

SMART[⚡] ENERGY[🔥] LEADERS



SMELL & TELL

Pacific Northern Gas (PNG) adds the chemical mercaptan to their natural gas which smells like rotten eggs. Can you guess why they do this? If you think it's to make it easier to tell if there is a gas leak, you are correct!

Which row has the steps in the correct order?



ROW 1



ROW 2



ROW 3

Answer: Row 3 is correct.

What is natural gas?

Natural gas is a fossil fuel that is formed from organic decomposition over the span of millions of years. It is collected and used through combustion for electricity, appliances, or heating.

ROW 1



Wait for help to arrive



Smell rotten eggs



Leave the area



Call 911 or 1-800-663-1173



Tell an adult

ROW 2



Leave the area



Smell rotten eggs



Wait for help to arrive



Tell an adult



Call 911 or 1-800-663-1173

ROW 3



Smell rotten eggs



Tell an adult



Leave the area

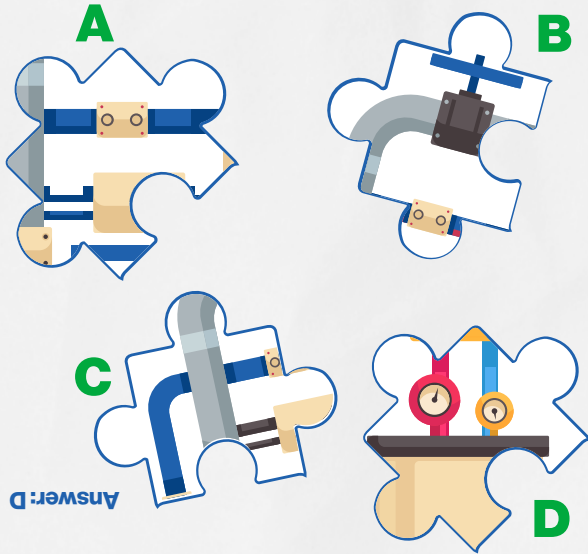


Call 911 or 1-800-663-1173

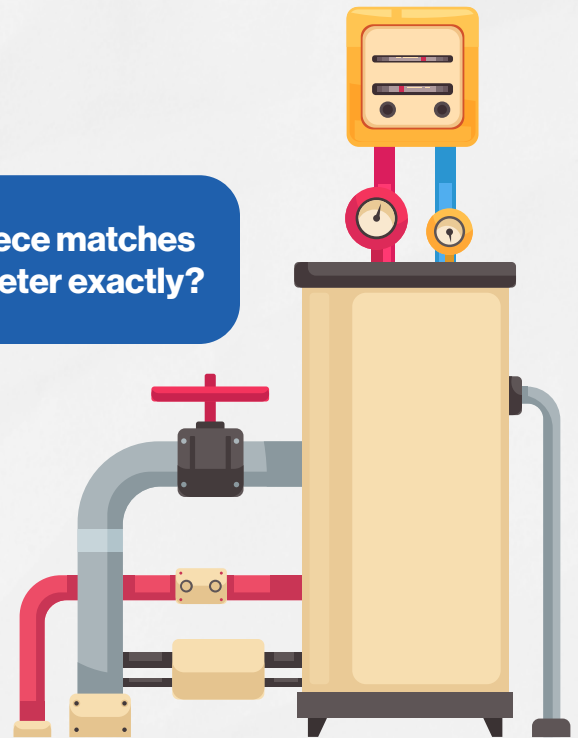


Wait for help to arrive

SPOT THE DIFFERENCE



Which piece matches the gas meter exactly?



Gas Meter **Dos** and **Don'ts**

DO

Remind your parents to keep the meter clear of debris and to avoid hitting it.

DO

Ask your parents to show you what appliances the meter measures.

DON'T

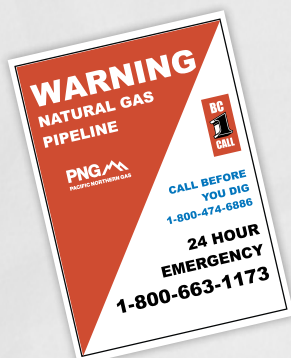
Play on your gas meter, or lean your bike or other objects against it.

How many new words can you make from the letters in "MERCAPTAN"?

BE AWARE

These signs tell you areas that require special actions and what you can do to stay safe in and around these areas.

Draw a line to match the sign to the definition.



Both of these light bulbs give off the same amount of light but one uses less wattage, making it much more energy efficient.

Add up the numbers along each line to find out the wattage of each bulb.

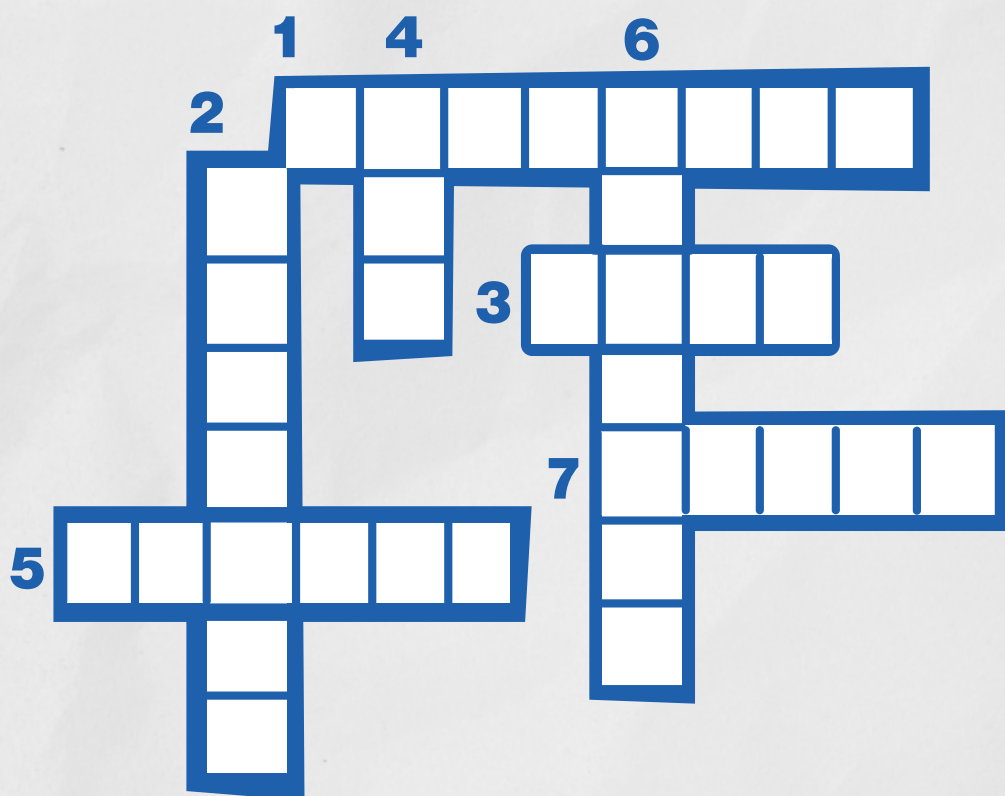
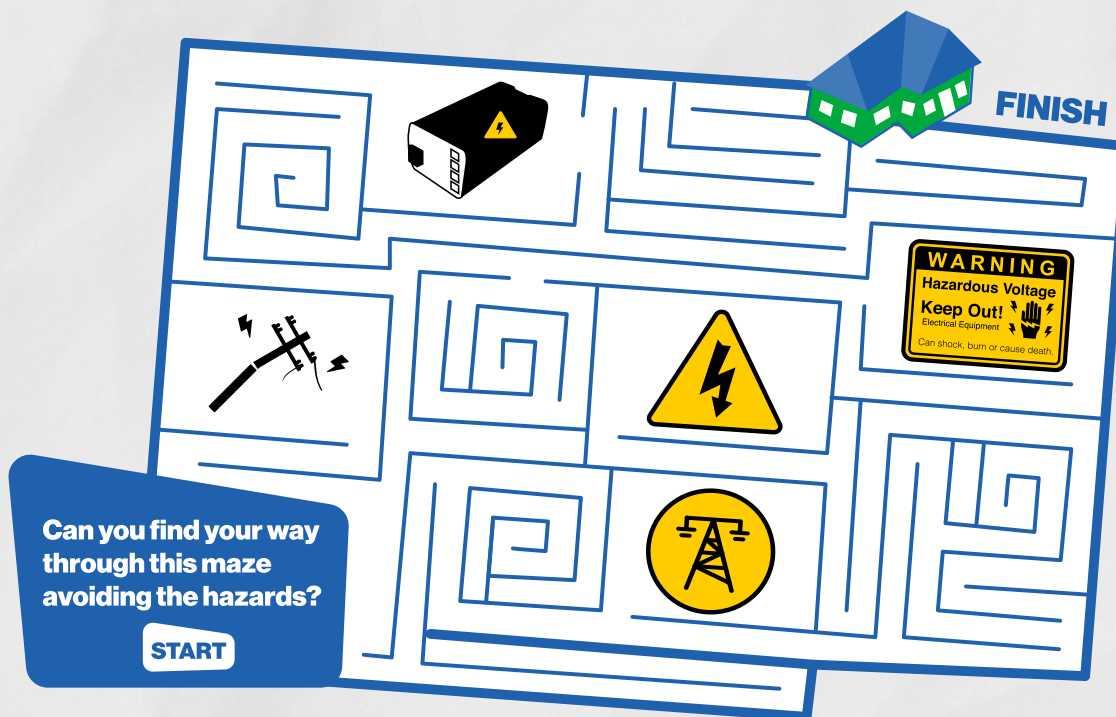


... 9 ... 8 ... 7 ... 5 ... 6 ... 8 ... 9 ... 8 ...



... 1 ... 3 ... 1 ... 4 ... 3 ... 1 ... 2 ...

Answers
The regular light bulb is 60 watts, and the CFL is only 15 watts!
That means that the CFL is more energy efficient.



Across

1. Make one of these for the bottom of a door to block drafts.
3. Wash your clothes in _____ water.
5. Open these window coverings in the daytime to let sunlight warm your home.
7. If your house is _____ leave the heat off.

Down

2. The biggest use of natural gas in homes is for _____.
4. Turn the lights _____ when you leave a room.
6. Take these instead of baths.

Answers

Across:
1. Door sock
3. Cold
5. Blinds

Down:
2. Heating
4. Off
6. Showers
7. Empty



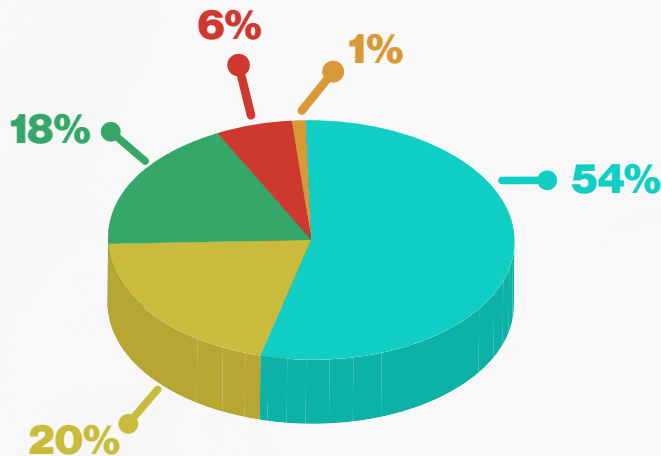
We can all take steps to conserve energy. What does it mean to conserve?
It means use the energy available to you only when you need to.
Let's find out more about conserving energy!

Amount of Energy Used

Type of Energy



Draw a line to match the colour that represents the amount of energy used at home to the type of energy.



Heating



Hot Water



Lighting



Cooling



Appliances & Electronics

Answers
Heating: 54%
Hot water: 20%
Appliances & Electronics: 18%
Lighting: 1%
Cooling: 6%

INSULATION ≈ STATION



Good insulation saves energy.

Try a few insulation materials to see which holds in the most heat!

You'll need:

- 2 cardboard shoe boxes
- Black paper
- 2 thermometers
- Tape
- Insulating materials such as:
Styrofoam
A towel
Fleece
Newspaper

Step 1. Tape a black paper to the outside bottom of each box.

Step 2. Put the box lids upside down in a sunny location.
Place 1 thermometer on each lid.

Step 3. Fit 1 box onto a lid with the black paper bottom facing up towards the sun. This is your empty control box.

Step 4. Fill the 2nd box with your insulating material.
Tape it to the box so it won't fall out.

Step 5. Fit the 2nd box down onto the other lid.
Wait 15 minutes, then open the boxes and record their temperatures!



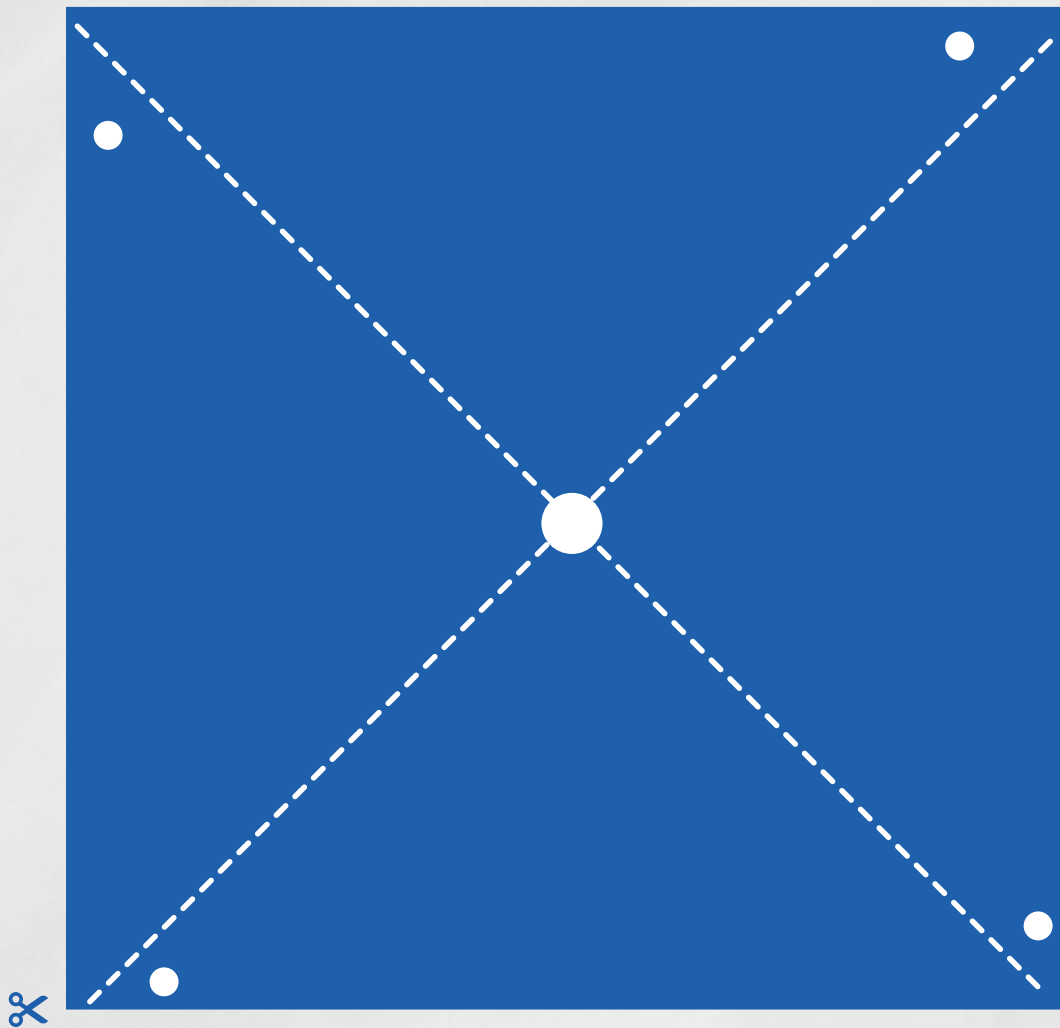
ENERGY CHECKLIST

There are lots of things you can do at home, and at school, to conserve energy. Here's a checklist of some for you to try. See how many you can do every week.

Easy Ways to Conserve Energy

- ☐ WEAR EXTRA CLOTHES INSTEAD OF TURNING UP THE HEAT
- ☐ TURN OFF YOUR COMPUTER, VIDEO GAME, TV, AND OTHER ELECTRONICS WHEN YOU'RE NOT USING THEM
- ☐ CLOSE THE FRIDGE DOOR WHILE YOU DECIDE WHAT TO EAT
- ☐ HANG CLOTHES TO DRY INSTEAD OF USING A DRYER
- ☐ TALK TO YOUR PARENTS ABOUT USING A PROGRAMMABLE THERMOSTAT
- ☐ ASK YOUR PARENTS TO CHANGE THE FURNACE FILTER TWICE A YEAR
- ☐ CHECK FOR DRAFTS FROM WINDOWS AND DOORS AROUND THE HOUSE
- ☐ TAKE SHORT FIVE-MINUTE SHOWERS TO SAVE HOT WATER - USE A TIMER
- ☐ ASK YOUR PARENTS TO INSTALL A LOW FLOW SHOWER HEAD TO SAVE EVEN MORE HOT WATER
- ☐ RUN THE DISHWASHER ONLY WHEN IT'S FULL
- ☐ TELL YOUR PARENTS ABOUT ENERGY STAR APPLIANCES
- ☐ WASH YOUR CLOTHES IN COLD WATER INSTEAD OF HOT
- ☐ MAKE A DOOR SOCK FOR THE BOTTOM OF DRAFTY DOORS
- ☐ HEAT ONLY THE ROOMS THAT ARE ACTIVELY USED IN THE HOUSEHOLD
- ☐ TURN DOWN THE HEAT AT NIGHT
- ☐ TURN OFF THE LIGHTS WHEN YOU LEAVE A ROOM
- ☐ USE REUSABLE WATER BOTTLES, LUNCH BAGS, AND SHOPPING BAGS
- ☐ OPEN BLINDS TO LET THE SUN WARM THE HOME IN THE DAY AND CLOSE THEM AT NIGHT TO CAPTURE THE HEAT
- ☐ INSTALL A LOW FLOW FAUCET IN THE KITCHEN
- ☐ REPLACE REGULAR BULBS WITH CFL OR LED BULBS
- ☐ READ A BOOK, OR PLAY A BOARD GAME, INSTEAD OF USING ELECTRONICS
- ☐ ONLY RUN FULL LOADS IN THE WASHING MACHINE
- ☐ REDUCE, REUSE, RECYCLE





Create a wind turbine

Turbines are a great tool that are frequently used in harvesting energy. The steam, heat, or water that is used to spin the turbine allows for the production of energy.

Wind Turbine Instructions

You'll need:

- WOODEN STICKS
- PIN
- SMALL BEAD TO PUT ON THE PIN

Step 1 - Soak ends of the wooden sticks so that they are soft enough to put the pin into.

Step 2 - Cut out the square outline from the windmill template.

Step 3 - Cut along the dotted lines and pin the four circles around the perimeter of the square into the centre circle.

Step 4 - Put the small bead on the end of the pin to secure the corners.

Step 5 - Stick the pin into the softened wooden skewer.

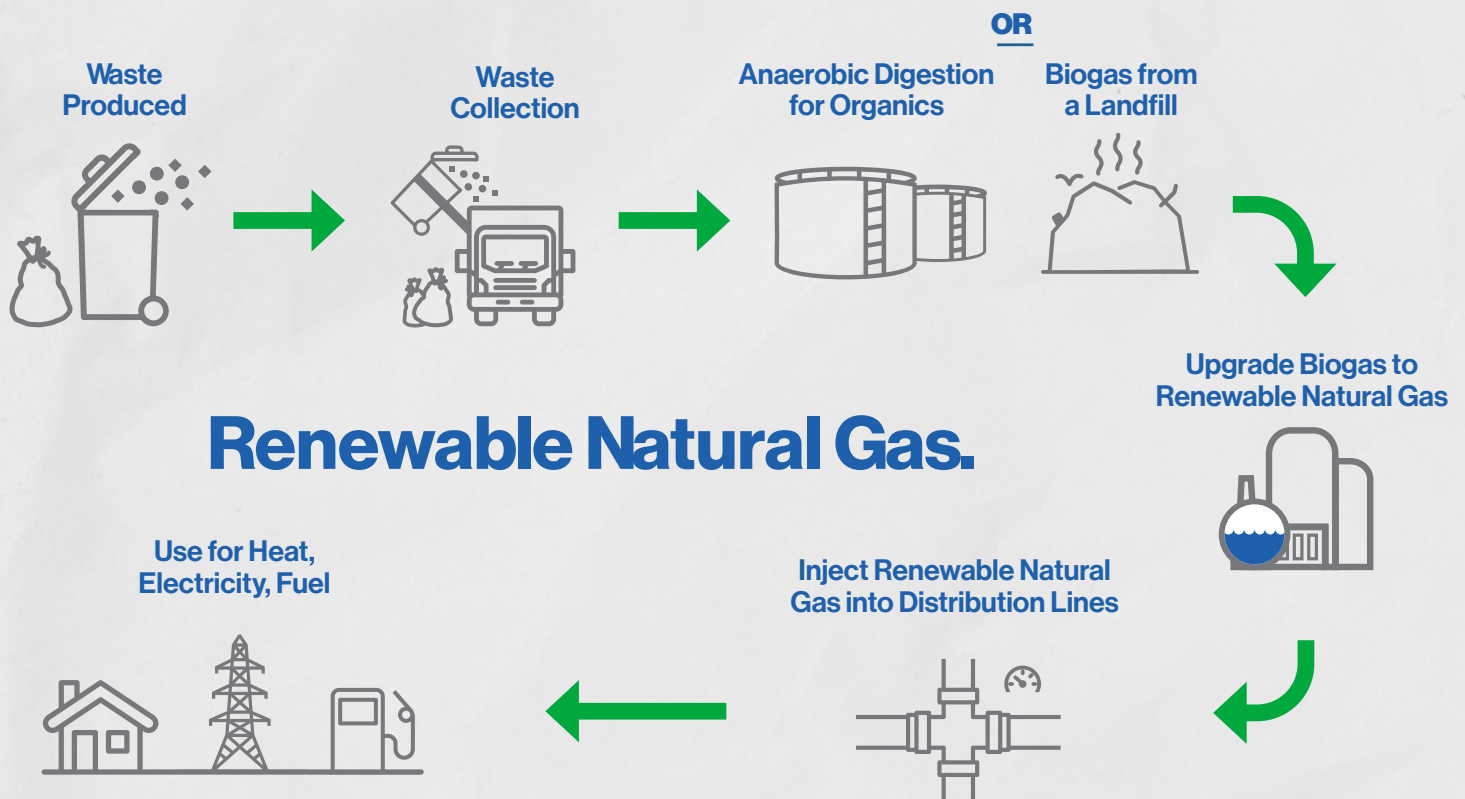
Step 6 - Take the windmill outside on a windy day to see how it reacts to the wind!

ENERGY FOR THE FUTURE

How innovation moves the energy industry forward

Renewable Natural Gas

Renewable natural gas is formed through the decomposition of organic material. It can be collected from landfills and composting facilities. When organics such as food or lawn waste break down through the digestion of microbes, they produce the biproduct of gas which is mainly made up of methane. This methane-based gas is a similar fuel source to natural gas but is produced in a much smaller timeframe.



USE LESS AND SAVE MORE SMART ENERGY SOLUTIONS

PNG's Smart Energy Solutions programs, available for Residential and Business, are helping customers become more energy efficient. Rebates and product upgrades lead to better use of energy and a lower carbon footprint, more efficient and reliable equipment, and savings on monthly utility bills.

Check out our programs at <https://png.ca/smartenergysolutions/> and find the perfect fit for your home or business.