Comanche ELECTRIC COOPERATIVE
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Your Touchstone Energy® Cooperative

True to Ourselves

MESSAGE FROM GENERAL MANAGER RONNIE ROBINSON

Many of us have a mother or grandmother who cautioned us "Be yourself" or "Don't be putting on any airs" or some other saying designed to impart what William Shakespeare wrote most eloquently: "To thine own self be true."

That's something we at Comanche Electric Cooperative have always tried to do: Be true to our not-for-profit way of doing business by serving our customers who are also our owners. This is a time of great challenge and great change, but so far we don't see any need to change the core principles that have served us so well for 70 years.

In this time of great flux, we have a head start on many companies that shift identities depending on which way the wind is blowing. We know who we are, and we know our core values.

We don't have to run TV ads to "position" ourselves as local or caring. We are local and caring. We don't have to put a temporary shoeshine on our budget by laying off essential workers or cutting back on necessary maintenance to make ourselves look profitable in the short term. There are no distant stockholders breathing down on us to show we did better this month than last. Your co-op won't jump out of the electricity game to put its assets in a more lucrative business.

We keep our eye on the bottom line at all times and think long term about our core mission to offer clean electric power at the best possible price and provide the most responsive customer service we possibly can.

Sure, there are high energy costs, climate-change and governmental challenges coming down the pike, but no one can represent your interests better than cooperatives. We know who we are. We just have to be the best we can be. But we know who we're working for—you.

In unity with 42 million other electric co-op consumers around the country, we encourage you to ask your U.S. representatives and senators to work with electric cooperatives to keep electric bills affordable. Get involved in this effort by participating in the "Our Energy, Our Future" grassroots campaign at **WWW.OURENERGY.COOP.**

HAPPY INDEPENDENCE DAY

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The offices of Comanche EC will be closed Friday, July 3, in observance of Independence Day.

Power TIP

SAVE ENERGY • SAVE MONEY

- **Whenever possible, turn the air conditioning off, open the windows and use an electric fan to circulate the air.**
- **Don't place heat sources (TVs, lamps, computers, etc.) near the thermostat.**
- **Wear lightweight, loose and comfortable clothing to stay cooler and reduce the need for air conditioning.**

AT COMANCHE ELECTRIC COOPERATIVE

Conservation Matters

Your Touchstone Energy® Cooperative

Small Weatherization Steps Yield Big Results

BY MEGAN MCKOY

Weatherization—the process of sealing air leaks and properly insulating a home—can produce an average energy savings of $358 per household per year, according to the U.S. Department of Energy.

And good news! Through the 2009 American Recovery and Reinvestment Act, known as the stimulus bill, you can recover 30 percent of the cost—up to $1,500—of insulation materials and exterior doors, windows and roofs designed to help reduce your home's heat loss or gain (installation costs are not covered). The credit applies to improvements made to existing homes in 2009 and 2010.

Here are a few of those improvements, as well as tips, that can help make your home more energy efficient:

AIR INFILTRATION

Air that leaks in and out of homes through cracks, crevices and holes can increase energy consumption. Here are some helpful tips to avoid air infiltration:

- Seal around pipes coming through walls.
- During hot and cold weather, ensure windows are closed tightly and locked.
- Ensure weatherstripping around doors and windows is tight.
- When your fireplace is not operating, its flue should be closed tightly, with a sign hanging from the flue handle warning that it is closed.
- Check the ceiling behind the cornice of built-in bookshelves for holes cut during construction.
- Drop-down, disappearing stairways should fit tightly into the ceiling and be carefully weatherstripped.
- Make sure your outside dryer vent door closes when the dryer is not in use. This requires cleaning away lint accumulation periodically.

INSULATION

Use home remodeling projects as a convenient means to add insulation to existing cavities. Different insulation requires different installation techniques—follow what is recommended by the manufacturer.

- If you have R-19 or less insulation in your attic, consider bringing it up to R-38 in moderate climates and R-49 in cold climates.
- In cold climates, if you have R-11 or less floor insulation, consider bringing it up to R-25.
- Blown-in wet cellulose or high-density foam insulation can stop infiltration better than fiberglass.
- Proper installation of insulation should prevent moisture in your walls.
- Make sure to have perimeter insulation around crawl spaces, basements and ceiling insulation—the most important places to have adequate insulation.
- During construction, seal all openings, plates and walls with foam or caulk.
- Insulate and seal ducts in attics, crawl spaces, garages and other unheated areas.

WINDOWS

A considerable amount of heat transfers through windows. If you have single-pane windows, consider doing the following:

- Tighten and weatherstrip your old windows and add storm windows.
- Consider replacing old single-glazed windows with new double-glazed windows.
- In colder climates, low-emissivity coatings on glass can help reduce heat loss through windows.
- In hot climates, consider adding solar screening to west-facing windows that catch a lot of sun late in the day.

HEATING AND AIR CONDITIONING

Heating and air conditioning use the largest chunk of your home energy dollar. Keep them running "lean and mean."

- HVAC systems should be checked to verify they are moving the correct amount of air. An HVAC technician can tell you whether they are.
- Heat pump and air-conditioning systems should be checked annually to verify they are properly charged, strictly in accordance with manufacturers' guidelines.
- Inside and outside coils should be kept clean and free of debris.
- Return filters should be changed monthly.
- Have an HVAC technician check carefully for duct leaks. Leaks that are found should be sealed with fiberglass mesh and mastic sealant.

Megan McKoy writes on consumer affairs for the National Rural Electric Cooperative Association.

On the second day of the fair, students uncovered the earthen oven and sampled food they'd placed there on the previous day.

Energy Technology Fair

From Paleolithic to Modern Times

BY SHIRLEY DUKES

"Welcome to Gustine School's first Energy Technology Fair. Today you are going to see how resources and energy have been used by people, beginning with the first Americans up to modern times. This is exciting stuff! We hope that when you leave today, you will be excited about the primitive skills you will discover. We also hope that you will appreciate how much better our lives are thanks to the many products, including energy, that are made from fossil fuels. Finally, we know that you might hear a lot of doom-and-gloom news stories about how we're running out of the fuels we need to make energy and how dirty they make our planet. We know that people worry about fuel costs getting so expensive that few people can afford it. We want you to leave knowing that we have the resources and technology to make plenty of clean and inexpensive energy to keep our country strong and free. Let's get started with a day we hope you'll never forget."

Fifth-grader Brittany Rauch made this statement to open the Gustine Energy Technology Fair. On May 4 and 5, 67 fourth- and fifth-graders from Gustine, Priddy and Sidney schools were given the opportunity to not only learn how our modern technology came about, but to witness the progress of that technology firsthand.

The first Energy Technology Fair,

which is expected to become an annual event, was the brainchild of Scott Walters, the fifth-grade teacher at Gustine Elementary School.

"What began as a history lesson several years ago has evolved into a study of how ancient Texans utilized energy and natural resources to survive," Walters said. "While studying prehistoric cultures, my fifth-grade students wanted to hear stories about these people similar to the ones I had told them about historic Native American tribes. Since no stories from prehistoric cultures are known, I decided to create one based on the lifeways and artifacts of a little-known Texas treasure, the Archaic Indians of the Lower Pecos. Few Texans know that one of the greatest bodies of prehistoric art in the world is found in the Lower Pecos region of Texas. There, before the Great Pyramids of Egypt were built, the Archaic Indians of the Lower Pecos began painting stunning images on the walls of rock shelters found in the canyons of the Chihuahuan Desert. Because of the dry climate, these paintings and many of their artifacts have survived for thousands of years."

Walters wrote a historical fiction novel, *Woman Too Young of Panther Cave*, about the Archaic Indians of the Lower Pecos, for his students. After reading the novel, the students wanted to see the sites that served as the setting for his book. Several years of planning and preparation culminated in a two-day, school-sponsored field trip to the Lower Pecos, which also included a wild cave tour of Kickapoo Cavern as well as a viewing of the evening bat flights at Devil's Sinkhole. The trip was such a success that it has continued to be an annual event for the class.

But, according to Walters, "the students were not satisfied. Now they wanted to know how these people managed to survive. What kind of tools and weapons did they use? How did they make them, and how did they work? The study of the primitive cultures in Texas quickly left the history classroom and entered the realm of science. Available resources like stone, animal and plant matter were identified. Students discovered how these resources were used to survive. They also learned that prehistoric people were scientists who utilized concepts students are studying in today's textbooks."

Each year, the students' curiosity seemed to grow, along with their desire for more information. So when Comanche Electric Cooperative sent an application for the NREA (National Rural Education Association) Mini-Grant, Walters decided it was "the perfect opportunity to build on what they had done in the past to teach students about modern resources that provide our electrical energy needs and the debate regarding what sources of energy we will use to meet our needs in the future."

The NREA Mini-Grant is funded by the National Rural Electric Cooperative Association and is designed to fund special projects in rural classrooms in schools or communities served by cooperatives. Walters applied for, and was awarded, the grant.

Comanche Electric, through the Operation Round-Up® program, then matched the grant. Thus emerged the birth of the "Energy Technology Fair: From Paleolithic to Modern Times."

Among the presenters at the fair were Neal Stilley, archaeologist with the Texas Historical Commission; Paul Smith, formerly a curator with the Witte Museum in San Antonio; Bryant Saner Jr., a member of the Texas Archaeological Society, Southern Texas Archaeological Association and Hill Country Archaeological Association, and his granddaughter Lauren; Tommy Patterson, a local resident whose hobby is the reproduction of primitive artifacts; David Chapman, a retired expert in nuclear energy with Texas Utilities; and Mark Grotjan, Jason Morris and Brad Simpson with Invenergy Wind Company.

Neal Stilley demonstrates to the students the proper technique for launching a spear with an atlatl.

Patterson, wearing a leather, beaded replica of a Comanche Indian shirt he made from natural resources, started the fair off by showing the students some of the arrowheads and Indian artifacts he has collected and built. Primitive cultures had no choice but to use the resources available to them for almost all their needs. Animal matter was one of the major sources they used, and very little of any animal was wasted. Bones were used as tools, weapons and jewelry. The meat of the animal was cured and eaten; its gallstones were used to make

yellow paint pigment; the hooves were boiled to make glue; the sinew was used for bowstrings and for sewing threads; tails were used for flyswatters; and brains were used in the process of tanning hides.

Patterson then demonstrated the art of brain tanning. He began by explaining how the chemicals in the brain matter released an enzyme necessary to soften rawhide and get it to a state where it could be worked with, and how the animal hides were stretched and pulled constantly until they were dry in order to create the soft and supple tanned hides. Having brought several pieces of soaked rawhide for the students to work with, and with the aid of different students throughout the two-day fair, Gustine ISD now has ownership of three pieces of beautifully tanned leather to add to its collection of artifact examples, and the students have an idea of the energy that was put into the making of the hides used for clothing, tepees, pouches, etc.

Stilley, a volunteer archaeological steward with the Texas Archaeological Stewardship Network, began his presentation by building an earthen oven to demonstrate how primitive cultures cooked their food. With the help of students, Stilley dug a hole in the ground, lined it with rocks found in the area and added small sticks and branches gathered by the students plus tinder in the form of dried grass.

He then showed them the art of primitive fire starting. Using only things found in nature, Stilley used friction to start embers, which he gently placed into the dried grasses to produce flames. Once the stones reached the desired temperature, potatoes and onions the students had prepared were placed on top of the stones and covered with soil and left to cook. As the food cooked, the group moved to another area of the school grounds, where Stilley had set up a demonstration of the atlatl, a device used to propel spears.

Tommy Patterson teaches students how to prepare hides using the brain tanning method.

"Atlatl is an Aztec word for spear thrower," Stilley said. "It was in use as far back as the 1500s when Cortez and his conquistadors entered Mexico. It had a much greater impact than the hand-held spear." Stilley concluded his presentation by allowing the students to take a turn at throwing spears using the atlatl. This, along with the food, was perhaps the favorite part of the day for most of the students.

Smith was on hand with his collection of flint and tools, which he used to show students how primitive cultures made spear tips, arrowheads and knives used for hunting and everyday living.

Saner, an archaeologist belonging to several archaeological societies and associations, brought an assortment of prehistoric tools and fresh vegetation to demonstrate how primitive cultures used creativity and necessity to survive. Saner began his presentation by describing some of the very unappealing items ancient people were forced to eat to survive, such as raw snakes, rats and the undigested food found in the stomachs of the game they killed. Scientists are able to identify items such as these in the preserved remains of Indians they have found in dry climates such as in caves and other burial sites.

Saner demonstrated to the students the various tools used by the Indians, explaining how they were obtained, how they were built and the many uses of each one.

The students then had the chance for some hands-on fun, using primitive tools to chop a 4-inch piece of box elder wood. Saner's granddaughter Lauren demonstrated to the students the process Indians went through to extract fibers from plants. Using the primitive tools with the leaves of a yucca plant, students were able to scrape the leaves to extract fiber. Lauren then taught them the technique of twisting and braiding the fibers to make twine.

Following a delicious lunch of bison burgers, along with the potatoes and onions cooked in the earthen oven, the students began to learn about the more modern age of electrical energy. The afternoon session began with an introduction to Thomas Edison and many of his modern inventions, such

Archaeologist Bryant Saner's granddaughter Lauren shows how fibers can be extracted from a yucca leaf using primitive tools.

as the telegraph, the phonograph, the moving picture and alternating current electricity.

Samantha DiPasca and Bailey Miller, students from Walters' fifth-grade class, began the presentation with a brief history of fossil fuels and a list of many everyday items made from them. This was a very good example of why the use of fossil fuels will never be completely eliminated, regardless of how many people feel about them.

Walters had constructed a replica of an electric line, complete with poles, insulators and wires, placing a small bulb at the end of the line. Students were each given a chance to turn a hand-crank generator to produce enough electricity to run through the line and light the bulb.

Walters is a collector of many things, including Edison artifacts, such as an original Edison lightbulb. In a darkened room, with these young students looking on, the bulb was lit for the first time.

As an employee of an electrical business, this section of the day was probably my favorite.

From the era of Edison, students entered the modern age. Comanche Electric Cooperative was on hand with an arcing demonstration. Linemen Labin Scott and Keith Steward and Safety Director Shorty Hatley demonstrated to the students not only how modern electrical systems work, but also the dangers involved and what one should do if he or she should come in contact with electricity. Amid much *oohing and aahing*, the students saw firsthand what happens as electricity moves through the lines, and how to stay safe around electricity.

The day of fun and learning concluded after Chapman spoke to the students about nuclear energy, and fifth-grader Bianca Bennett gave a description of wind energy. Grotjan, Morris and Simpson from Invenergy, a wind farm firm headquartered in Chicago, gave the students a description of a wind turbine and how it works, as well as the safety measures they must follow when working on the turbines.

Thanks to Walters' hard work and the support of the Gustine ISD school board and staff, students of Gustine, Priddy and Sidney elementaries had an opportunity to live a day in history. These students were fascinated by what they saw and heard, and it would not surprise me if some of them grow up to be scientists and archaeologists because of the amazing things they saw and did at the event.

This is what learning is all about!

COMANCHE ELECTRIC COOPERATIVE

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FIND US ON THE WEB AT WWW.CECA.COOP

YOUR "LOCAL PAGES"
This section of *Texas Co-op Power* is produced by Comanche EC each month to provide you with information about current events, special programs and other activities of the cooperative. If you have any comments or suggestions, please contact Shirley at the Comanche office or at sdukes@ceca.coop.

COMANCHE ELECTRIC COOPERATIVE

Your Touchstone Energy® Cooperative

Notice of Capital Credit Allocations

Capital credits were recently allocated to accounts of members of Comanche Electric Cooperative for the year 2008.

After the end of the calendar year, cooperatives must determine what, if any, margins from operations were made during the year and allocate these margins to members' accounts.

Your cooperative's operating margin is any money left after all its operating costs have been paid. Since members are owners of the cooperative, operating margins are allocated to their accounts as capital credits.

These capital credits will be returned to members in the future—in the form of estate refunds or general refunds—when doing so will not weaken the financial condition of the cooperative as determined by the board of directors.

In the meantime, the funds remain invested in the cooperative plant, credited to each member's account, even though the member may move away from Comanche Electric's lines.

It is very important that departing members keep the co-op informed of their current mailing addresses so that those members can receive capital credit refunds when they are paid.

Capital credits for 2008 were calculated by multiplying each member's bill by the multiplier at right. For example: If your total annual residential bill from the cooperative (consisting of energy billing and power cost adjustment) was $500, simply multiply that amount by .02532. The product is $12.66.

In calculating your total bill, include any security light charge, but do not include any tax, service or miscellaneous charges.

If you have any questions concerning these calculations, please feel free to contact the co-op office.

This article is intended to serve as an official notice of allocation of capital credits for 2008.

Residential	**.02532**
General Service	**.03584**
Large Power	**.00083**
Commercial	**.03601**
Large Commercial—Substation	**.00485**
Large Commercial	**.00768**

Substations Play Key Role in Safe, Reliable Power

You may think, "Why would I want to know about substations?" Substations are an important part of the system that brings you safe and reliable electricity each time you flip a light switch or turn on an appliance.

Substations are key components of your electric co-op, serving as points of delivery in the transmission system. Substations meter distribution equipment, and power lines step down voltage for distribution to homes and maintain voltage at a constant level.

This constant level of voltage is particularly important—to travel long distances over wires, electric power voltage must be much higher than the level at which it is actually produced by a power plant. For example, electricity leaves a power plant at about 22,000 volts then is increased to as much as 765,000 volts. The higher the voltage, the lower the line loss and voltage drop—thus, the greater the system's efficiency. As the power gets closer to its destination, voltage is gradually decreased to a level safe for consumers.

Transmission substations give the power its first step-down, and distribution substations step it down even further so that it may be sent on to the consumer. The lines leaving a distribution substation are owned and maintained by the local co-op. These lines carry the power to homes, businesses and schools.

There is a multitude of equipment in substations: transformers, lightning arrestors, circuit breakers, insulators, and much more. A transformer performs the main substation function, which again is to alter the voltage to an acceptable level for distribution. The voltage regulator then maintains a constant outgoing voltage.

It is easy to confuse a "switching station" with a substation, but they are different. Also known as breaker stations, switching stations exist for the protection and reliability of the system. They allow any faults in the system to be sectionalized so that outages will affect fewer customers.

The thing that looks like a garbage can near the top of a pole is, in fact, the transformer. The transformer's function is to increase voltage for efficient long-distance transmission and to lower voltage for use by customers.

So the next time you drive by one of those fenced conglomerations of power lines and equipment, remember that, in spite of appearances, it's an important part of your cooperative's power system. It is helping ensure that you receive electricity in a reliable and safe manner.

But the most important thing to remember about substations is to observe the warning signs and stay away. The substation fences are there to protect you and the equipment that keeps your power on.