



Welcome Everyone

Energy Efficient Wood Heating

<Burn it Smart>



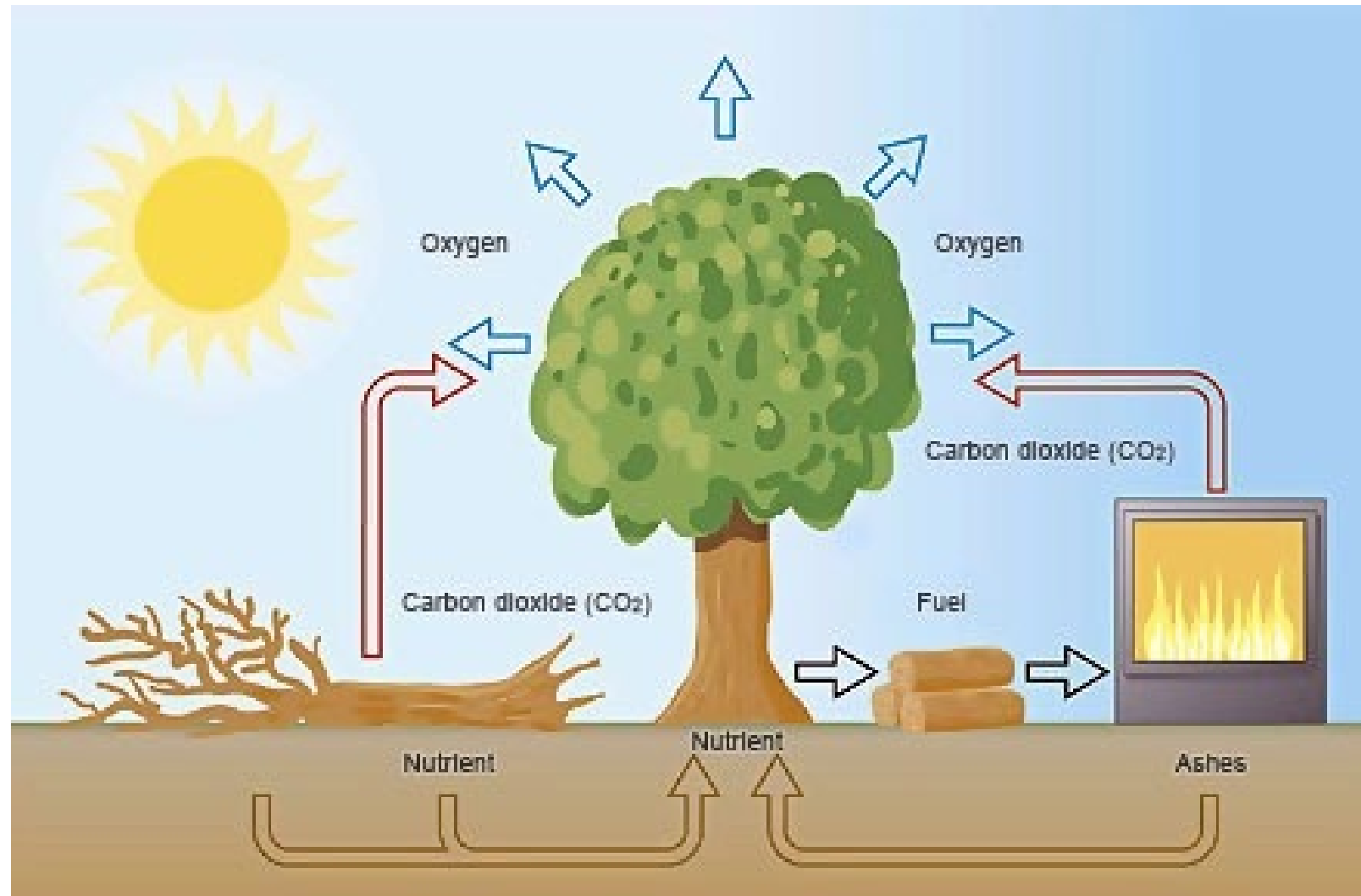
Purpose of this workshop

- To make sure we:
 - burn wood **SAFELY**
 - burn wood more **EFFICIENTLY**
 - keep our family and community **HEALTHY**



Burn It Smart!

Wood is a Renewable Energy



COMPARE OLD WITH NEW:



Overall Efficiency

40 – 50%

60 – 80%

Burn It Smart!

Older Wood Stoves



Burn It Smart!

RSF/first gen airtight Wood Stoves



Burn It Smart!

Particulates

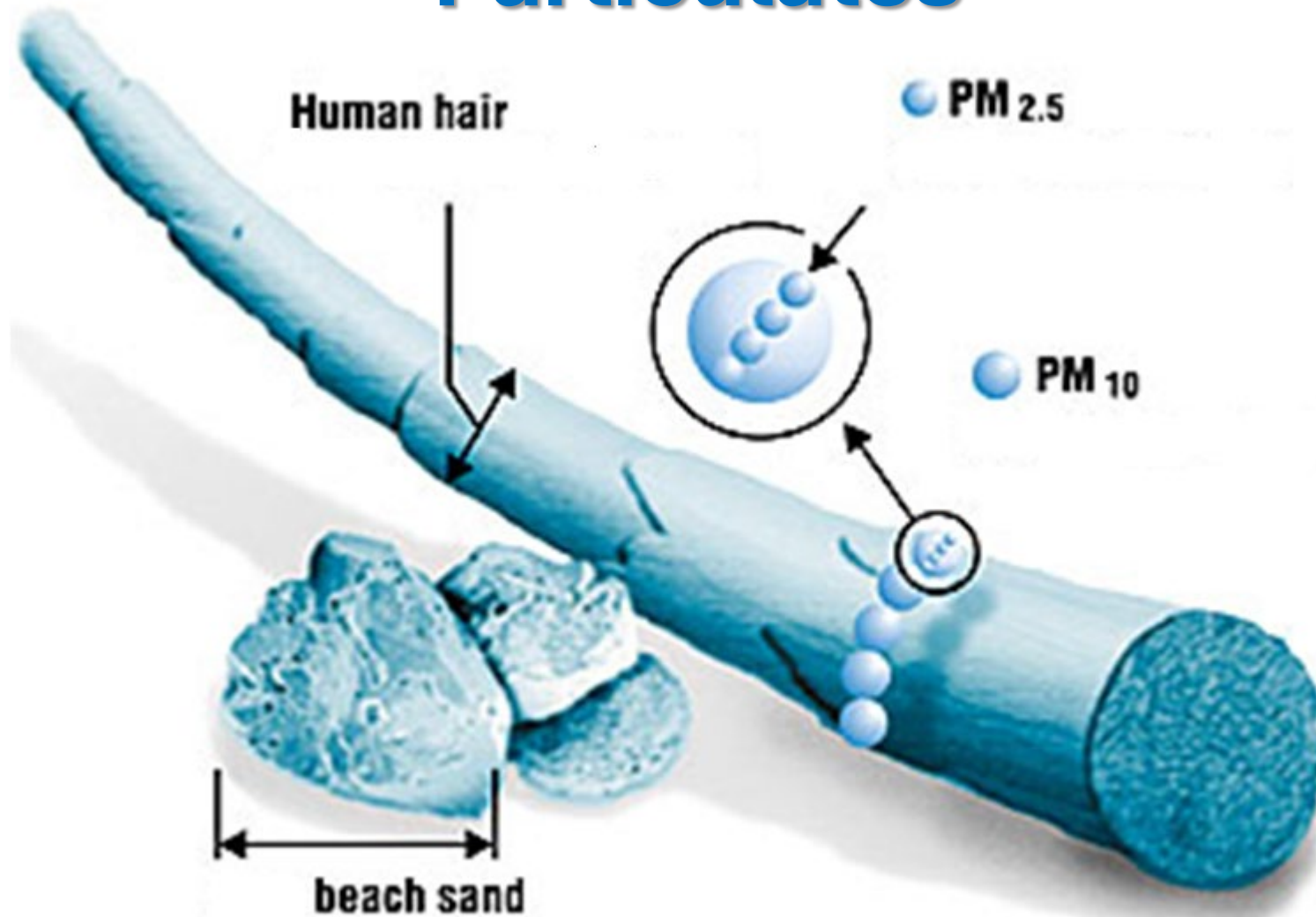
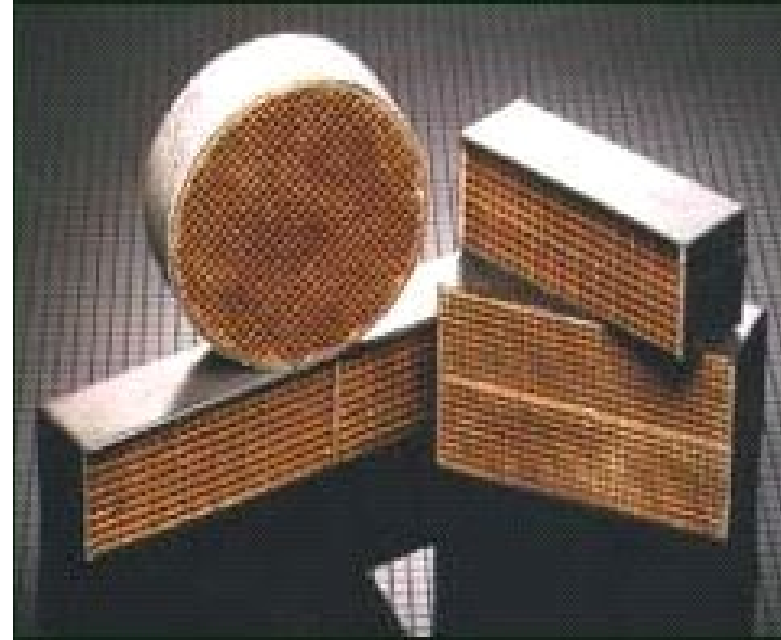
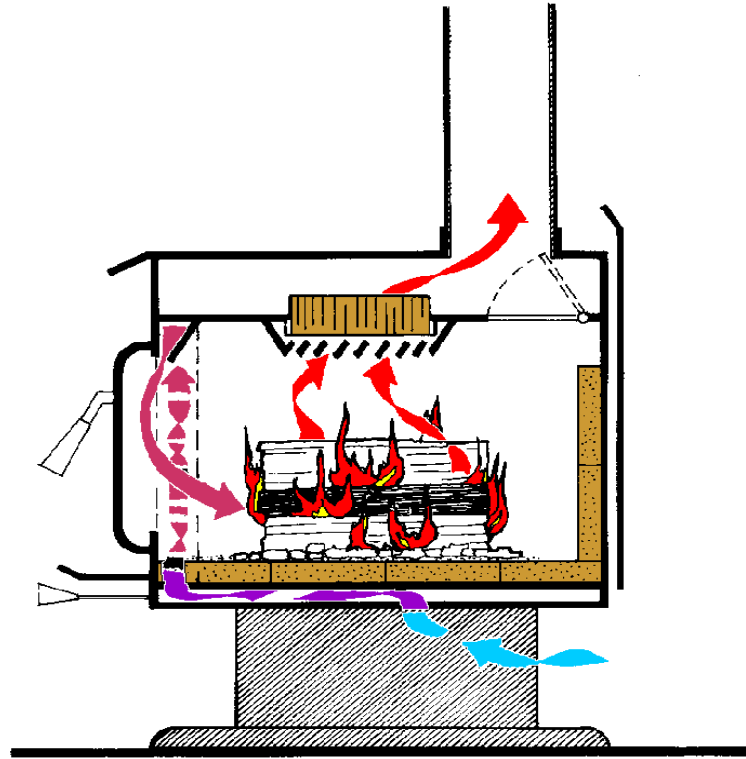


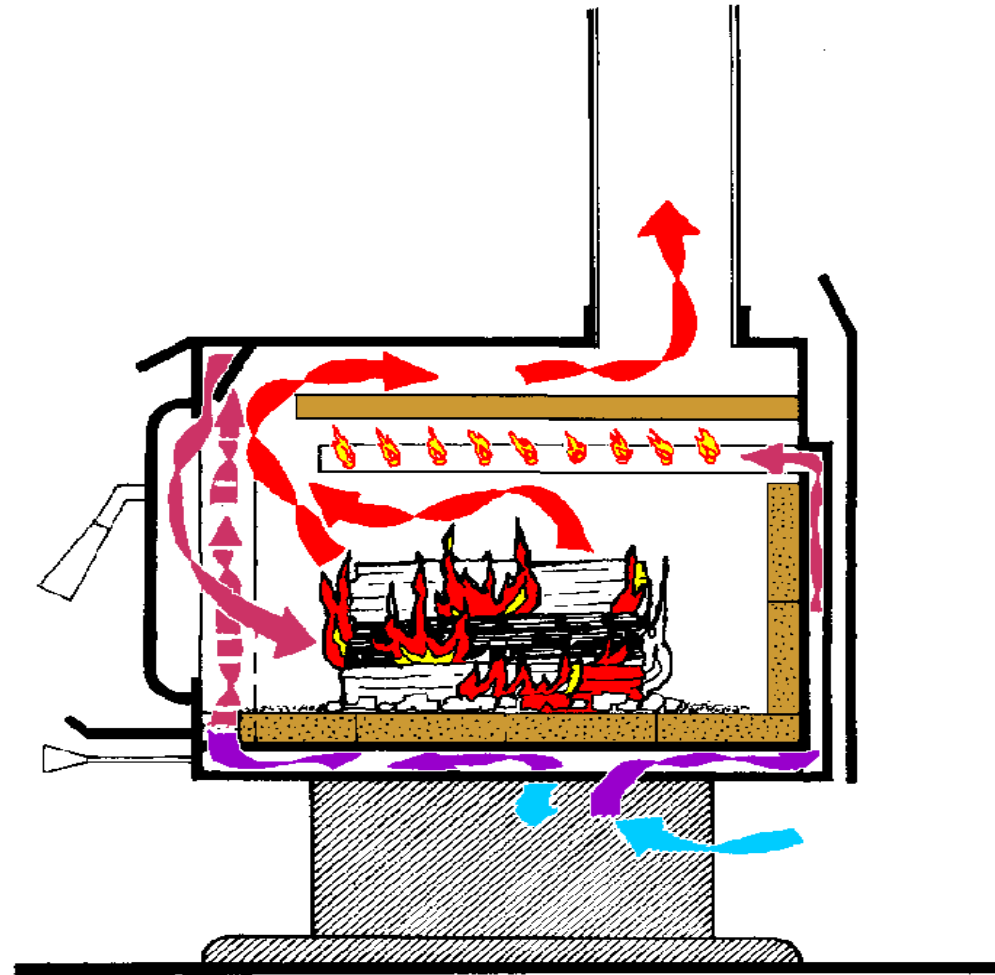
Image courtesy of EPA Office of Research and Development

Inside a Princess Wood Stove



Smoke passes through a catalytic honeycomb that lowers smoke burn temperature

Inside a Reburn Wood Stove





Advanced Wood Burning Technology

Advantages:

- Higher efficiency
- Less smoke pollution
- Greater safety because less creosote is formed
- Burn less wood for more heat



Firewood

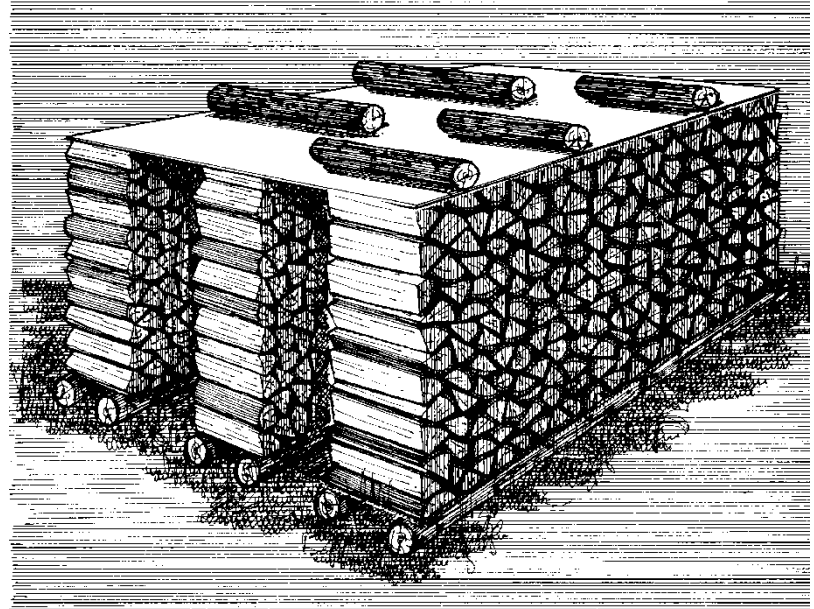
**Good fuel is the
secret to efficiency**

**Only burn dry
(seasoned)
wood.**

And some newspaper or birch bark to start the fire

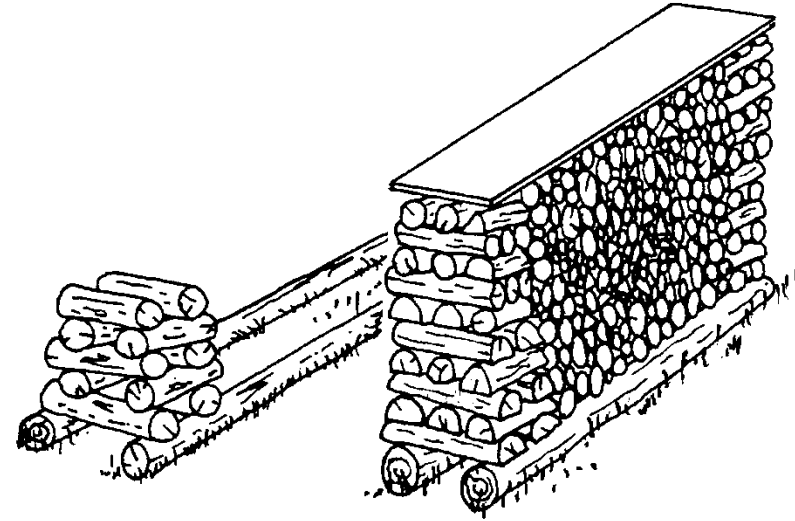
A cord of firewood

- **Full cord** - 4 feet by 4 feet by 8 feet or 128 cu. ft.
- **“face” cord** - 4’ high by 8’ long by 16” wide, or 43 cu. ft.



In early spring, the wood should be:

1. Cut to length
2. Split to a variety of sizes, and
3. Stacked (keep it off the ground)
4. Just the top covered (or not covered)



**To be ready
for burning
in the fall**

How do you know your wood is dry?

- **Cracks**
- **Darker with age**
- **Bang two pieces together**
- **Burn some: hissing means too wet**
- **Weight**



WOOD SHED EXAMPLE





**Save
up to
one-third**

Signs of poor wood burning practice





How to burn without making smoke

1. Burn hot, bright fires - fire each load hot before turning down
2. Before loading, rake your coals forward
3. Burn in cycles - let the space cool a bit before loading
4. Use smaller loads in mild weather

Ways to Control Heat Output

- Load size: small load for mild weather
- Load configuration: loose, crisscross for mild weather
- Load orientation: east-west for mild weather
- Reduce the air supply

Firewood Length & Loading



East-west
loading



North-south
loading

SMOKE FROM GARBAGE





Do Burn

- **Clean, seasoned firewood**
- **Just enough wood shavings, birch paper or plain newspaper to get the fire started**

Don't Burn

- Coated, painted or pressure treated wood
- Salt water driftwood
- Plywood, particle board
- wood with glue on or in it
- Household garbage
- Cardboard and paper products
- Unseasoned wood

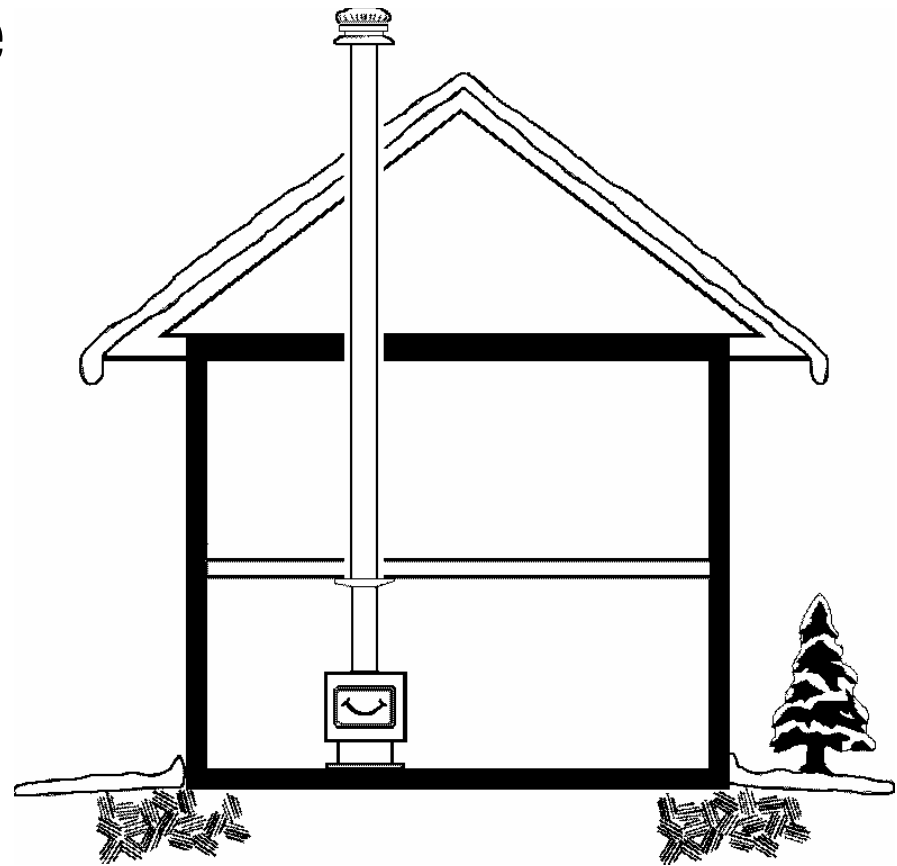


Judge your progress, check your chimney!

- Look up at your chimney
- A little smoke is normal just after loading
- But a fire that is burning properly makes little or no visible smoke from the chimney
- Check the chimney and judge your progress!

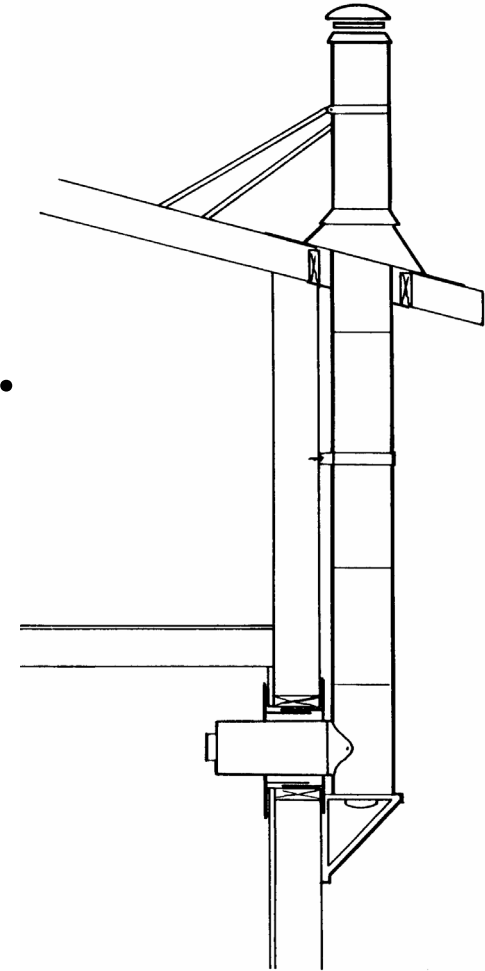
THE IDEAL: STRAIGHT UP!

- Stronger, more stable draft
- Minimal backdraft
- Less creosote formation
- Less maintenance



OUTSIDE CHIMNEYS: CONSIDERATIONS

- Cold air flows down: potential smoke and odours.
- More restriction: at least two 90° changes of direction (code).
- Creosote forms faster.
- Chimney parts cost more.
- Box in exterior pipe (recommended)



Burn It Smart!

CLEAN YOUR CHIMNEY (FLUE)!

**This is
Creosote!**

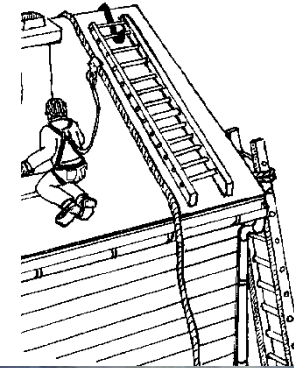


CHIMNEY (FLUE) FIRE CAN BURN YOUR HOUSE DOWN!



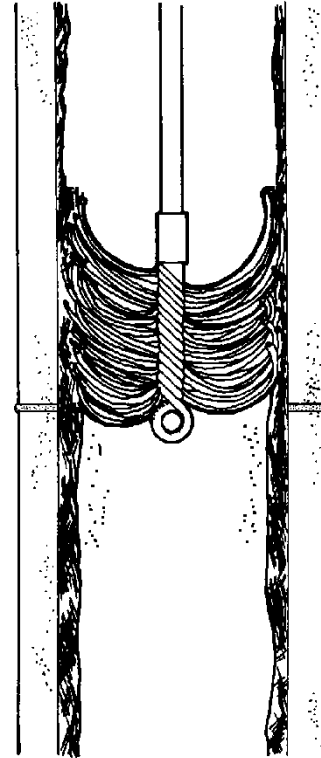
Maintaining your wood heating system

- Every wood burning system should be cleaned and inspected **at least once a year.**



Chimney cleaning

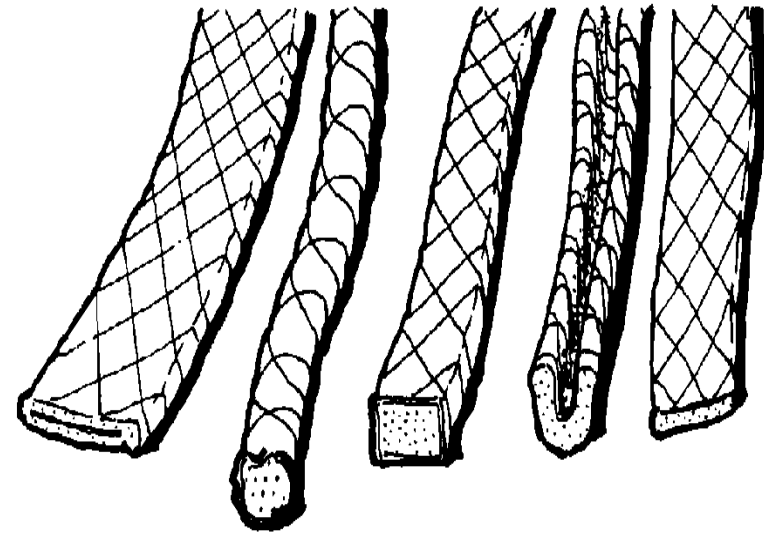
- Some systems form large amounts of creosote quickly
- Others rarely need cleaning
- The only way to know is to check often



Brush removing creosote

Stove maintenance

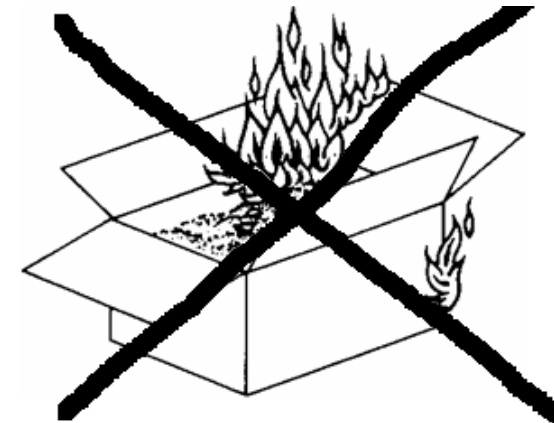
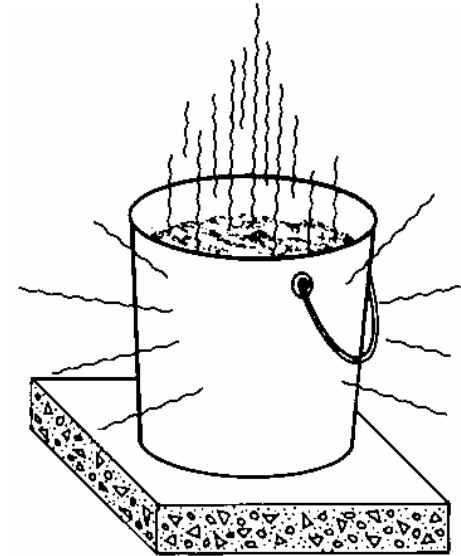
- Check gaskets for looseness and wear
- Wood heating dealers carry a variety of gasket types
- Check door latches and hinges for fit and security



At least once a year

DISPOSE OF ASHES SAFELY

- Ashes can stay hot for days and emit carbon monoxide
- Put ashes in a **steel bucket**
- Store the bucket **outside on concrete**, not on a wooden deck or near firewood

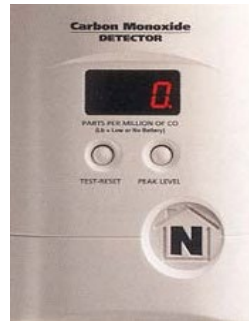


Burn It Smart!

SAFETY



Smoke
Detector



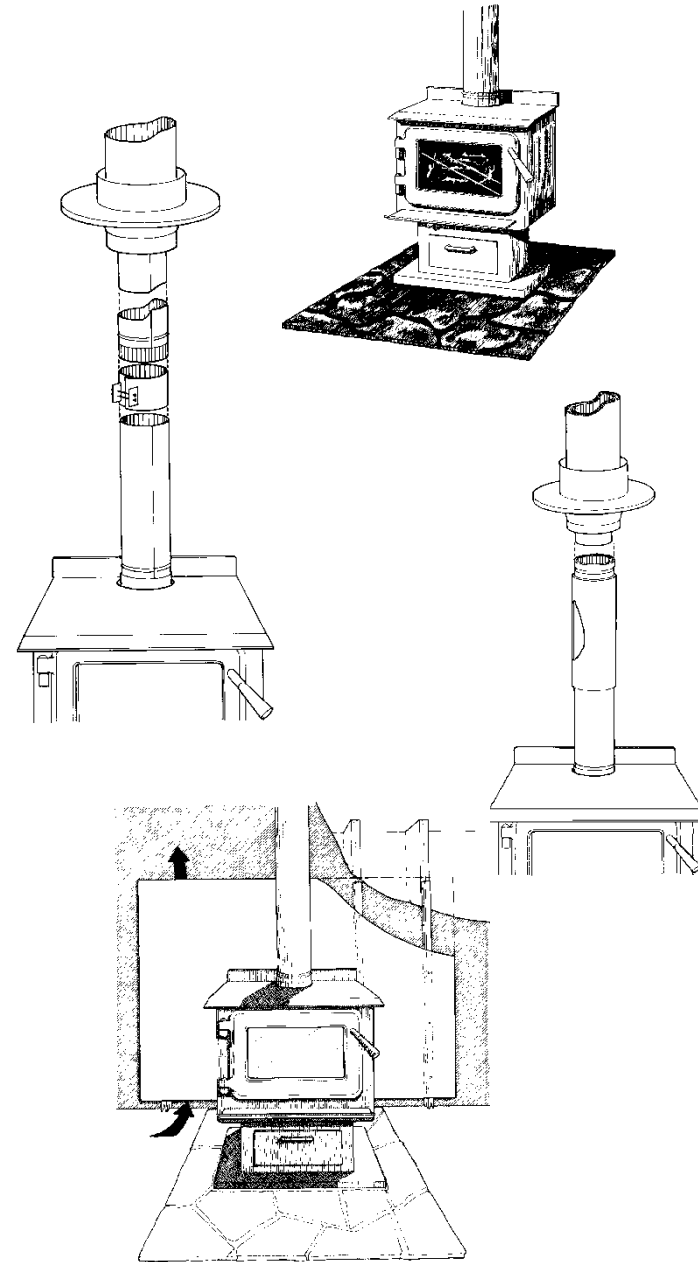
Carbon
Monoxide
Detector



Fire
Extinguisher

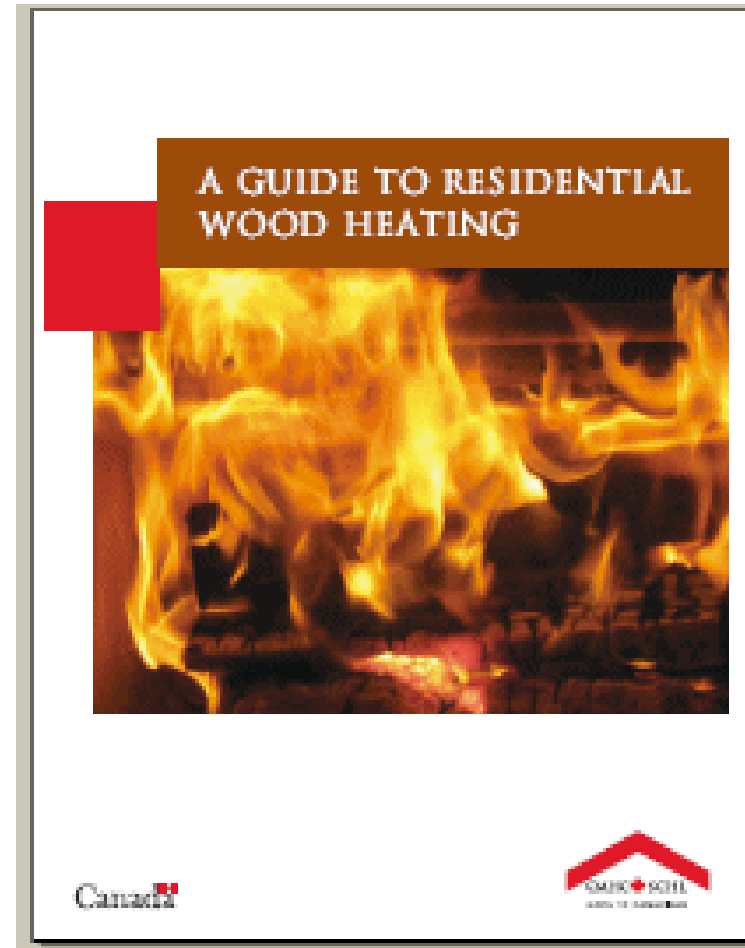
Codes contain reliable rules for:

- Floor pads
- Flue pipe
- Chimney
- Clearances
- Clearance reduction using shields



SAFE WOOD HEAT SYSTEMS

- A Guide to Residential Wood Heating has an overview of wood heat information.





A Burn it Smart Summary:

- **Safer**

- Good system design
- Less smoke, less creosote
- Get advice from a WETT pro



- **More Efficient**

- Smouldering wastes fuel
- Flaming fires release the wood's energy
- Advanced technologies are effective, convenient

- **Healthier**

- Less chance of smoke in your house
- Reduced pollution in your neighbourhood

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Thank you