


# Norris Electric *News*

Your Touchstone Energy® Partner 

## Who will map your future?

*You can find out on the Youth to Washington trip*

**OK.** So you aren't really into politics. As a junior or senior in high school, you're thinking about college and where you're going to come up with more than \$100,000 to pay for higher education. You're also trying to decide what you want to work at the rest of your life to make that college experience pay off.

Oddly enough, the very people who may have answers to those questions are wearing the title of state legislator or seated in chambers of the U.S. Congress in Washington D.C.

Before you know it, you will be voting in your first election and the weight of the country's decisions will partially belong to you. Will you support a Congressman who wants to pass Cap & Trade? Will you be in favor of farm subsidies? As you approach what was once "draft-age," do you think we should send more troops to Iraq and Afghanistan or should the military be strengthening our borders? Oh, and when you get the opportunity to meet your Congressman, in addition to these questions will you ask: What has Congress done to make higher education more affordable and will I be able to find a job when I graduate?

Electric and telephone cooperatives in more than 40 states believe that young people deserve a first-class opportunity to educate themselves in the government process. Each year,



the cooperatives across the nation sponsor more than 1,500 high school students to make the trek to Washington to get that personal initiation, and they have a lot of fun in the process.

It all begins in Springfield on April 21, 2010 during the Illinois Electric and Telephone Cooperative Youth Day where nearly 300 students will visit the State Capitol and spend much of the morning meeting with legislators. You will tour the Supreme Court and spend the afternoon touring local sites.

While here, staff from the Association of Illinois Electric Cooperatives will conduct interviews with students from various co-ops to determine those who win the trip to Washington D.C. To be considered for this trip, see your guidance counselor for details as participation rules vary from co-op to co-op.

This year marks the 51st trip to the nation's capital and promises to be as exciting as ever. Students learn the

principles required to keep cooperative members working together for the cooperative's success by establishing their own "chip and pop" cooperative while on the bus trip.

While in Washington during the week of June 11-18, in addition to meeting with Congressman from Illinois, students are treated to tours of historic sites, given the opportunity to make life-long friends and receive information to help determine career paths.

Hopefully, at the conclusion of the tour, you will understand the only crystal ball in Washington is the one you help develop through your participation in government and public service. The future of the country depends on the youth of today getting involved.

To learn about this opportunity, contact your local electric or telephone cooperative or visit the website at [www.aiec.coop](http://www.aiec.coop) for additional details.

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# Wicked Wiring Warnings

## Give your home a wiring checkup

**O**ur homes are a lot like us. They age just like we do. They begin to creak and moan. They begin to show their age. They, like us, have aging systems, some that can be seen and some that cannot. Just as we need to get checkups from time to time, our homes also need checkups. When it comes to the electrical system in our homes it is important to have the doctor do a house call when any of the following warning signs are noticed. If you notice any of these signs you should immediately call a licensed electrical contractor and have an electrician give your home a checkup.



be dangerous in the scenario above because the hot wire has come in contact with the metal frame of the appliance. The breaker will not trip because it does not see the fault. With newer electrical systems, a third wire is provided with the wiring. This third wire is called the equipment ground. The equipment ground is attached to the metal parts of appliances. When the hot wire comes in contact with the ground, the breaker or fuse is de-energized. In the National Electrical Code, ground-fault circuit-interrupters are required in dwelling units for all

If you experience frequent circuit breaker tripping or fuse blowing, take notice. Breakers and fuses are overcurrent protection devices. They are rated in amperes and protect the wiring in our houses from overcurrent. Overcurrent may result from any of the following three conditions. 1. Overload: the operation of equipment or of a conductor in excess of its normal full-load rating, or its rated ampacity. If an overload persists for a sufficient length of time dangerous overheating can occur. 2. Short circuit: a low resistant connection either by accident or intentional between two points in an electrical system. Short circuits can be caused by the failure of the insulation surrounding the conductors of the circuit. They can also be caused by natural sources: lightning, wind and from human intrusion. 3. Ground fault: an unintentional low resistant connection to ground by the system conductors. Ground fault circuit interrupters are devices that

protect personnel by de-energizing a circuit or portion of the circuit when the current to ground is six milliamperes or higher.

Over-sized fuses and breakers can be extremely dangerous when an overload condition exists. A licensed electrical contractor can inform you if this condition exists in your home. It is important to note that a short circuit and a ground fault are not overloads.

If you experience a tingling sensation when you touch an appliance or metal object this is a warning sign. Getting a shock when you touch appliances in your house can indicate a more serious problem. You should immediately unplug the appliance and discontinue its use.

This can occur when you have a ground fault in an improperly protected circuit. Many older homes are of the old two-wire circuits. These consisted of the energized (hot) wire and a neutral return wire. These older wiring types can

125-volt single-phase 15 and 20 amp receptacles in the following locations:

1. Bathrooms
2. Garages and other buildings that have a floor located at or below grade level not intended as habitable rooms and limited to storage areas, work areas, and areas of similar use.
3. Outdoors.
4. Crawl spaces at or below grade level.
5. Unfinished basements defined as areas not intended as habitable rooms and limited to storage areas, work areas and the like.
6. Kitchens – where the receptacles are installed to serve countertop surfaces
7. Laundry, utility, and wet bar sinks installed within 6 feet of the outside edge of the sink
8. Boathouses. By installing properly grounded and ground-fault protection in these areas you can greatly reduce the possibility of shock hazards.

Discoloration or an abnormally warm receptacle or wall switch and/or sparks coming from the devices are also sure signs of trouble. These

could indicate arcing, smoldering, burning happening behind your outlets due to loose connections, damaged or improperly installed wiring in the outlet, or a problem with the receptacle itself. You should immediately avoid using the outlet or switch and contact a licensed electrical contractor as soon as possible to correct the problem.

Beware of a persistent burning smell from a light fixture, appliance, room or area. This may indicate that a light fixture may have the wrong size lamp for the fixture. Use only the specified wattage and trims indicated by the lighting fixture. It may indicate an appliance that is overheating or malfunctioning. In this case unplug the appliance or turn off the circuit breaker until a further investigation can be made.

Flickering or Dimming Lights should open your eyes. This could indicate loose connections at electrical termination points on switches causing arcing and overheating. Left uncorrected overheating can

occur resulting in a fire hazard. It could also indicate a short in the wiring system.

All of these warning signs can be detected when your home is given its proper electrical checkup! A licensed electrical contractor may recommend the installation of life saving devices such as the ground-fault circuit-interrupters, smoke detectors and carbon monoxide detectors. He may also introduce you to the Arc-Fault Circuit-Interrupter Breakers required in new homes since 2000. These devices are intended to provide protection from the effects of arc faults and de-energize circuits before a fire can be started. He may indicate to you that you get a total rewire of your electrical system. This is also recommended by the Consumer Product Safety Commission, the National Fire Protection Association and Underwriters Labs when a home is over 40 years old. Know the warning signs and if your electrical system is beginning to show its age get a checkup to

insure the safe and proper operation of your electrical system.

-- Michael Ashenfelter, Snagamon County Electrical/Mechanical Inspector Safe Electricity Advisory Team, MikeA@co.snagamon.il.us

**Save  
the  
Date!**

**Annual Meeting  
of Norris Electric**

**Saturday, Feb. 13  
Newton Community  
High School**

## How to Replace a Furnace or Air Conditioning Filter

**D**o you check your furnace or air conditioner or heat pump's filter each month? Probably not, but you should. Dirty air filters will reduce your furnace/air conditioner or heat pump's efficiency levels more than you think, costing you more money. Chances are, you'll need to replace your filter every other month, or even more often if you have multiple pets or smoke indoors.

You'll save more money in energy costs by replacing the filter as needed than trying to squeak by another month. Bottom line: Filters are cheap; change them often. Here's how:

Locate your filter. It could be in your furnace, between the air handler and return air duct, or possibly in your return air duct in the

ceiling. Is it furry with dust bunnies? Then it needs to be changed. Be aware that some newer furnaces contain two filters, one serving as a backup. Make sure you locate the main filter on this type of system.

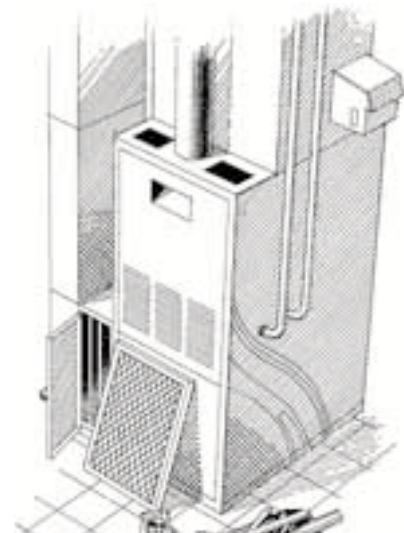
Measure your filter carefully. They come in all different sizes that can vary as little as 1/8-inch. The size should be marked on the old filter.

Determine which type of filter you need. Most filters are disposable while a few are reusable and will just need washing. Fiberglass or paper pleated disposable filters are the cheapest. Be careful when shopping for a new filter. If your system cannot handle the newer, allergen reducing, thicker filters, using one could reduce the airflow to your unit and cut efficiency. When you buy a new filter, get sev-

eral so you have them on hand.

Place the new filter in the unit exactly where you found the old one.

Now, don't just forget about it. Check it every month.



# Load up Your Washer for Energy Savings

By Brian Sloboda

Doing the laundry is a chore that few people enjoy, but today the task is much easier than it was a few decades ago. A job that once required a washboard and considerable elbow grease now requires not much more than the push of a button. The washing machine has certainly made everyone's lives easier. These days, the hard part is picking the right one to buy.

The washing machine performs a fairly simple function ... it cleans clothes. Yet anyone who goes to an appliance store to look at washing machines encounters what seem to be unlimited choices. A few years ago, the choices were simple: do you want white or off-white? Today, consumers are faced with top-loading, front-loading, high-efficiency (HE), water saver, steaming, and wrinkle remover models to name only a few. Of course, as the number of options increases, so does the price.

One option that no one should overlook is an energy-efficient washing machine. These machines can be identified most easily by the Energy Star® label. Approximately 93 percent of all households have a clothes washer, and about 102 million clothes washers currently are in use in the U.S. About 9 million washing machines are sold each year. Energy-efficient models make up slightly more than one-third of all washing machines sold.

Energy Star-rated washing machines do cost slightly more than their less efficient counterparts, running from \$400-1,500, depending upon what features the consumer desires. Obviously, the more bells and whistles added, the greater the cost. Those bells and whistles do not always mean more savings, however. For this reason, pay careful attention to the yellow energy guide on each individual washing machine when making a purchase.

An energy-efficient washing machine can save the typical homeowner around \$50 a year, or \$540-



\$600 over the life of the appliance. Efficient washing machines also will save more than 5,000 gallons of water a year. Careful shopping could mean that the resulting savings will pay for the washing machine over its lifetime.

Energy Star-qualified clothes washers use the latest technology to reduce energy and water consumption substantially, compared to non-qualified models. The energy and water efficiencies of clothes washers are measured according to their Modified Energy Factor (MEF) and Water Factor (WF). These criteria generally limit Energy Star qualification to front-loading and advanced top-loading models.

Front-loading clothes washers use a horizontal or tumble-axis basket to lift and drop clothing into the water, instead of rubbing clothes around a central agitator in a full tub. These units use less energy than conventional clothes washers by reducing the amount of hot water needed to clean clothes. A clothes washer consumes the most energy when it heats the water. Front-loading models also squeeze more water out of clothes by using spin speeds that are two to three times faster than conventional washers, thereby reducing both drying time and energy use.

Energy Star-qualified top-loading models typically use spray valves to rinse clothes, rather than a new tub of water. The spray rinse cycle consists of repeated high-pressure rinses to remove soap residues. This method not only reduces the energy required for water heating, but typically saves an average of 15 gallons of water per wash, compared with conventional clothes washers.

Qualified top-loading models also have sensors to monitor incoming water temperature, which is then adjusted to maintain an optimal temperature. This temperature keeps the water hot enough to dissolve the detergent and provide high-performance cleaning, but cool enough to save energy and minimize hot water damage to fabrics. This technology results in less hot water consumption and therefore less energy consumption. One limitation of efficient top-loading washers is that many models do not offer a high-temperature standard wash option.

Consumers typically purchase a washing machine when their current one fails. Price and features generally are the two criteria used when buying a new washing machine. If you remember to look for the Energy Star logo and shop at a store with knowledgeable staff, you should be able to leave the store knowing that, over time, your new energy-efficient washing machine will pay for itself.

*Brian Sloboda is a program manager specializing in energy efficiency for the Cooperative Research Network, a service of the Arlington, Va.-based National Rural Electric Cooperative Association.*

*The mission of the Cooperative Research Network is to monitor, evaluate and apply technologies that help electric cooperative utilities control costs, increase productivity, and enhance service to their consumer-members.*

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