



Watt Watchers of Texas

TEACHER GUIDE

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About Watt Watchers of Texas

Watt Watchers of Texas is a state-sponsored STEM program to help boost energy literacy for K-12 students and help schools save money by saving energy. Through the program, students, teachers, and families will have access to energy saving tips, activities, and lessons.

Founded in 1985, the original Watt Watchers program focused primarily on student patrol groups assigned to areas of the school, checking for energy waste throughout the building. If students found lights on in empty rooms they would leave “tickets” and remind people to turn the lights off. Over the decades, Watt Watcher energy patrols have saved participating schools around Texas hundreds to thousands of dollars in energy costs each year.

In 1985, the Region IV Education Service Center in Houston was the site of the pilot program for Watt Watchers of Texas. Galveston ISD was one of the first districts to embrace the program within Region IV and they reduced their electric bill by \$25,000 that year. The next year, through a contract with the University of Texas Permian Basin, a Watt Watchers program was implemented for West Texas. Their program expanded to include over 160 school districts throughout Texas by 1993.

By the spring of 2005, 3,156 teachers in over 550 school districts had enrolled in the Watt Watchers program. There were more than 760 teachers that had been doing the program for over five years. Thousands of students have watched watts, ticketed teachers, learned about conservation and energy efficiency, and thousands of dollars have been saved.

In 2018, Watt Watchers of Texas relaunched as an updated version of the original program, building upon the patrol program and related materials. The digital program design allows teachers to have easier access to materials. Additionally, the digital platform can continuously and seamlessly update and will help save material cost for districts. Designed to go deeper than just turning the lights off, students, teachers and families will now have the opportunity to learn about energy conservation and cost saving tips through modern, everyday categories, such as food, water, and transportation.

So dive in and start exploring – **because Texas is too good to waste!**

www.watt-watchers.com

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The Benefits of Watt Watchers

Why should we work hard to save energy? One answer is money. Reducing school energy costs can increase dollars available in the school district budget for educational uses. From a global perspective, saving energy saves natural resources and reduces associated environmental problems.

Saving energy is everyone's responsibility - even students. School is a significant part of the student's world, and the Watt Watcher program is a proven method of teaching energy efficient habits while reducing school electric bills.

Our energy future depends on decisions students will make about energy use; Watt Watchers gives them the opportunity to make a difference by doing something positive for their school.

Science Concepts and Standards

Watt Watchers contains numerous activities and lessons designed to supplement an energy conservation and energy efficiency curriculum. These exercises reinforce teaching and learning and are designed to increase awareness of how conserving energy, water, and materials is achievable in our everyday life. Many are appropriate for a single class period or take-home assignment. They can be used individually or combined to create a rich learning experience.

Activities and lessons have been divided into six themes:

- **Electricity**
- **Water**
- **Materials**
- **Cooling & Heating**
- **Transportation**
- **Food**

As a state-sponsored program Watt Watchers is fully aligned with the Texas Essential Knowledge and Skills (TEKS) science curriculum standards for Kindergarten through twelfth grade. A list of TEKS standards follows each lesson or activity, making it easy and convenient for educators to use. To get started, simply visit www.watt-watchers.com/activities.

The Student Patrol Program

The Student Patrol Program is the heart of the Watt Watchers of Texas. Your students will join Lil' Tex and Ann as official Watt Watchers, helping to save Texas by rounding up the Wasters Gang. Here are some steps you should take in setting up your program:

- **Start by accessing the free content on the Watt Watchers website.**
- **Set up a meeting with your administrators to discuss the Watt Watchers program and how it is going to benefit your school.**
- **Develop procedures for your Watt Watchers patrol.**
- **Prepare your patrol materials with the free templates and other resources from the Watt Watchers website.**
- **Share the 8-page downloadable comic "Texas is Too Good to Waste" with your class.**
- **Choose the students to be Watt Watchers.**
- **Go on your first patrol!**
- **Get started and keep going.**
- **Celebrate your success with printable awards and achievements from the Watt Watchers website.**

For detailed suggestions, tips and additional resources, please visit <https://www.watt-watchers.com/student-patrol-program>.

Meet the Characters

Watt Watchers is a story of saving Texas resources, and every story has a hero and a villain. Students will join Lil' Tex and Ann as official Watt Watchers, helping to save Texas by rounding up the Wasters Gang. You can learn more about our characters at <https://www.watt-watchers.com/lil-tex-ann-and-the-wasters-gang>.

Lil' Tex and Ann

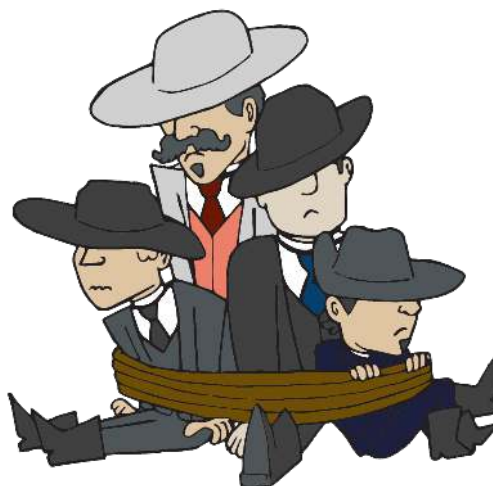


Lil' Tex and Ann, the Watt Watchers, are the heroes of our story. They live by the motto, "Texas is too good to waste." They love Texas, and are dedicated to conserving her resources. Lil' Tex is brash and quick to action, while Ann is more reserved and prefers to think things through and make a plan.

Tex and Ann are targeted toward younger students.

The Wasters Gang

The Wasters Gang are the bad guys. Any time you see a light left on in an empty room, water running from an unused faucet, or recyclables in the trash, you know the Wasters Gang is near by. They are entropy personified. Maybe not evil, per se; they simply don't care about anything but themselves. Like any good comic-book villain, they can be defeated but never eliminated—they'll always be back in the future.



Navigating the Website

Students, teachers, families – anyone can use the online website to learn more about conservation and sustainability - and to save money by saving energy. To get started, go to www.watt-watchers.com. Here you'll find the website has been divided into the following topics:

- **About**
- **Student Patrols**
- **Activities**
- **Resources**
- **Blog**

Clicking on a tab will take you into that category's page where you can learn more about the Watt Watchers story, starting your own Student Patrol, explore and use various activities and lesson, discover digital resources, or catch up on the latest Watt Watchers news in the blog.

You can also sign up for the **Watt Watchers newsletter** or **contact the Watt Watchers team** from the home page.

The image shows a screenshot of the Watt Watchers of Texas website. At the top, there is a dark blue navigation bar with the following menu items: ABOUT, STUDENT PATROLS, ACTIVITIES, RESOURCES, and BLOG. A large red arrow points to the BLOG link. Below the navigation bar is a banner for the "2019 WATER, TEXAS FILM CONTEST" judged by Richard Linklater. The main heading is "Texas is Too Good to Waste" with a sub-heading "Welcome to Watt Watchers of Texas". Below this, there is a "Student Patrols" section with a "LEARN MORE" button. To the right, there is a contact form titled "Let's Keep in Touch" with the text: "We want to hear from you! Tell us how you're using Watt Watchers of Texas in your school, and what we can make better." The contact form includes a home icon, address "204 E. Dean Keeton St., Austin, TX 78712", and email "contact@watt-watchers.com". To the right of the contact form is a newsletter sign-up form with fields for "Name" (First and Last), "Email", and a "Comment or Message" text area. It also has a checked checkbox for "Subscribe to the Watt Watchers of Texas newsletter" and a "GDPR Agreement" section with a consent checkbox. A "Submit" button is at the bottom of the newsletter form. A large red arrow points to the bottom of the contact form area.

Navigating the Activities

Watt Watchers of Texas has dozens of activities and lessons centered around conserving energy, food water, and materials that are so much fun, students won't even realize how much they're learning. Plus, all activities and lessons are all TEKS-aligned! To dive in, visit www.watt-watchers.com/activities.

Activities and lessons are categorized under the six main themes of **Electricity, Water, Materials, Cooling & Heating, Transportation, and Food.**

You can search for activities and lessons by grade levels (K-12), or you can click on **View All Activities** to discover content by theme.

The screenshot shows the 'Student Activities' page on the Watt Watchers of Texas website. The page features a dark blue header with the logo and navigation links for 'ACTIVITIES', 'RESOURCES', and 'BLOG'. Below the header, the title 'Student Activities' is displayed, followed by a paragraph explaining that these activities supplement energy conservation and efficiency curricula. A second paragraph states that activities are divided into six themes, many of which are cross-curricular. Below this, a horizontal row of six theme categories is shown, each with an icon: Electricity (computer monitor), Water (water drop), Materials (recycling symbol), Cooling & Heating (heater), Transportation (bus), and Food (food items). Below the themes, a section titled 'Or, you can explore the activities by grade level:' contains a row of buttons for grade levels: K, 1, 2, 3, 4, 5, 6, 7, 8, and HS. At the bottom of the page, there is a blue button labeled 'View all activities'. Red arrows are overlaid on the image, pointing to the 'ACTIVITIES' link in the header, the 'View all activities' button, the theme category buttons, and the grade level buttons.

Additional Resources

The Watt Watchers of Texas website has a wealth of additional resources, found by clicking on the **Resources** tab at the top of the main website: <https://www.watt-watchers.com/resources>.

A glossary with visuals is available under the **Glossary** heading, or on Page 10 of this guide.

Under the **Downloads** heading you'll find everything you need to implement a successful program at your school; forms, name tags, door hangers, certificates, letters to share with your administrators - and much more. All documents are downloadable in PDF format.

The Watt Watchers Resource page also contains artwork, logos and other graphics to download and use for official Watt Watchers purposes, located under the **Additional Downloads** heading.

Additional links to related content on partner websites, such as PBS LearningMedia, are available under the **Digital** heading.

The screenshot shows the Watt Watchers of Texas website's Resources page. The navigation bar at the top includes tabs for ABOUT, STUDENT PATROLS, ACTIVITIES, RESOURCES, and BLOG. A red arrow points to the RESOURCES tab. The main content area is titled "Resources" and contains several sections:

- Glossary**: A glossary of terms used throughout the Watt Watchers of Texas program is [here](#).
- Downloads**: Download and print as many of these forms as you need to kick-start your program. Keep in mind the environmental implications of printing. All of these documents are available as PDF. If you cannot view PDF documents on your computer, you can download a free [PDF viewer](#). Documents are formatted for Avery perforated paper for easy production with scissors or a paper cutter. Two thumbnails are shown: "Texas is Too Good" and "Make Your Own".
- Additional Downloads**: Downloadable character artwork for Lil' Tex, Ann, and the Wasters Gang along with official Watt Watchers of Texas logos are available [here](#).
- Digital**: The following digital resources are not part of the Watt Watchers Program. They complement the activities contained on this site and provide additional context to the interdisciplinary world of energy, resources, and conservation:
 - [Energy 101](#): You can also view the [Energy 101 Teacher's Guide](#).
 - [The NEED Project](#): National Energy Education Development
 - [Energy Kids](#): U.S. Energy Information Administration
 - [resourcefulness](#): PBS Learning Media
 - [Austin Water Water Use Calculator](#)
 - [Water, Texas](#): Contest for short films about water in Texas and links to past winners.

Watt Watchers Glossary

This is a glossary of terms used throughout the Watt Watchers of Texas program, which are also found at <https://www.watt-watchers.com/glossary-of-terms>.

Appliance: A device or machine for performing a specific task

Bill: An itemized statement of goods or services

Blades: A broad flat surface; found on turbines

Boiler: A tank in which water is turned to steam for heating or power generation

Check sheet: Form used during Watt Watchers of Texas patrols to record energy usage data

Coal: A black combustible solid used to provide heat during power generation

Compact fluorescent lamp (CFL): A type of fluorescent lamp which screws into a regular socket or plugs into a small light fixture, that uses less energy than a typical incandescent bulb but more than an LED bulb

Conserve: To keep from being lost, damaged or wasted; saved

Cost benefit analysis: The process of weighing the total expected costs vs. the total expected benefits of one of more actions in order to choose the most profitable option

Crisis: A time of great danger whose outcome decides whether possible bad consequences will follow

Dial: The face of a meter or gauge on which a pointer indicates an amount

Draft: Breeze that occurs in a closed space. Air is leaking in from the outside causing the space to be less efficient.

Efficiency: Ability to produce a desired effect or product with a minimum of effort, expense, or waste.

Electric outlets: Areas where appliances can be plugged in to receive electricity

Electricity: An electric current supplied by a public utility for lighting or heating

Energy: The capacity of a physical system doing work

Energy Star: A voluntary partnership with equipment manufacturers across a variety of industries to reduce the power consumption and the pollution associated with the use of electricity

Fluorescent light: A glass tube/bulb that is coated with a fluorescent substance that gives off light when the mercury vapor inside the tube is acted upon by a current

Gas: The fluid form of a substance which can expand indefinitely (not a solid or a liquid)

Generator: A machine for producing electricity

High pressure steam: Water is heated to create steam and is then forced against the blades of a turbine at high pressure to power a generator

Incandescent: Glowing with intense heat; shining brightly; a lamp in which the light is produced by a filament of conducting material contained in a vacuum and heated to incandescence by an electric current

Insulate: To cover with a non-conductive material in order to prevent the passage or leakage of electricity or heat

Insulation: Any material used to insulate

Kilowatt: A unit of electrical power equal to 1,000 watts

Kilowatt-hour (kWh): A unit of electrical energy or work equal to the power supplied by one kilowatt for one hour

Lifetime cost: The cost of an appliance over the lifetime of the appliance

Light emitting diode (LED): An electronic component that gives off light when activated. LED bulbs are more efficient than incandescent or compact fluorescent bulbs

Meter: An instrument for measuring and recording the quantity or rate of flow of gas, electricity or water

Miles per gallon (mpg): the number of miles a vehicle can drive using one gallon of fuel

Oil: Any of various kinds of greasy combustible substances obtained from mineral sources; petroleum

Organize: To provide with structure

Periodic appliance: An appliance that is used once in a while such as the washing machine or dishwasher

Plug sealer: Used to insulate the opening around a switch or plug so that air cannot escape into the walls

Power generation: The process of creating electricity from an energy resource

Power management: A process that allows monitors and computers to enter low power states when they are sitting idle

Pounds per square inch (psi): a unit of measure used for pressure

Rate of return: The quotient of the annual dollar savings divided by the system's total installed dollar cost. Expressed as a percent.

Save: To preserve for future use; to avoid expense

Screen saver: A program used on a computer monitor to protect the screen from burn in. Not necessary with newer computers

Simple payback: The quotient of the total installed cost divided by the first year's dollar savings of an appliance

Spend: To use up, consume, exhaust or wear out

Strategy: A plan or action

Survey: A detailed inspection by gathering information through observations

Switch plate: The cover over an electrical switch such as to turn on the lights

Tally: An account or score

Temperature: A measurement of heat

Thermostat: Apparatus for regulating temperature

Tire pressure gauge: Apparatus used to measure the pressure inside a tire

Turbine: An engine or motor having a drive shaft driven by the impulse of steam, wind, or flowing water against the curved blades of a wheel

Under-inflated: Not enough air inside an object.

Utility: A company providing services such as water, electricity or gas

Waste: To use up or spend without real need

Wind turbine: A generator operated by the winds' rotation of large blades; used as a source of power

Contact Us

Online (via email or contact form):

<https://www.watt-watchers.com>

<https://www.watt-watchers.com/frequently-asked-questions>

By Mail:

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Watt Watchers of Texas

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