



CARBON MONOXIDE LESSON PLAN

The lessons taught in a classroom often reach well beyond the surrounding walls. Help your students stay safe at home by teaching them about carbon monoxide (CO) safety and prevention. This carbon monoxide safety lesson and the corresponding activities will help teach your students the importance of knowing what to do in the event of excess carbon monoxide in the home. Remember... knowledge is the most precious gift we can give our students.

Objectives

- Understand the dangers of carbon monoxide (CO)
- Understand the importance of having and maintaining CO alarms in the home
- Know how to select the appropriate type of carbon monoxide alarm

Needed materials

- The Silent Killer: Potential Carbon Monoxide Sources in Your Home (from FireFYI.org)
- CO alarm
- Pen or pencil

LESSON PLAN

Introduction

- The carbon monoxide (CO) is the leading cause of accidental poisoning deaths in the United States.
- Odorless, tasteless and colorless, CO is known as "The Silent Killer"
- CO is produced by common household appliances that burn fossil fuels, such as:
 - Gas or oil furnaces
 - Water heaters
 - Clothes dryers
 - Space heaters
 - Gas ovens
 - Wood burning fireplaces
 - Gas fireplaces
 - Other sources: car exhaust, lawnmowers, generators, propane-powered equipment
- Symptoms of CO poisoning often include:
 - Headaches
 - Nausea
 - Fatigue
 - Dizziness
 - Sleepiness
 - Disorientation

Discussion Points

What can you do?

- Install at least one battery-powered CO alarm or AC-powered unit with battery backup on each level of your home and near all sleeping areas.
- If your alarm sounds or you are experiencing symptoms of CO poisoning, get everyone into fresh air and call 911 from a neighbor's home. If no one is experiencing any symptoms, call the fire department or a qualified technician from a neighbor's home to have the problem inspected. If you are unable to leave the home to call for help, open the doors and windows, and turn off all possible sources while you are waiting for assistance to arrive. Under no circumstance should an alarm be ignored!
- Test all CO alarms in your home weekly.
- Replace CO alarms every seven years in order to benefit from the latest technology upgrades.

What type of CO alarm do I need?

- Choose a CO alarm that has the most accurate sensing technology available. CO alarms are designed to alert the homeowner when carbon monoxide levels have begun to accumulate over a period of time, and will alarm before most people would experience any CO poisoning symptoms. The more accurate the alarm, the greater chance a family will respond appropriately to the problem.
- Most commercially available alarms for home installation use biomimetic (also called gel-cell), metal-oxide semiconductor, or electrochemical sensing technologies. Biomimetic alarms mimic the absorption of CO into the blood. They have a battery-sensor module that must be replaced every two or three years. Typically, semiconductor CO alarms require more energy and need to be plugged in or hard-wired. Alarms with electrochemical sensors are more stable during humidity and temperature changes and resist reacting to common household chemicals that may cause false readings.
- Kidde uses fuel-cell electrochemical sensors, and the presence of carbon monoxide causes a chemical reaction that instigates a current flow through the circuit. Alarm times depend on CO exposure, reducing the chance of nuisance alarms. Kidde's CO alarms include Nighthawk technology, which has been proven to be the world's most accurate CO sensing technology based on claims by major manufacturers.
- CO alarms should meet the strict third-party standards set by Underwriters Laboratories (UL) or Canadian Standards Association (CSA). A "UL Listed" or "CSA Listed" label should be printed on the product's packaging.

Instructor's Note

Show students' samples of the different types of CO alarms. For additional product information go to kidde.com.

Independent Learning

Using the handout, "The Silent Killer: Potential CO Sources in your home," review the sources of CO in a typical home.

- Ask students to indicate where CO alarms should be placed based on the design of the home by marking the location with an X.
- Allow students to examine the various types of CO alarms available.
- Demonstrate how to test the CO alarm and then allow each student to repeat the test by pushing the test button.

Additional tips on CO

- Have a licensed professional inspect heating systems and other fuel-burning appliances in your home annually.
- Make sure fuel-burning appliances are installed properly and operate according to the manufacturer's instructions.
- Have all fireplaces cleaned and inspected annually.
- Keep chimneys clear of animal nests, leaves and residue to help ensure proper ventilation.
- Make sure not to block or seal shut the exhaust flues or ducts used by water heaters, ranges and clothes dryers.
- Be careful not to leave your car running in an attached garage or carport.
- Be careful not to use ovens or stoves to heat your home.
- Be careful not to use generators and grills indoors during a power outage.

Additional Activities

Visit www.KnowAboutCO.com or www.kidde.com for more carbon monoxide (CO) safety information.