

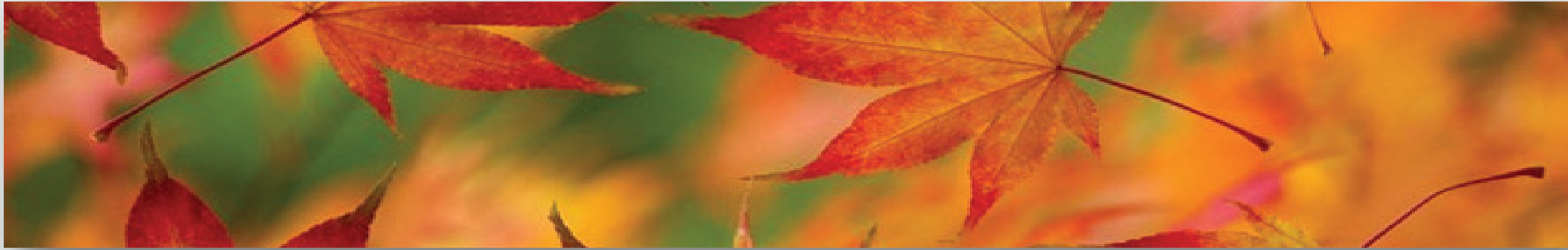


Welcome!

Today's topic:

Weatherization and Seasonal Maintenance





Weatherization and Seasonal Maintenance

**Presented by Monique Johnson
Environmental Green Solutions, LLC**

It's That Time Of The Year Again!!!

Weatherization and Seasonal Maintenance

- **Weatherization & Energy Efficiency Maintenance**
- **Heating System Maintenance**
- **Interior & Exterior Seasonal Maintenance**



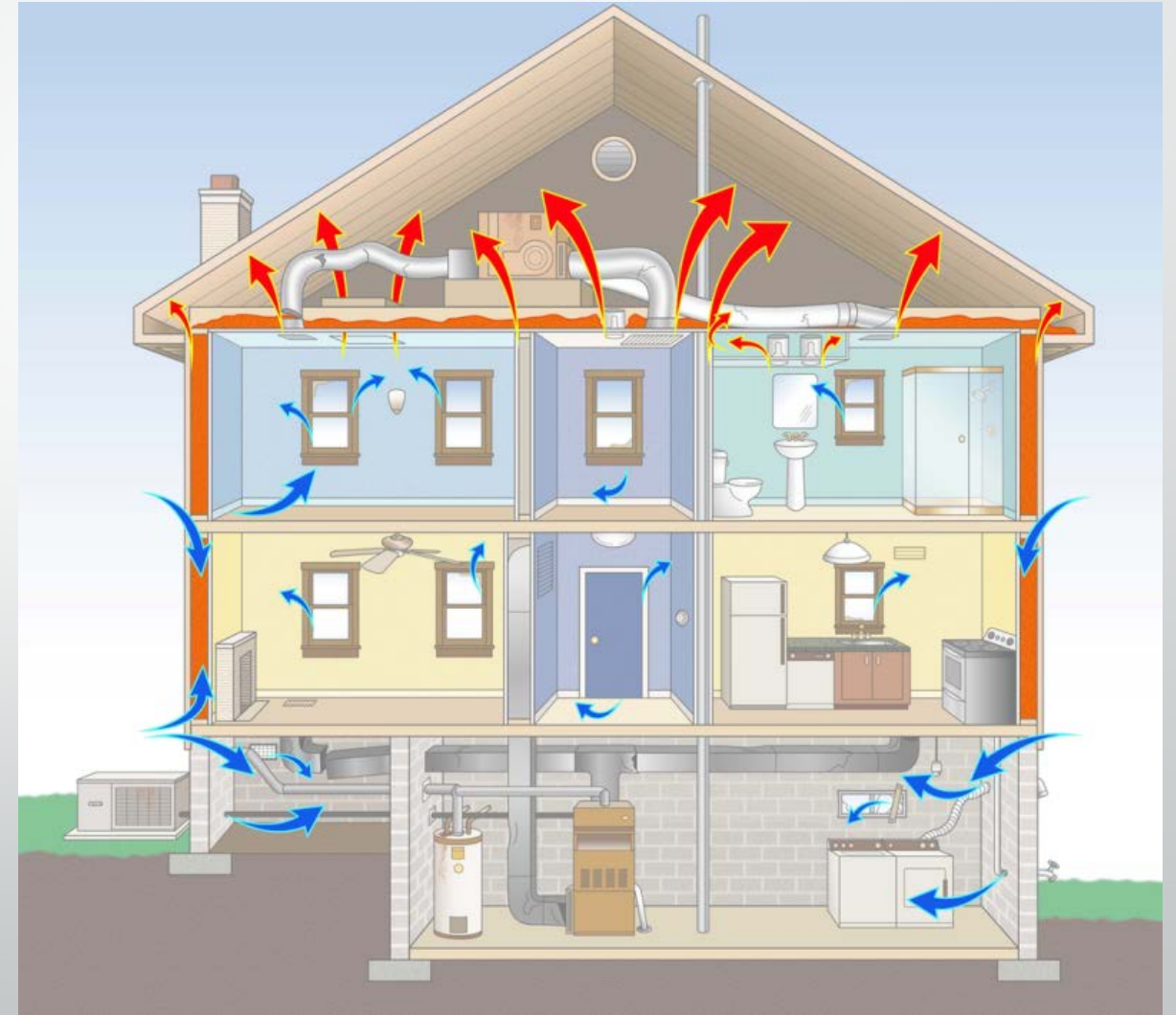
Why is Weatherization Important?

- Saves you money on utility bills
- Protects home from seasonal damage
 - Especially rain and freezing temperatures
- Improves the comfort of your home



Understanding the home building envelope

The thermal envelope separates the conditioned (heated or cooled) interior of a building from the outdoor and the earth.



Window & Door Weatherization



Window Weatherization

You can use caulking, plastic covering, foam and other products to weatherize your windows.



Window weatherization materials can be purchased at any home improvement store.



Window Weatherization

- Leaving window air conditioners in windows during the winter can cause drafts and lead to increased energy consumption.
- Removing the unit from the window is the best option. Removed units should be stored in an attic, basement or utility room away from potential insects and rodents.
- If you must keep the unit mounted in the window, be sure to use an [air conditioner cover](#) that's specifically designed to protect AC units from weather damage.



Door Weatherization

Homeowners are able to install door sweeps, door insulation, and caulk around the trim.

Door weatherization materials can be purchased at any home improvement store.



Outdoor Water Spigot Maintenance

One of the leading causes of frozen pipes are outdoor spigots.



Faucet spigot protection is needed to help protect your pipes from freezing.



Frozen Pipes



How to Prevent Your Pipes from Freezing

- Insulate all piping that's not located in a conditioned space
 - crawlspace and attic



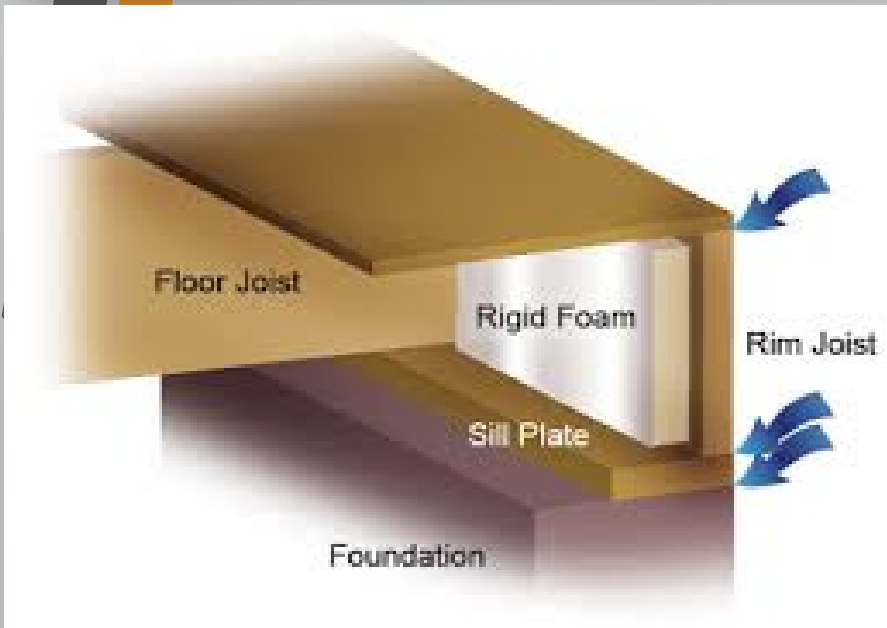
- Turn the main valve off to your outdoor spigots
- Close foundation vents
- Insulate your crawlspace



Check Insulation Level

Poor insulation in your crawlspace and attic can be very costly on your cooling and heating bills. Also, it can cause discomfort.

- Take a spray foam gun. Spray underneath your crawl space around sill plate and rim joist.
- If your crawl space looks like picture #1 a contractor is needed



It's always good to have a contractor come out to take a look at your crawl space and attic.



Address Air Leakage

- Caulk around your windows and doors
- Insulate your crawl space
- Insulate the attic
- Spray foam in openings around the home
 - Gaps, cracks and holes
- Caulk around outlets



Water Heater/Piping

- Insulate water heater
 - Especially if located in garage
- Insulate water heater pipes



- Insulate pipes underneath your home
- Use foam insulation

Duct Work Sealing

Sealing up your duct work will improve the efficiency of the heating unit.



Unconnected/ unsealed duct work can cause comfort problems and increase your utility bill.



How Does A Heat Pump Work

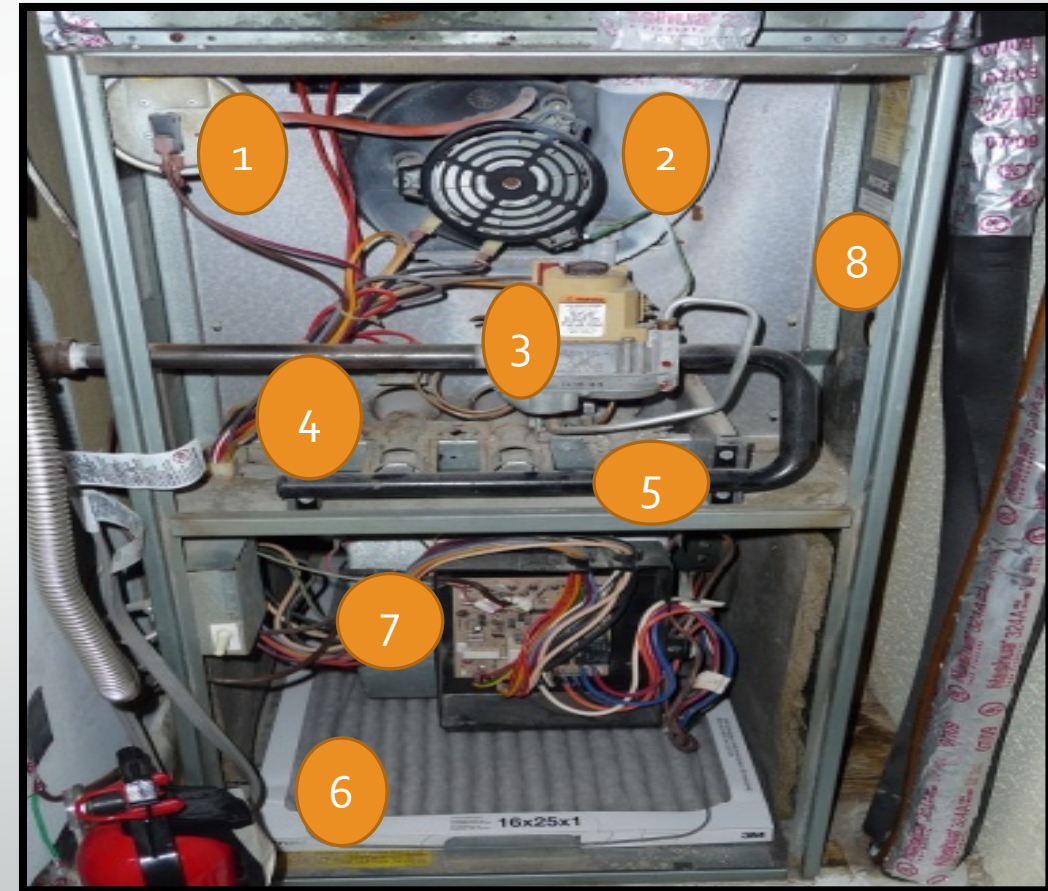


- Refrigerant is used to transfer heat
- Heat exchanger warms refrigerant
- Refrigerant vaporizes, liquid to gas
- Compressor increases gas temperature
- Heat in gas is released to warm house
- Cooling gas condense back into a liquid
- Refrigerant is ready to start cycle over
- Increasing thermostat temperature lets the unit know you need instant heat. The thermostat then energizes the electric heat strips to come on.

How Does A Gas Furnace Work

- A furnace heats the cool intake air from your home and returns the heated air back to the home.
- A heat exchanger is used to contain the burning fuel and exhaust. This will avoid circulating toxic fumes in your home. When burning the fuel, much of the heat is absorbed by the heat exchanger.
- The cool air intake absorbs the energy in the exchanger and returns the heated air to the home through the ventilation duct.

1. Pressure Switch
2. Inducer draft fan motor
3. Gas valve
4. Burners
5. Gas line pipe
6. Air Filter
7. Gas control board
8. Heat Exchanger



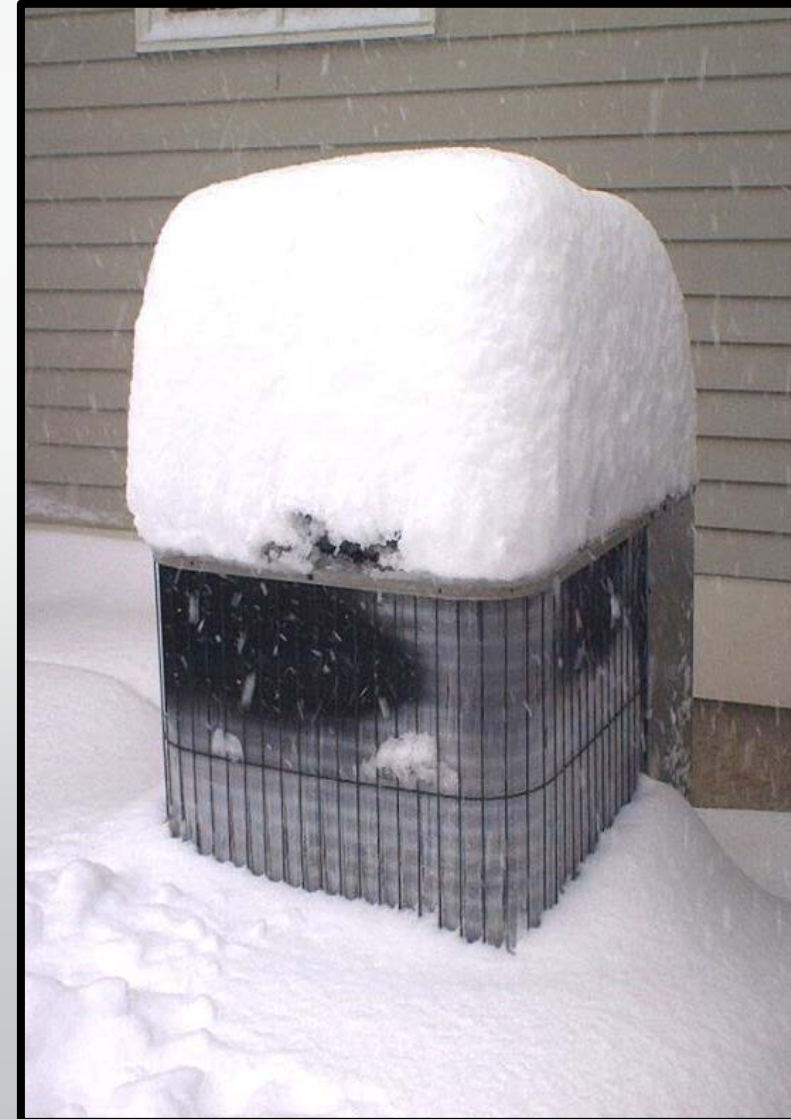
Setting Your Thermostat



- Pros and Cons of a Programmable Thermostat
 - Pros
 - ✓ Able to set thermostat weekly
 - ✓ Can lower temperature when you are away
 - ✓ Filter change reminders
 - Cons
 - ✓ Expensive
 - ✓ Can be technically challenging
 - ✓ Doesn't meet the comfort of all household members
- Dominion Virginia Power Thermostat Recommendations
 - Winter: 68 degrees when away from home
 - Summer: 78 degrees when away from home

Seasonal Unit Efficiency

- Pros - High efficiency Units
 - Can withstand certain temperatures
 - Offer more air flow
 - Use less energy to perform
- Cons- Non-high efficiency units
 - Heat pumps are unable to maintain comfortable efficiency in extreme weather conditions including summer and winter temperatures
 - More costly on your utility usage



Routine Maintenance



- Dirty air ducts.
 - If the filter's dirty, everything past the filter is dirty too, including the air you breathe.
 - This pumps your home full of dust and allergens.
- Reduced air flow.
 - Units are designed to work with a certain amount of internal air flow, and if that isn't being met the unit may malfunction and ultimately fail.
- Skyrocketing power bills.
 - Between the heat & cooling inefficiency and the reduced air flow, a dirty air filter means your A/C has to work much, much harder, which means it takes more power to fuel it.
 - You may not realize how much money could be saved by simply changing the filter.

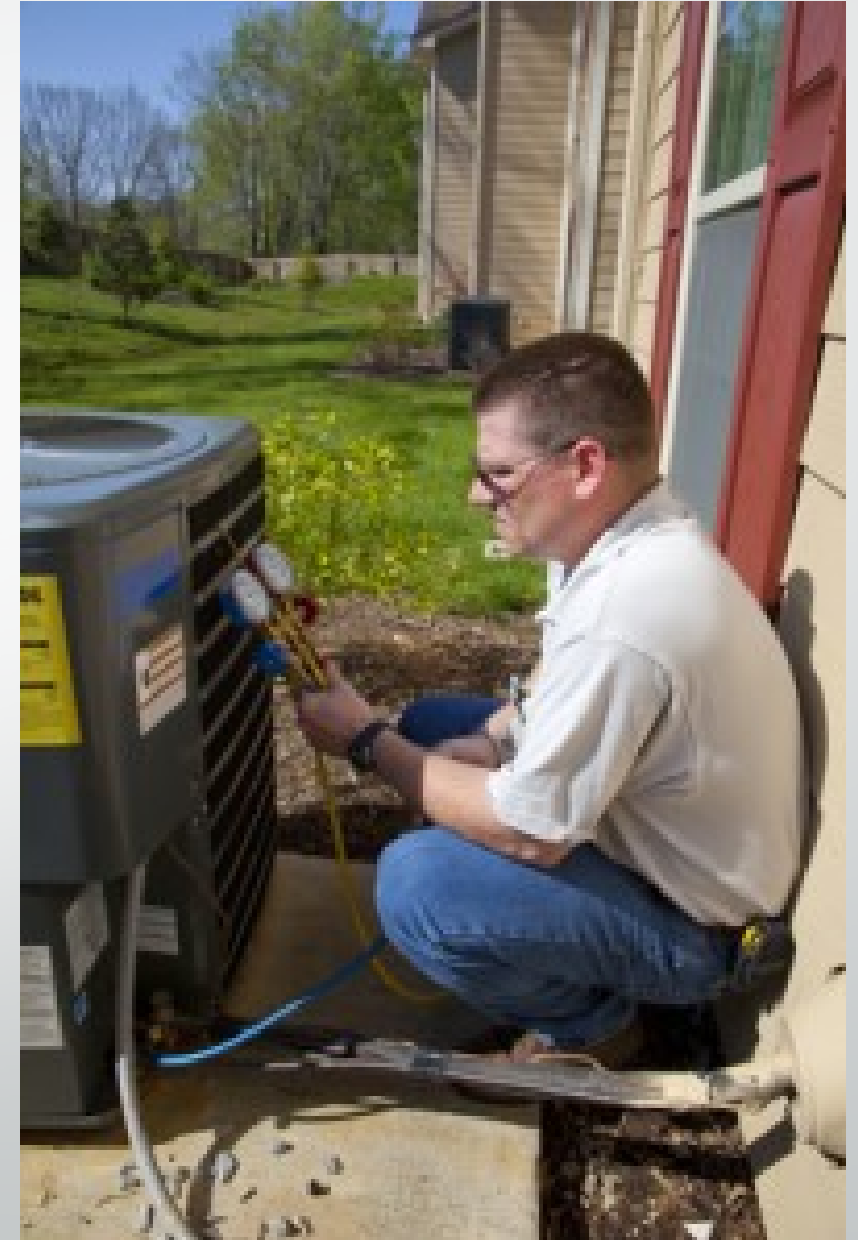
Routine Maintenance

- Change filters every 1 to 3 months, depending on type of filter , especially if you have pets and/or allergies
- Vacuum dust from interior air intakes on a regular basis
- Have your unit inspected and maintained seasonally.
 - Fall and Spring



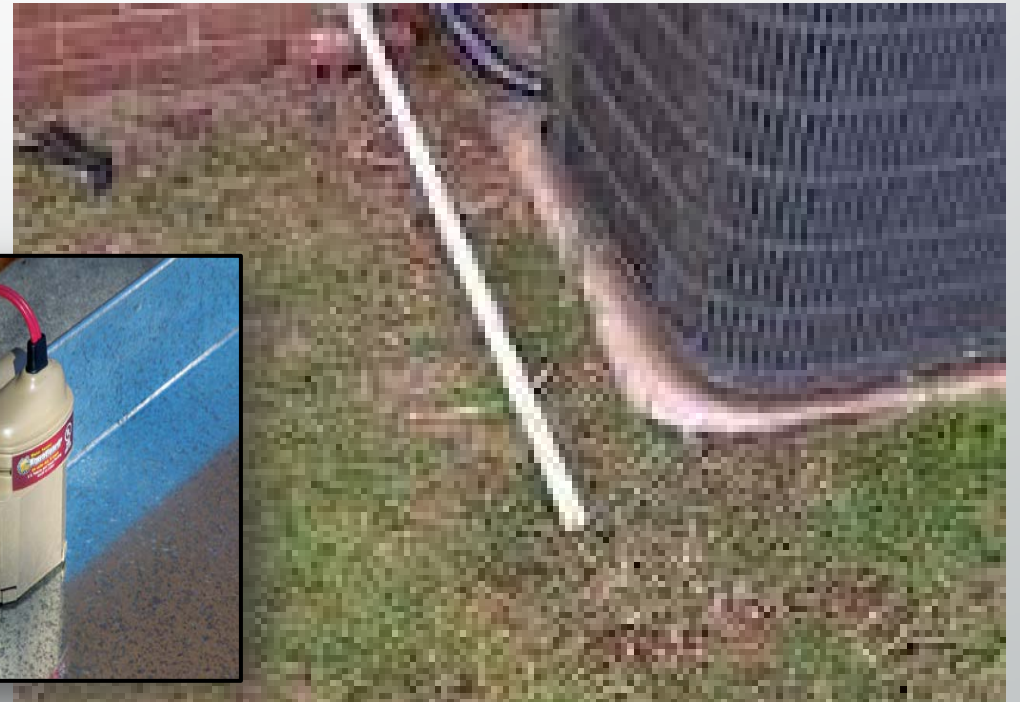
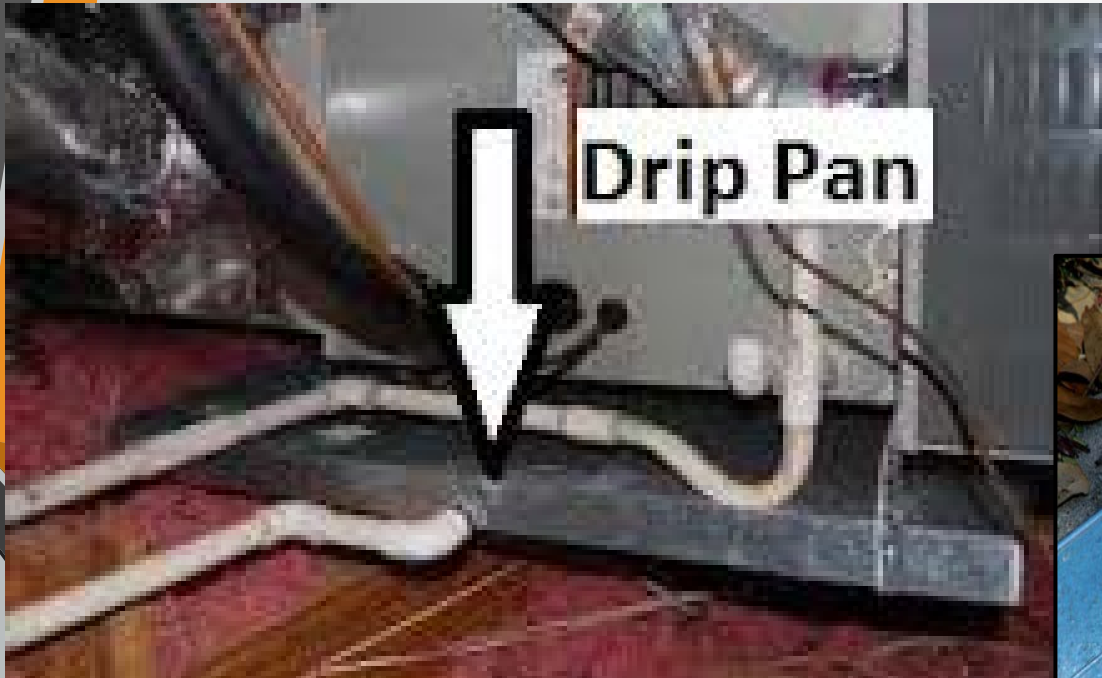
Professional Tune -Ups

- Should be done twice a year.
 - Tune-ups are usually done around the fall and spring.
- Maintenance tune-ups includes:
 - Clean indoor and outdoor coil
 - Change air filter on unit
 - Check refrigerant pressure
 - Check outdoor unit for problems
 - Check indoor unit for problems



Routine Maintenance

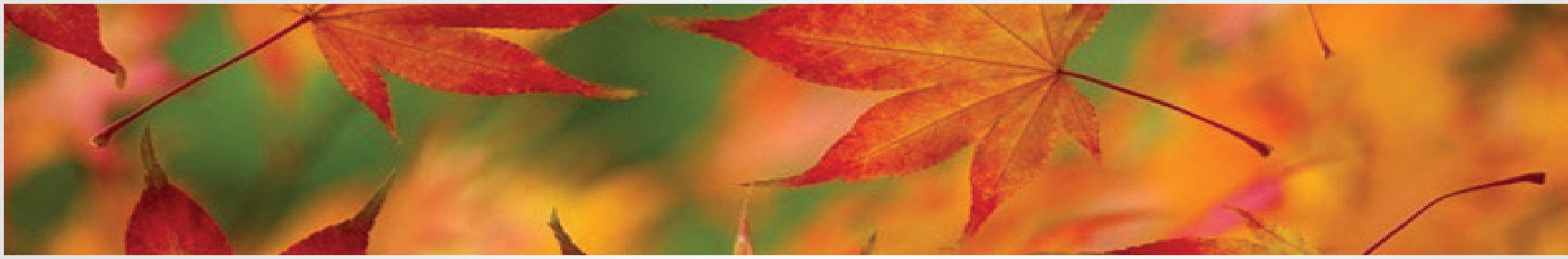
- Condensate Line and Drain Pan Float Switch
 - Monthly inspection (interior and exterior)
 - Air conditioning drip pan – make sure it is draining correctly to the exterior
 - If unit is located in attic, a drain pan float switch should be installed



Routine Maintenance

- Cleaning a Dirty Condenser Coil
 - Turn off the power to the unit(s).
 - Use a water hose with a nozzle and gently wash condenser coil down.





End of Session 1



Weatherization and Seasonal Maintenance

Part 2

Why is maintenance important?

- To catch minor problems before they turn into major ones
- Extends the life of your property
- Saves you from spending big money in the future from improper upkeep



Exterior Seasonal Maintenance



Gutter Cleaning & Maintenance

Cleaning out the gutters, spouts and drains around your home is very important. Improper maintenance can cause damage to your foundation and rot fascia boards. The next few slides will cover cleaning and maintenance tips for your gutters.



Gutter Cleaning Safety

- Before you start cleaning your gutters make sure you are prepared to do it safely.
- **Safety First!**
- **If you are not comfortable with cleaning your gutters, hire a professional.**



Cleaning Gutters

Homeowner vs Professional

- Homeowners who decide to clean their own gutters should always keep in mind safety and risk.
- Choose the right ladder.
- Inspect the ladder.
- Never rest the ladder on your gutter.
- Wear thick work gloves.
- Wear protective eyewear.
- Have a spotter.
- Use a plastic gutter scoop.



Cleaning Gutters

Professional vs Homeowner

- Hiring a professional contractor will help you save time and money.
- Professional contractors are able to fix and repair damaged gutters that homeowners may not notice.



Gutter/ Downspout Maintenance

- Check to make sure gutters are in alignment to verify rainwater collects and drains away from the house. Adjust as needed.
- Clean and remove leaves from gutters.
- Cleaning gutters seasonally will prevent leaves and debris from accumulating in the gutter downspout.



Gutter Guard Protection

A Debris Stopper will fit in most gutters. Debris stoppers are usually made of foam.



Non-Clog gutter protection are made of plastic and have to be professionally installed.



Common Problems Gutter & Downspout



**Gutter
Unattached**

**Damaged
Gutter and
Downspout**



Rotten Fascia

Seasonal Roof Inspection



Roof maintenance can get very tricky for a homeowner. Seek a professional roofer to come out and inspect your roof. The next slide will help homeowners identify certain problems with an on the ground visual inspection.

- 1. Missing Granules**
- 2. Damaged Shingles**
- 3. Curling**
- 4. Hail Damage**
- 5. Ceiling Spots**
- 6. Rotting**
- 7. Damaged Flashing**
- 8. Buckling**
- 9. Missing Shingles**
- 10. Algae Growth**



Ice Dam Prevention



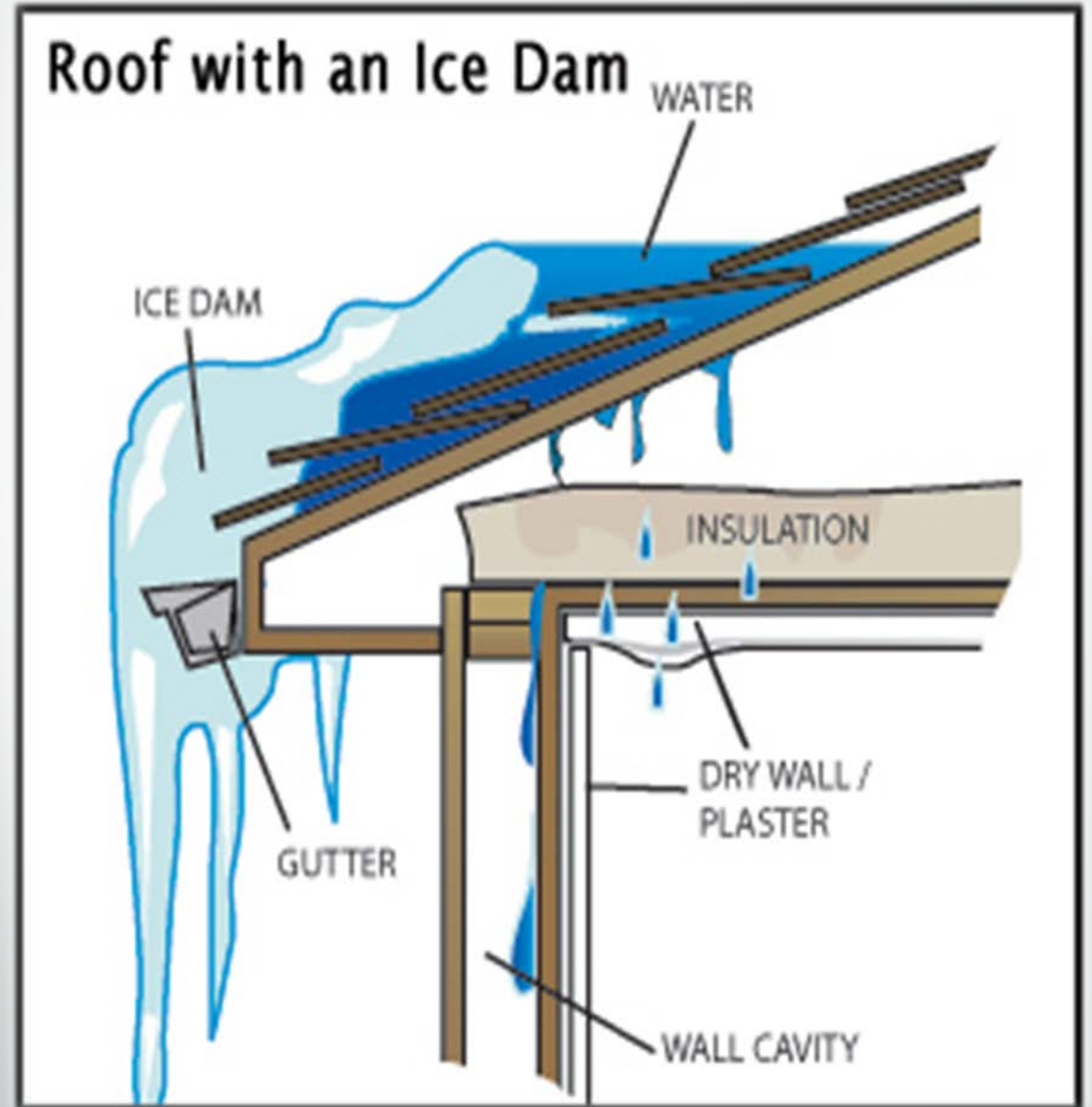
PROBLEM!



SOLUTION!

ICE DAMS

An ice dam forms when the roof over the attic gets warm enough to melt the underside layer of snow on the roof. Water trickles down between the layer of snow and the shingles until it reaches the eave of the roof, which stays cold because it extends beyond the side of the house. The water then freezes, gradually growing into a mound of ice.



Exterior Siding

Damaged siding can cause serious problems for your home.
All siding should be inspected by a professional.



Vinyl Siding Repair

Always examine siding and replace as needed.



All siding should have a moisture barrier.



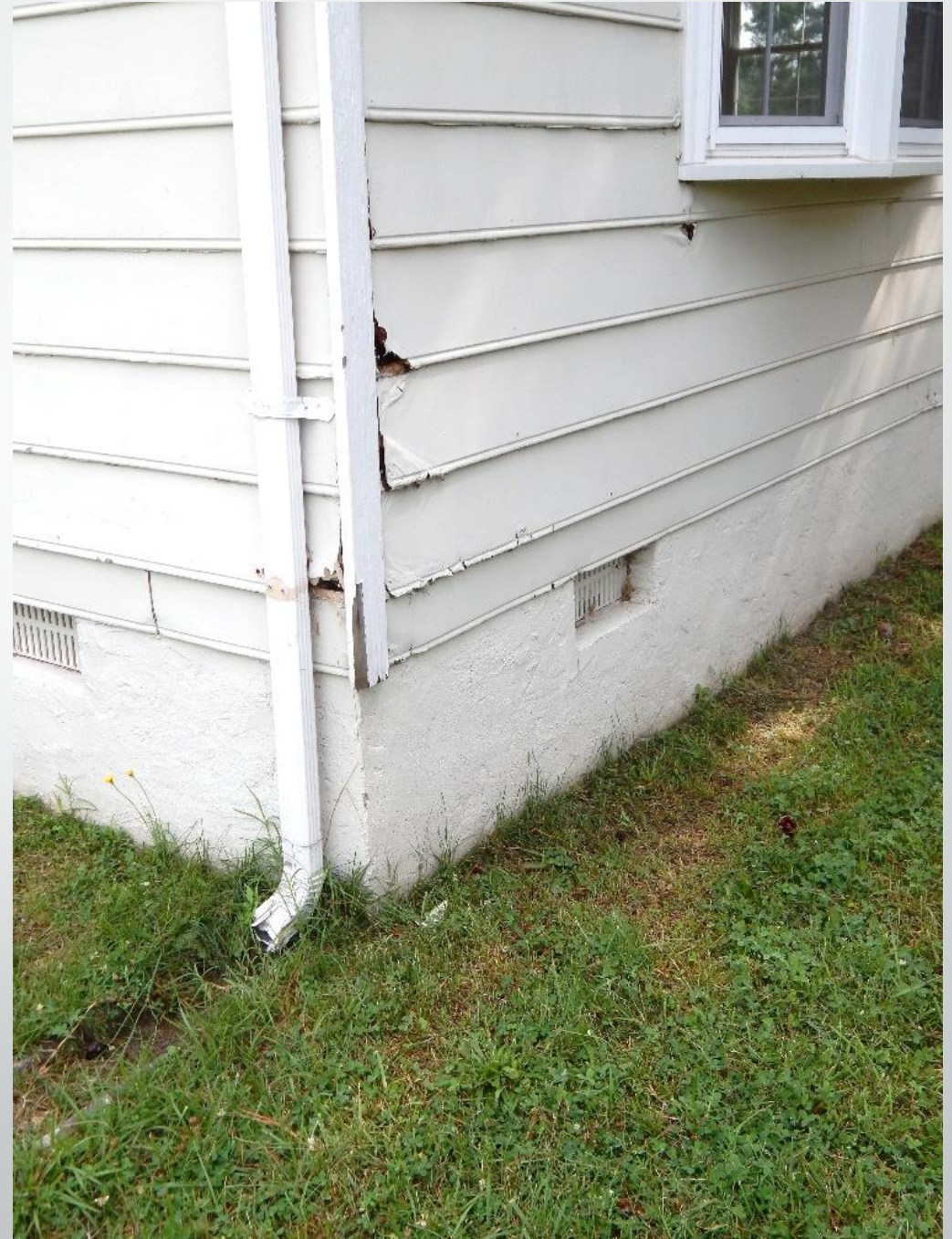
Vinyl Siding Maintenance



- Algae growing on siding.
- Seasonal pressure washing helps to maintain aesthetics and durability.

Masonite Siding Maintenance & Repair

- Will rot and warp if not properly sealed
- Replace damaged pieces of masonite
- Paint siding with an exterior paint every 3 to 5 years to prevent water damage



Painted Wood Siding

- Check for peeling, bubbling and flaking
- Check for water damage
- Paint every 5 years
- Use a wood stain paint or a paint used for exterior wood



Wood Trim

- If able, replace with vinyl trim
 - Will save money, time and less damage
- Otherwise, paint every 5 years
 - With wood exterior paint



Decks and Porches

- Check for loose boards - Replace with screws
- Check handrails to make sure they are secure
- Stain wood every 2 years to protect from water damage and dry rotting



Exterior Drains

- Drain can become clogged allowing water to build up and enter house
- Clear leaves and other debris surrounding drain
- Use a water hose to make sure drain is not clogged



Routine Maintenance

- Wood Fireplace
 - Routine maintenance of removing ashes and cleaning up debris around the fireplace.
 - Once a year, call a chimney sweep to inspect the chimney and chimney cap and to scrub off any creosote that has built up within the chimney.
 - If you don't do this, particularly if you burn a lot of wood, you could get a chimney fire.
- Gas Fireplace
 - You should arrange for an annual check by a professional
 - The service technician should adjust the controls, particularly the ignition system if the fireplace lacks a pilot light.



Routine Maintenance

- Electrical Equipment
 - Check for and replace damaged cords
 - Test ground fault interrupters
 - Smoke and CO alarms
 - Replace battery when chirping or a minimum of once a year – when changing clocks for daylight savings time
 - Vacuum dust from detectors
 - Replace detectors every 8 to 10 years



Routine Maintenance

- Plumbing, Fixtures and Appliances
 - Check washer hoses-connections
 - Replace rubber hoses with stainless steel mesh
 - Toilets
 - Check toilet supply shut off valve
 - Repair running toilets – saves money on water
 - Purchase new fill valve tree at hardware store and you install (learn how on YouTube)
 - **OR** call a plumber to repair
- Next Workshop:

Small Home Repairs and help to tackle plumbing issues!



Routine Maintenance

- Plumbing, Fixtures and Appliances
 - Faucets – interior and exterior
 - Address all drips and leaks; repair or replace broken/faulty parts
 - Check under all sinks on a regular basis for leaks
 - Check around tub and shower for leaks
 - Re-caulk as needed to prevent water damage
 - Check hot water tank for leaks
 - If not repaired, it will rot through the floor
 - Clean septic tank



Routine Maintenance

- Trim trees and remove dead branches
 - If you see signs of large dead branches or detached branches, or cavities with rotten wood call a professional tree service company
 - Remove baby trees growing under decks, along foundations and against fences
 - You can pull by hand when they are young
 - Very hard to dig up once established
 - Check spring and fall



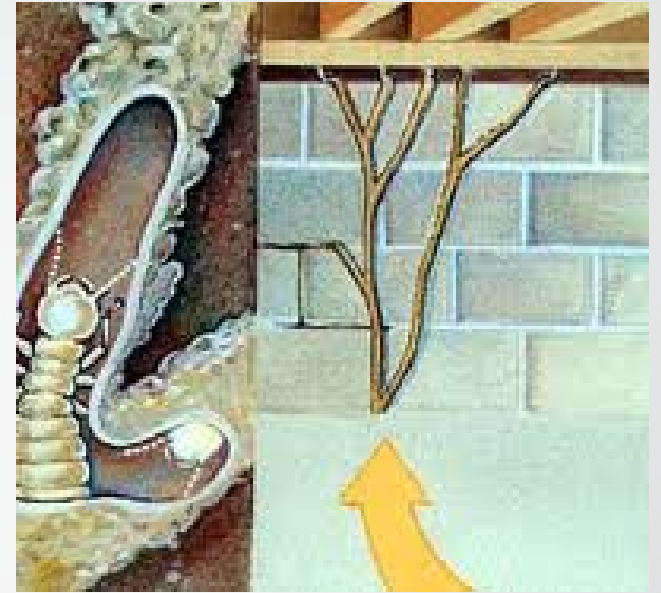
Routine Maintenance

- Basement & Crawlspace
 - Crawl space
 - No wet surfaces, puddles, mold or mildew
 - Sump pump and check that valve is working
 - Check condition of insulation, plastic ground cover, crawl space door
 - Check for rodents, termites, crickets or bees, etc.



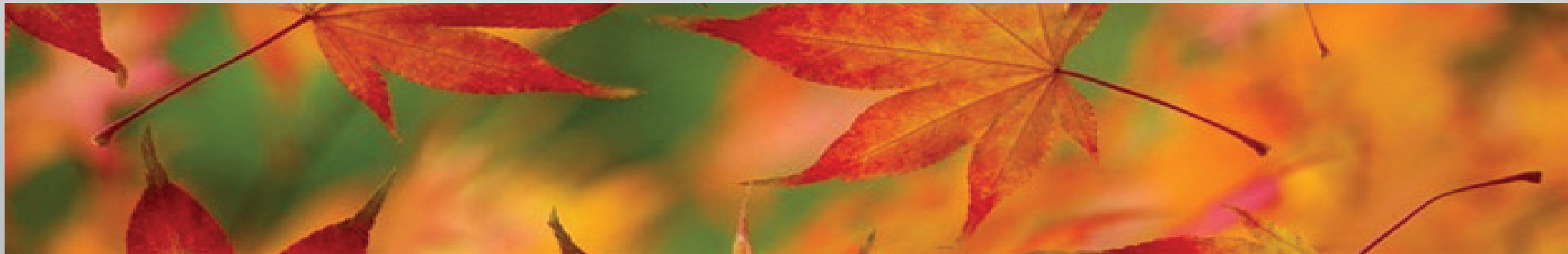
Routine Maintenance

- Protect your home from termites
 - Inspect regularly
 - The Richmond area has an especially high level of termites due to the hot and humid climate
 - Hire a professional
 - Look for mud tunnels in the crawl or other evidence of termite damage



Conclusion

Routine maintenance and weatherization is very important for a homeowner. As the season starts to change, the elements can have a great impact on the functionalities and the longevity of your home.





Environmental Green Solutions, LLC would like to thank you for coming out to the workshop. Have a great winter!

Environmental Green Solutions, LLC

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THANK YOU

County of Henrico, Department of Community Revitalization
Metropolitan Richmond Habitat for Humanity

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Thank you for coming

Next workshop:
Saturday, November 14
Small Home Repairs

