

The Pillars of Energy Education

**Concepts
for
Weatherization Workers**

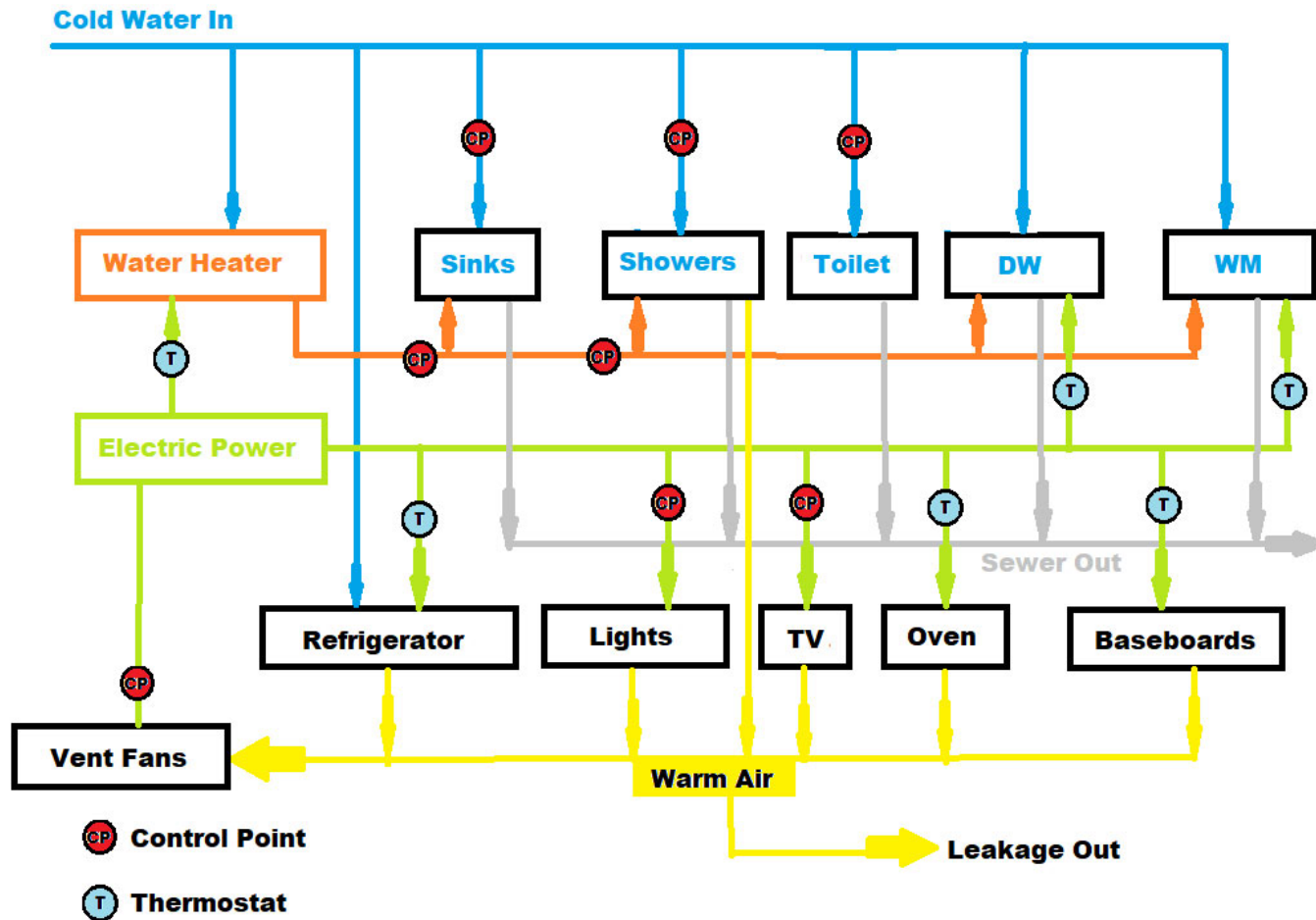


PILLAR ONE :
CONSERVATION

Conservation

- A home has a complex system of energy flowing through it.
- Conservation means using control points to moderate, or control the energy (and matter) flowing through the home.
- Control points are switches, thermostats, valves, and other devices.
- It is especially important to use conservation methods in rentals.

Interactive System Diagram



Major Energy Uses in the Home

- Space Heating and Cooling
 - Water Heating
- Appliances and Lights

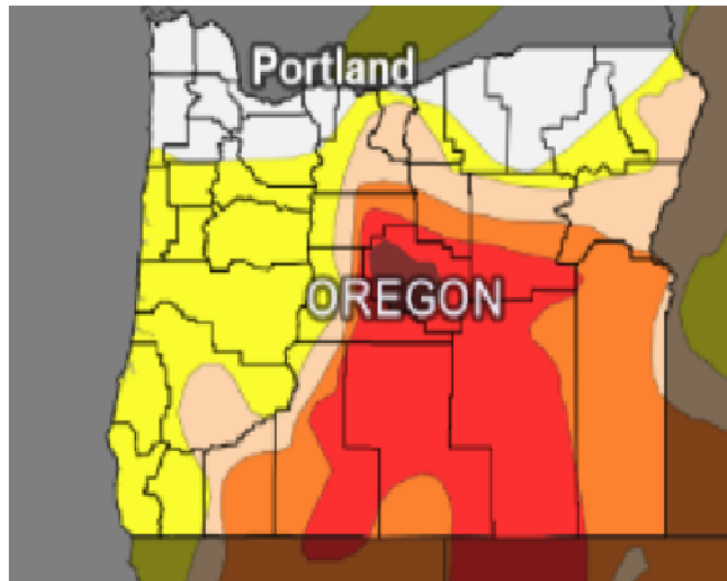




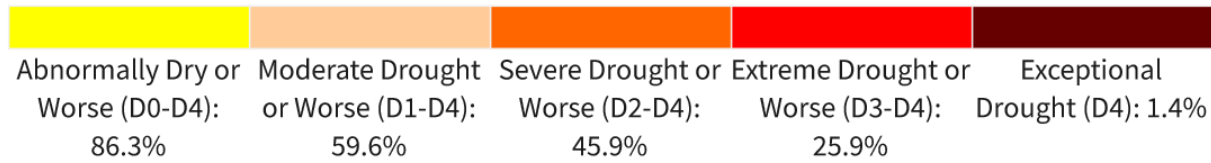
Conservation of Energy and Water

- **Habit changes in use of control points, using the existing devices, can save energy and water.**
- **Water Conservation is extremely important, and will only grow in importance in the future.**

Current U.S. Drought Monitor Conditions for Oregon: Current

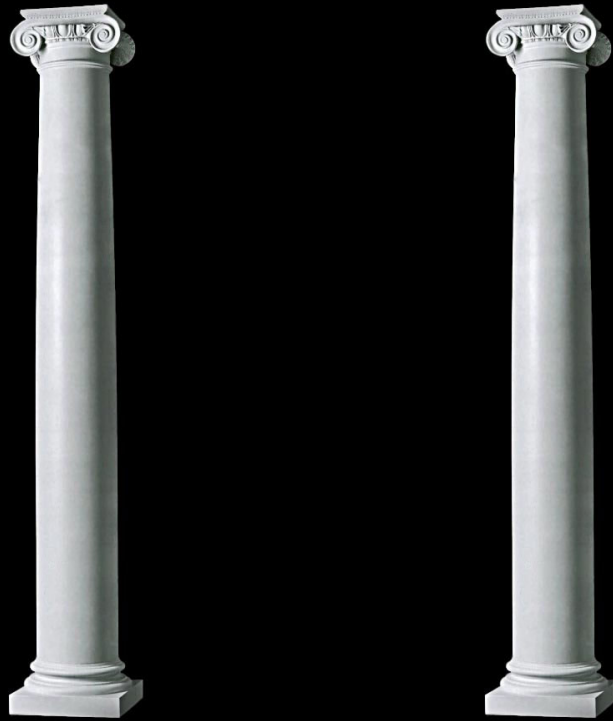


U.S. Drought Monitor for OR



Source(s): NDMC, NOAA, USDA

Updates Weekly - 01/10/23



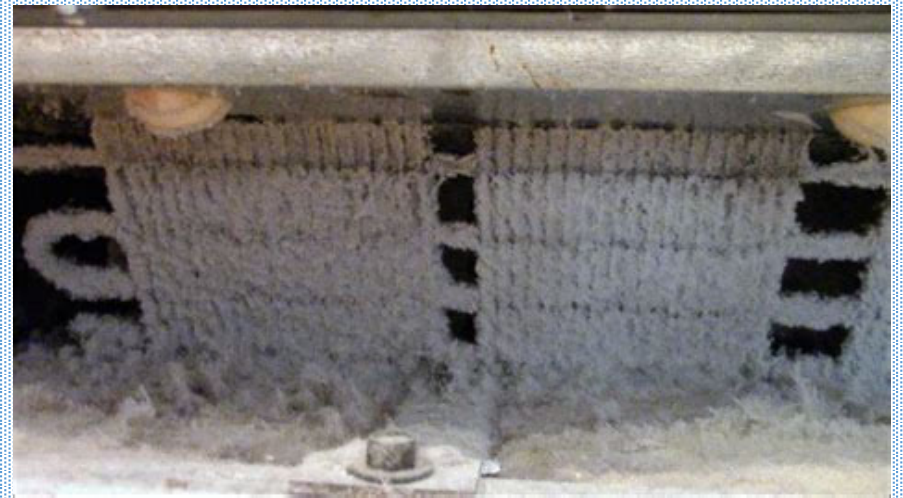
PILLAR TWO: EFFICIENCY

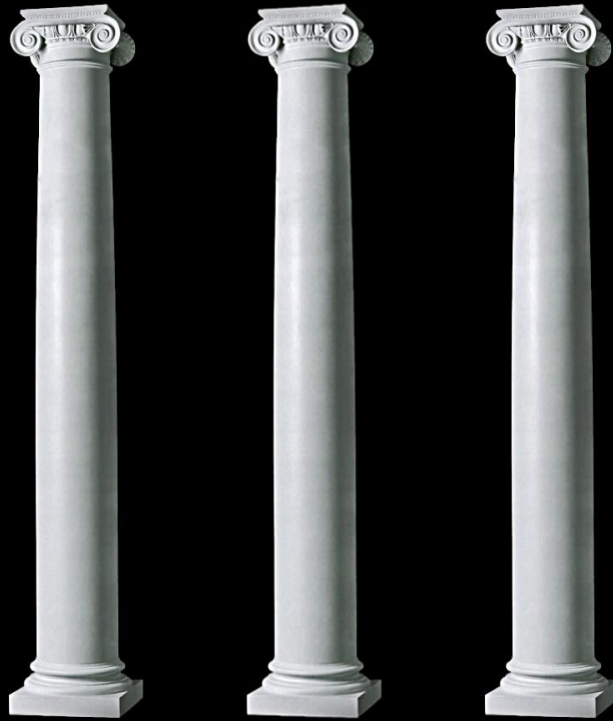
Efficiency

- Efficiency improvements usually mean changes in **hardware**, e.g. new light bulbs, appliances, sealing air leaks, etc.
- Efficiency is usually listed as ratio, or as a percentage, $(\text{output})/(\text{input}) * 100$.
- Lumens per Watt (Efficacy), BTU's per Watt-hr. (HSPF), BTU's per Watt, (Energy Efficiency Ratio)
- Educators need to try to keep abreast of new and changing technologies related to energy and water use.
- Efficiency can be improved in existing devices through **maintenance**.

Maintenance

- **Maintenance is the key to maintaining efficiency.**
- Furnace tune-ups and air filter changes
- Dirty light bulbs and fixtures
- Dirty refrigerator coils
- Dirty baseboard heaters
- Plugged faucets and shower heads
- Dryer lint screens and exhaust pipes





PILLAR THREE:
HEALTH AND SAFETY

Health and Safety

- The interior of a home interacts with the inside and outside environments that can vary dramatically with time.(Heat, cold, smoke, and water)
- Indoor Air Quality (IAQ) is very important to the occupant's well being.
- Moisture, Mold, Volatile Organic Compounds (VOC's), Lead, Asbestos, Radon, Carbon monoxide, Particulates, and Virus spores.
- Ventilation and control strategy awareness.
- Pollutants: Stop the source, contain the source, or ventilate to dilute the source.
- Educators need to be able to assess and make recommendations to help mitigate health hazards. (referrals)

Occupant Safety

- Electrical hazards
- Burn hazards
- Mechanical hazards
- Chemical hazards
- Biological hazards

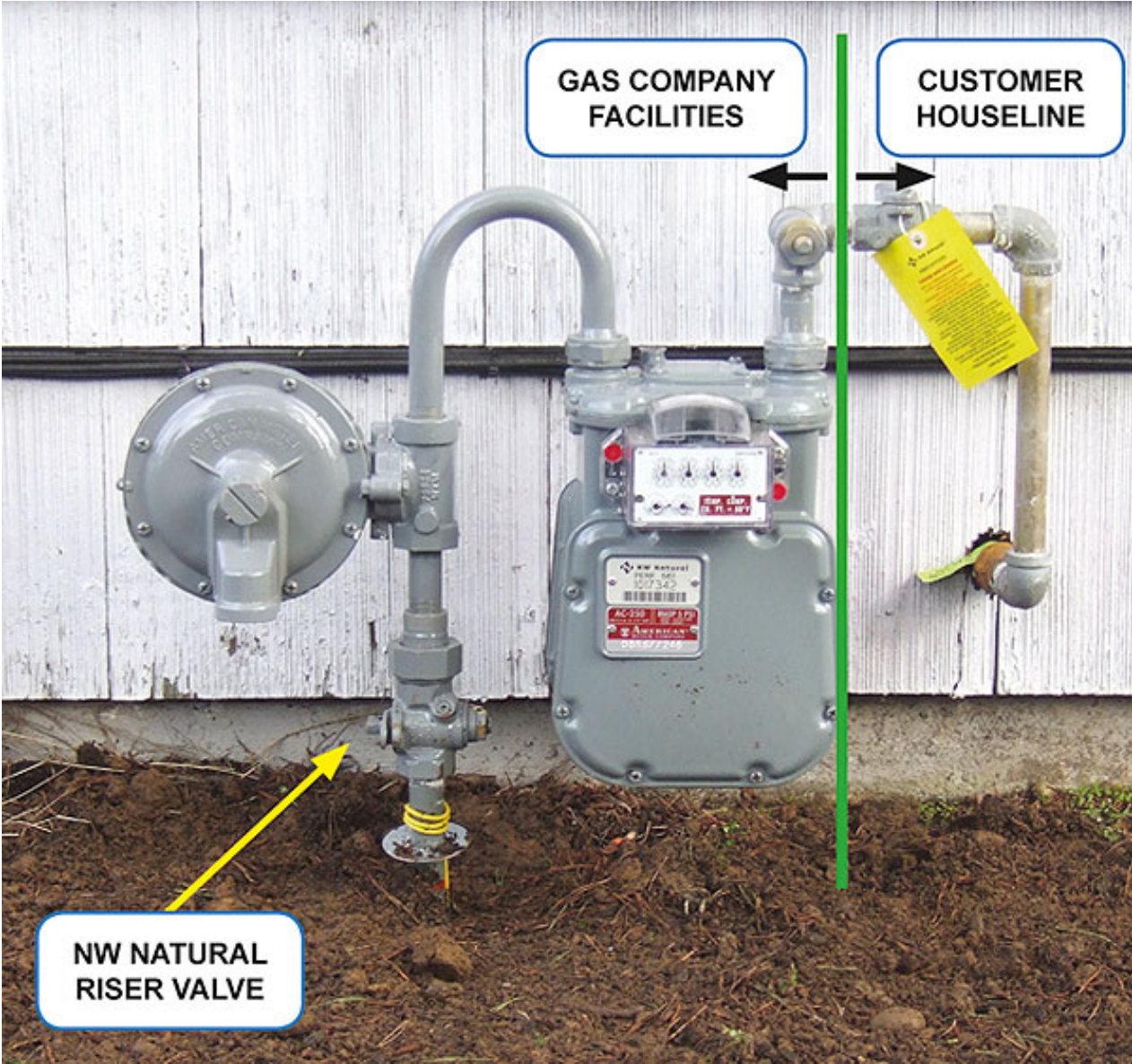


Electric Circuit Tester



Gas Flame : **Yellow** is Bad (Low Oxygen)





**GAS COMPANY
FACILITIES**

**CUSTOMER
HOUSELINE**

**NW NATURAL
RISER VALVE**



Summary

- The three pillars of energy education are **Conservation, Efficiency, and Health and Safety.**



- Energy educators do not have to be experts in these areas. We do need to be aware of the basics, and how to convey that information to benefit our clients.

Thank You for Your Time!