

BLM Mod.3.5#3: The Effect of Using a Fireplace on Home Heating

Questions

- Can energy be saved by using a fireplace while a forced-air central heating system is operating?
- Is there a difference in energy saving between using a wood fireplace and using a gas fireplace?

Materials

- wood fireplace and gas fireplace (the test should be done using both kinds)
- watch
- Data-Recording Chart

Method

- Leave the thermostat for the home heating system set at a constant temperature.
- Be prepared to record data for at least one hour. Data recorded over a longer period of time will provide more information.
- Ask an adult to verify that the damper in the fireplace is closed at the start of the test.
- With no fire in the fireplace, record the time on your watch each time the heating system turns on and off (in minutes and seconds).
- Ask an adult to open the damper and supervise as you build a fire in the fireplace.
- When the fire is established, record the time on your watch each time the heating system turns on and off (in minutes and seconds).
- Keep a record over the same amount of time in each instance. (If you keep records for 1.5 hours without fire, then you must keep records for 1.5 hours with fire.)

Effect of a Fireplace on Home Heating: Data-Recording Chart

Kind of fireplace _____

| Damper Closed—No Fire in Fireplace | | Damper Open—Fire in Fireplace | |
|--|-----------|--|-----------|
| Start Time | Stop Time | Start Time | Stop Time |
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| | | | |
| Number of times heating system started _____ | | Number of times heating system started _____ | |
| Total time heating system worked _____ | | Total time heating system worked _____ | |

What do you conclude? Is the furnace cycle affected by having a fire in the fireplace?
 For a (kind of fireplace), _____

Why do you think this?