAGE OPERATING CONSUMPTION OF OPERATING STANDARD APPLIANCES

Appliance	Watts
Clothes dryer	1,800-5,000
Dishwasher	1,200-2,400
Clothes Iron	1,000-1,800
Vacuum Cleaner	1,000-1,400
Toaster	800-1,400
Heater	750-1,500
Microwave	750-1,100
Refrigerator	725
Computer	270 awake, 60 asleep
Flat-screen TV	120
DVD Player	20-25

WHAT YOU NEED

Kill-A-Watt® Meter



INSTRUCTIONAL VIDEO

sustainsmc.org/killawattmeter

ADD-ON ACTIONS

Install smart strips

Use a smart power strip for TVs, computers, and related devices. It can sense and turn off devices in standby mode while leaving others on.

TIME RECOMMENDED ★★★



Unplug electronics

Manually unplug toasters, coffee makers, battery chargers, and similar items after you are done using them.

TIME RECOMMENDED ★★★

Appliances

Major appliances like furnaces, air conditioners, water heaters, and refrigerators combined can account for over 50% of household energy use.

ACTION 2

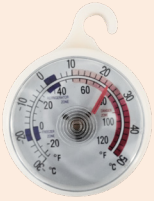
Measure refrigerator temperature

Use the Refrigerator Thermometer to help set the best temperatures for your refrigerator and freezer:

1. Place thermometer in the refrigerator between several food items.
2. After 20 minutes, record the temperature.
3. Adjust temperatures if it is outside the target range: 36-40°F for refrigerator and 0-5°F for freezer. Check for cracks in the door seal by closing the door on a piece of paper and tugging. If the paper moves easily, then you need to replace the seal.
4. Repeat these actions with your freezer.

WHAT YOU NEED

Refrigerator Thermometer



ADD-ON ACTION

Check the age of your water heater

If you have access to your water heater, locate the manufacturer's sticker on the tank, write down the serial number, and search up the brand to decode the date from the serial number. There also may be a printed production date.

If your water heater is over 10 years old, it may fail at any time. Replacing gas water heaters with a high-efficiency electric heat-pump water heater (HPWH) can be one of the biggest actions to save energy in your home. Getting a jump start on planning and potential electrical work needed can help ensure a smooth transition.

When replacing gas furnaces and air conditioning (HVAC) that are over 15 years old, consider checking out heat pump HVAC options, which can similarly save you money and energy.

Check out the QR code for information on rebates, programs, and policies that phase out methane gas appliances.

TIME

RECOMMENDED

★★★



ADDITIONAL INFORMATION

sustainsmc.org/goelectric

Appliances

ADD-ON ACTIONS

Plant trees

Trees planted in strategic positions to provide shade and block wind can cut heating and cooling costs by up to 25%. Call 811 before you dig to ensure you don't hit any utility lines.

Local recommended trees:
sanmateocountytrees.org/tree-lists/



TIME RECOMMENDED

★★★

Adjust heating/cooling defaults

If possible, set your winter heating temperature to 68°F or lower and set your summer cooling temperature to 78°F or higher.

TIME RECOMMENDED

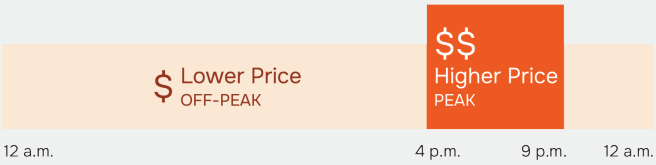
★★★

Adjust appliance use timing

Run appliances like your washer and dryer when energy prices are lower, which is typically anytime outside of 4-9pm. Energy prices may vary; check your specific rate plan for further details.

TIME RECOMMENDED

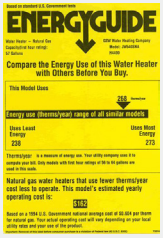
★★



Install ENERGY STAR® appliances

ENERGY STAR® appliances typically use up to 50% less energy and water than standard models. Some can be around the same price point as non-ENERGY STAR®!

When shopping, look for the EnergyGuide label which provides an estimated yearly operating cost and the range of operating costs for similar models.



TIME RECOMMENDED

★★

Clean lint traps

Clean your dryer's lint trap after every use to ensure safe, efficient drying. A full lint trap is a fire hazard!

TIME RECOMMENDED

★★

Lighting

You can reduce your energy bill significantly by switching to energy efficient lighting. Lighting represents as much as 22% of your home's electricity use.

ACTION 3

Install an LED bulb

LED bulbs can use up to 75% less energy than incandescent bulbs and last 25 times longer. LED bulbs screw into the same fixtures as incandescent or CFL bulbs.

1. Locate the light fixture you use the most that has an incandescent bulb (see tip below).
2. Make sure the new LED bulb is appropriate for the fixture by checking the package for the fixture type and maximum wattage. For instance, an LED bulb not designed to be used in a dimmable or enclosed fixture may burn out quickly.
3. Turn off the light and wait for the incandescent bulb to cool for five minutes before unscrewing the incandescent bulb.
4. Read the text at the base of the old bulb. Ensure that the wattage of the old bulb matches the rating of the new LED (e.g. exchange 60W old bulb for a LED rated for 60W).
5. If the wattage matches, screw in the new LED bulb.



LED Incandescent CFL

Lightbulb Types

Lightbulbs typically have their type and wattage printed directly on
the base of the bulb.

Incandescents have metal filaments inside a clear glass dome, whereas
LEDs are typically opaque. CFLs have a distinct spiral glass tube.

Incandescent bulbs are hot to the touch when turned on; LEDs run cool to the touch.

WHAT YOU NEED

LED Lightbulb



ADD-ON ACTIONS

Replace all bulbs with LED

Replace incandescent bulbs first, which are the most inefficient, then replace any CFL bulbs. CFL bulbs contain mercury and cannot be thrown away in the normal trash. Call 1-888-442-2666 for information on disposal.

TIME RECOMMENDED

 ★★★

Use daylighting

Open curtains or blinds during the day to use natural light.

TIME RECOMMENDED

 ★

Insulation

Heating and cooling can account for up to 50% of home energy use. Sealing gaps and leaks and improving insulation can save up to 20% of this cost.

ACTION 4
Use the infrared laser thermometer

The Infrared Laser Thermometer will help you detect where you may be losing or gaining heat through windows, lighting fixtures, outlets, vents, door jambs, ducts, and more.

1. Turn on and point the thermometer at an interior wall to measure your average internal home temperature. Record this number as your reference temperature.

   Note: Do not point the laser directly at another person or animal. Please do not leave the unit near objects with high temperatures. Keep the unit at least two feet away from induction stoves/heaters which may disrupt internal electronics.
2. Point the thermometer at potential spots in your home that air might be leaking, such as the edges of doors, the edges of windows, outlets, and exterior walls.
3. See if you can identify one door, one window, and one exterior wall or outlet that is several degrees warmer or cooler than your reference temperature, which may be caused by air leaks. Note that this activity will work best when the temperature difference between the inside and the outside of your home is large.
4. See ACTION 5 and ACTION 6 for what to do next.

WHAT YOU NEED

Infared Laser Thermometer



ACTION 5
Install weatherstripping

Use weatherstripping to seal gaps in your doors and windows. For larger gaps, consider installing a door sweep instead.

1. Identify a door jamb that is losing heat (see ACTION 4). You can also try to slide a piece of paper through the area. If you can see light, then that area will also need weatherstripping.
2. Clean any dirt on the application area to ensure a good seal.
3. Cut a length of weatherstripping to match the length of the door where the strip will be applied. Peel back the adhesive strip and apply.
4. Repeat this action with a window jamb that is losing heat.
5. Please return what you do not use with the toolkit.

WHAT YOU NEED

Weatherstripping



INSTRUCTIONAL VIDEO

sustainsmc.org/
weatherstripping

Insulation

ACTION 6
Install outlet gaskets

Outlet gaskets can help reduce drafts around outlets on exterior walls. Safety note: if you are not comfortable or familiar working near electrical wiring, skip this action or ask for help from a qualified person.

1. Identify one exterior wall with the most exposure to draft (see ACTION 4).
2. Choose an outlet or switch plate to upgrade.
3. Turn off the power to the outlet or switch at the circuit breaker.
4. Carefully loosen the faceplate screw with a screwdriver (not provided) and remove the faceplate.
5. Place the gasket over the internal area. If necessary, trim the gasket with a pair of scissors to ensure it fits.
6. Replace the faceplate and tighten the screw.
7. Repeat for other outlets or switch plates.

WHAT YOU NEED

Outlet Gaskets



INSTRUCTIONAL VIDEO

sustainsmc.org/outletgaskets

ADD-ON ACTIONS

Add insulation

Insulate your home to recommended standards for optimum savings. Consider also looking into options that require less energy to manufacture and contains fewer harsh chemicals!

TIME RECOMMENDED

Schedule an assessment

Schedule a professional assessment to assess insulation needs. The Bay Area Regional Energy Network is an excellent resource for low and moderate income households; visit **bayren.org/residential** for more information.

TIME RECOMMENDED

REDUCING ENERGY USE

Air Quality

Running your HVAC uses energy, but it also helps improve your indoor air quality. While these activities may not cover all potential air quality issues, these activities can be a start on understanding air conditions and savings co-benefits!

ACTION 7

Air Quality Monitor

Carbon dioxide (CO_2), is a gas that people naturally breathe out. When many people are in a room with limited fresh air—such as when doors and windows are closed—CO_2 levels tend to rise. Higher CO_2 levels (>1000 ppm) are often a sign that fresh air is not circulating well, which can make a room feel stuffy and may contribute to drowsiness, discomfort, or difficulty concentrating. A standard acceptable range for CO_2 levels is 400-1000 ppm. Note: this monitor is not a lab-grade instrument. Readings may vary after you move the monitor; brief spikes do not always mean there is a serious problem.

1. Remove the monitor from its protective box and press the button on the back for 2-3 seconds to turn it on. If it is not turning on, it may be out of battery; use a USB-C cable to charge it.
2. Place the monitor where people spend time (e.g. bedroom, living room, or office), in a place to measure average room air quality. The monitor should be 3-6 feet off the ground, have access to plenty of airflow (180°-270° of open space), and should not be placed directly next to any sources of pollutants, steam, or heat.
3. Close all windows and doors, then record the CO_2 level after spending 10 minutes in the room. The reading may take a minute or more to stabilize.
4. Open a window, and after 10 minutes, record the CO_2 level. If the CO_2 level dropped, fresh air may be improving ventilation!
5. Replace the monitor and the cable back into the box.

WHAT YOU NEED

Air Quality Monitor



INSTRUCTIONAL VIDEO

sustainsmc.org/airqualitydemo1

ADD-ON ACTION

Borrow an induction stove

An induction stove is an electric cooktop that uses magnetic technology to heat pots and pans. Induction stoves improve indoor air quality because they do not burn gas. They also can be up to 90% efficient, as opposed to gas stoves which are around 40%, which saves energy and money!

Curious about induction? Borrow one to try: **pge-induction.myturn.com/library/**



ACTION 8
Air Quality Monitor

Cooking can release tiny particles into the air that you can't see but can breathe deep into your lungs. Measuring PM2.5 before and during cooking can help you see how cooking affects your indoor air quality.

PM2.5 refers to tiny airborne particles that are 2.5 micrometers (about 1/30 the width of a human hair) or smaller. These particles can come from outdoor air, dust, wildfire smoke, candles, fireplaces, and cooking. Gas appliances like gas stoves can also contribute to indoor air pollution because they burn methane gas.

The World Health Organization recommends keeping a 24-hour average of PM2.5 levels under 15µ g/m³. Cooking and wildfires can cause PM2.5 levels to spike over 100µ g/m³ though. Cooking can release tiny particles into the air that you can't see but can breathe deep into your lungs. Measuring PM2.5 before and during cooking can help you see how cooking affects your indoor air quality, and how using a kitchen exhaust fan or opening a window can help.

1. Place the monitor in or near the kitchen where it can measure the room's average air quality. Position it 3–6 feet above the floor with plenty of open airflow around it. Avoid placing it directly next to the stove, other pollution sources, steam, or heat. Make sure to keep the monitor clear of any food or drink!
2. Wait for the PM2.5 reading to stabilize, then record the starting reading. You may also consider looking at the PM10 and carbon dioxide levels as you cook!
3. Cook a meal as you normally would. If possible, watch the PM2.5 reading while you cook and for several minutes afterward.
4. Record the highest PM2.5 reading you observe. Compare it with your starting reading. If the PM2.5 level increased, cooking likely added fine particles to your indoor air.
5. Replace the monitor and its charging cable back within the box.
6. Try repeating this activity while using a kitchen exhaust fan that vents outdoors, opening a window, or both. Compare the PM2.5 readings to see how these changes improve your indoor air quality. (Make sure to place the monitor in the same place to make sure your readings are comparable.)

WHAT YOU NEED

Air Quality Monitor



INSTRUCTIONAL VIDEO

sustainsmc.org/airqualitydemo2

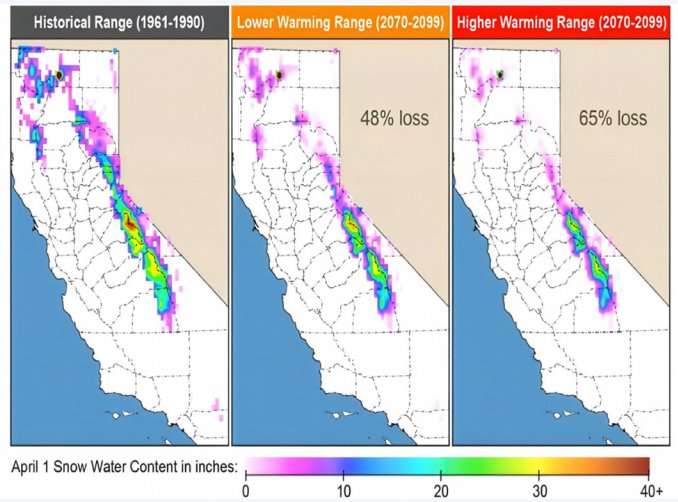
Introduction to Water Use

Our water supply

In the Bay Area, we receive most of our water from Sierra Nevada snowpack. Our water resources have been shrinking year by year as rain is becoming more unpredictable, even with periods of heavy rainfall. While state and local leaders continue to work on long-term solutions, saving water daily keeps water in reservoirs for the inevitable dry years to come.

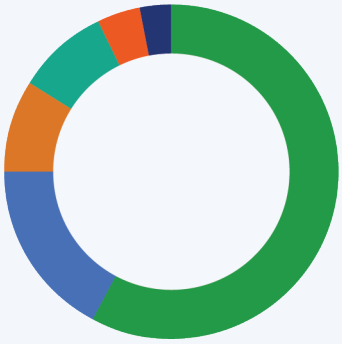
To learn about California's water resources visit **water.ca.gov/Current-Conditions**.

Historical and projected California snowpack



Source: California Department of Water Resources

Indoor/Outdoor Water use in a Typical Single Family Home



Outdoor

58% Landscaping

Indoor

17% Shower
9% Overwatering
9% Faucets
4% Toilets
3% Washing Machine

How we use water

The average San Mateo County resident uses around 61 gallons of water each day. To calculate how much you use, visit **watercalculator.org**. Click "Find your footprint" and calculate your daily water use. In which category do you use the most water?

Save a little water, Save a lot of energy!

20% of the state's electricity and 30% of its methane gas is used to heat and treat water, making this the most intensive use of energy in California. Water conservation is an economical way to reduce both energy use and greenhouse gas emissions.

At the Tap

Over half of indoor water use happens in the bathroom. Installing faucet aerators can save 1.2 gallons per person per day.

ACTION 9
Measure water flow rates

1. Turn on a bathroom faucet and let water flow into the water flow rate bag for 5 seconds.
2. Record the gallons per minute (gpm) as measured on the flow rate bag.
3. Repeat steps 1 and 2 with a kitchen sink.
4. Repeat steps 1 and 2 with a showerhead.
5. If the water rate is greater than the rates below, go to the following actions:

   Bathroom sink: 0.5 gpm ⟶ Go to ACTION 11

   Kitchen sink: 1.5 gpm ⟶ Go to ACTION 11

   Showerhead: 2 gpm ⟶ Go to ACTION 12

WHAT YOU NEED

Water Flow Rate Bag



ACTION 10
Measure leaky faucets

1. If you have a dripping faucet, hold the empty drip vial under the drip for 5 seconds.
2. Set it on a level surface and look at the gallons per day (GPD) and gallons per year (GPY) markings to see how much water the leak is wasting each day and year.

WHAT YOU NEED

Drip Guage



ADD-ON ACTIONS

Reuse water

Place a tub in the sink when you're washing produce to capture the water, then use it to water your indoor or outdoor plants.

TIME RECOMMENDED

★★

Use the dishwasher

Save water by using an energy-efficient dishwasher, which can use 3 to 4 gallons per cycle. Compare this to handwashing, which can use up to 27 gallons! To make the most of each cycle, use the dishwasher when it is full.

TIME RECOMMENDED

★★

At the Tap

ACTION 11
Install faucet aerators

Faucet aerators are small parts that screw onto faucet tips. Aerators mix air into the water, lowering water usage while still maintaining strong pressure. NOTE: Some kitchen faucets are custom sizes and cannot be replaced with the toolkit's aerators. You can still measure the flow rate and seek alternatives at a local hardware store or online.

1. Locate one faucet that you identified in ACTION 9.
2. Read the small text on the aerator to tell whether it is a 0.5 or 1.5gpm, then remove the plastic packaging on the aerator. For kitchen sinks, use a 1.5gpm aerator; for bathroom sinks use a 0.5gpm aerator.
3. Close or plug your drain.
4. Unscrew old aerator by turning to the left; if needed, use the pliers to loosen the aerator. Wrap the teeth of the pliers with painter's tape or a towel to avoid scratches to the existing equipment.
5. Clean and dry water pipe threads (grooves at end of faucet).
6. Wrap provided pipe thread seal tape around aerator's threads in the same direction as the aerator screws on.
7. Screw on new aerator clockwise by hand.
8. Turn on faucet to test for leaks; tighten with pliers as needed.

WHAT YOU NEED

Faucet Aerator



Pilers



Pipe Thread Seal Tape



INSTRUCTIONAL VIDEO

sustainsmc.org/faucetaerator

ACTION 12
Install low-flow showerhead

If your showerhead flows at more than 2.0 gpm according to the flow rate bag, replace it with the lowflow showerhead provided.

Instructions: Identical to ACTION 11.

WHAT YOU NEED

Showerhead



INSTRUCTIONAL VIDEO

sustainsmc.org/showerhead

ADD-ON ACTION

Use a shower timer

Make use of a shower timer, which helps you save water and energy at the same time. Try to take a shower that is five minutes or less.

TIME RECOMMENDED



REDUCING WATER USE

Toilet and Water Heater

ACTION 13

Measure toilet leaks

A toilet that runs constantly can waste up to 200 gallons of water per day, which can cost you $250 a year! The Detect-A-Leak Toilet Tablets are a simple and inexpensive way to test for leaks.

1. Carefully remove tank lid.
2. Drop 1 or 2 tablets into the exposed tank.
3. Wait 20 to 30 minutes. Do not flush the toilet during this time. If blue color appears in the toilet bowl, you have a toilet leak. Typically, a leaky flapper at the bottom of the tank can cause toilet leaks and should be replaced.







WHAT YOU NEED

Detect-A-Leak Toilet Tablets



ACTION 14

Measure water heater temperature

1. Locate your water heater if you have access to it.
2. Locate the temperature adjustment dial and write down the current setting.
3. Locate the faucet closest to the water heater.
4. Run water until hot and capture a cupful in a mug. (Collect excess water in a pitcher or bucket and use to water plants.)
5. Remove the blue thermometer cover and insert thermometer. Wait for it to reach its highest point, then record the temperature.
6. Adjust setting so that your hot water runs at 120°F. If your water heater does not have specific temperature settings, this action might take a few tries.

WHAT YOU NEED

Thermometer



ADD-ON ACTIONS

Install pipe insulation

To conserve energy, insulate the hot water pipes leading from the water heater and use an insulating sleeve on the actual heater.

TIME RECOMMENDED

Set vacation mode

Set your water heater to "Vacation Mode" to conserve energy when you are away for long periods of time.

TIME RECOMMENDED

Set recirculation timer

If you have one, adjust your recirculation pump to only run when hot water is needed.

TIME RECOMMENDED

REDUCING WATER USE

Outdoors

ADD-ON ACTIONS

Plant native plants

Plant drought-resistant native species, which need less water and care because they are adapted to the local environment. Many sites online have lists of native San Mateo County plants!

TIME RECOMMENDED

★★★



Add a pool cover

To keep your water warm and reduce heating costs, consider purchasing a pool cover.

TIME RECOMMENDED

★★★

Check for irrigation leaks

Regularly check for and fix leaks in your irrigation system; leaks can waste thousands of gallons of water annually.

TIME RECOMMENDED

★★

Adjust watering timing

Water in the evenings or at sunrise when temperatures are cooler and wind is lower. This reduces evaporation and allows water to soak in.

TIME RECOMMENDED

★★

Install drip irrigation

Drip irrigation delivers water directly to plant roots, which saves water by reducing evaporation.

TIME RECOMMENDED

★★

Visit a commercial car wash

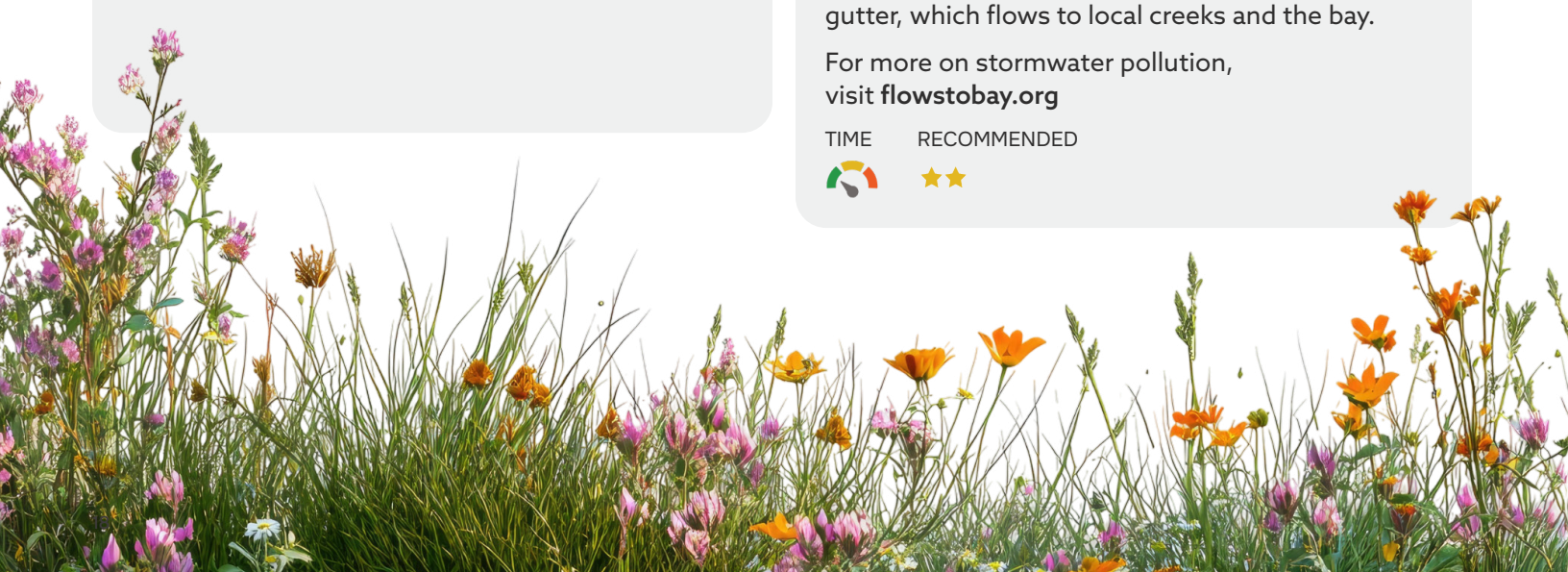
Washing your car at home uses 80 to 140 gallons of water, while a commercial car wash with water recycling can use just 30 to 45 gallons.

Washing your car on your driveway also sends dirty water, soap, heavy metals, oil, and grease into the gutter, which flows to local creeks and the bay.

For more on stormwater pollution, visit **flowstobay.org**

TIME RECOMMENDED

★★



Resources & More

Resources specifically tailored for San Mateo County residents.

BayREN EASE Program

The BayREN Efficiency And Sustainable Energy (EASE) Program is designed to make single-family homes healthier, more comfortable, and energy efficient. With a customer co-pay capped at 20% of the project cost, EASE Home makes essential improvements, like insulation and duct-sealing, more accessible for moderate-income households.

To learn more, visit **bayren.org/ease-home**

Safe Routes to School

This program by the San Mateo Office of Education encourages children to walk and bike to school by implementing projects and activities that improve the health, well-being, and safety of children.

To learn more, visit **smcoe.org/for-educators/student-services/srts**

Connect with others

Get involved with a local group for a cause you're interested in. Check out Act Now Bay Area for step-by-step guides, online resources, and organizations in San Mateo County.

To learn more, visit **actnowbayarea.org/sanmateo**

Run a conservation campaign

Help build a culture of resource conservation by running a conservation campaign in your community or company. Online platforms such as **brightaction.com** can help with the logistics.

Finished?
Return this toolkit to the library!

Make sure all tools are in the kit before returning (see list on page 3)

Please return the toolkit as soon as you can so other library patrons can check it out.



Energy Rebate Finder

Curious what incentives are available for induction stoves, heat pump heaters, solar, and other home upgrades? Use this handy tool to see what federal, regional, state, and city-level incentives are available.

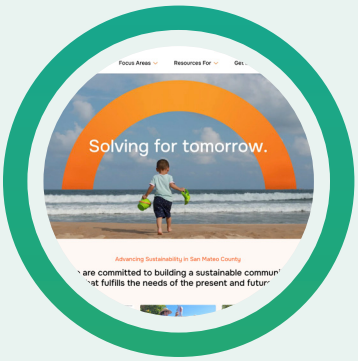
switchison.org/incentive-finder



Water Rebate Finder

The Bay Area Water Supply & Conservation Agency offers an online portal to easily find and submit rebates! Check it out.

bawsca.org/conserve/rebates



Share this kit with a neighbor or friend, and visit the San Mateo County Sustainability website for more!

smcsustainability.org

Project Funders and Library Partners

SAN MATEO COUNTY Sustainability Department

BAWSCA Bay Area Water Supply & Conservation Agency

BAYREN

Peninsula Library System

San Mateo County Libraries