FIRE PREVENTION

Home fire prevention for Pasco County residents
Be prepared

Fire is the sixth-leading cause of unintentional injury-related death in the United States. Home may be the place people feel safest, but it’s actually the place they’re at greatest risk of injury or death from fire.

According to the National Fire Protection Association, 77 percent of all U.S. fire deaths occur in the home. A civilian dies in a home fire every three hours and 20 minutes.

Do you know what to do if a fire starts in your home? You may have as little as two minutes to safely escape a typical home fire from the time the smoke alarm sounds.

The best way to avoid injury in case of fire is to be prepared. By taking steps to eliminate potential fire hazards in your home and knowing what to do in case a fire does break out, you can help yourself and your family avoid property damage, injury and even death.

Sources: National Fire Protection Association, National Safety Council

Fire in Pasco County

In 2017, Pasco County had: 11 firefighter injuries

323 structure fires

$12.3 million total loss

43 wildfires

211 vehicle fires

In 2017, 200 Florida civilians died from fire-related incidents, and 1,312 civilians were injured.

Forty-one percent of all fires in 2017 occurred in residences. Sixty-five percent of all fire deaths and 78 percent of injuries took place in residential properties.

In 2017, there were 1,319,500 fires reported in the U.S. These fires caused:

- 14,670 civilian injuries
- 3,400 civilian deaths
- $23 billion in property damage

Source: National Fire Protection Association

Fire in Florida

Civilian deaths from fires in Florida in 2017 (by property use)

- Residential 65%
- Industrial 1%
- Public 2%
- Undetermined/None 3%
- Outside/Other 29%

Civilian injuries from fires in Florida in 2017 (by property use)

- Residential 78%
- Industrial 3%
- Public 2%
- Undetermined/None 2%
- Outside/Other 13%

Source: Florida Department of Health, Florida State Fire Marshal

Student activity:
Going beyond the text

Fire safety

Fire safety is essential for everyone to know and understand. The more you and your family know about fire and fire safety, the better your chances of preventing a tragedy are. Research fires and fire safety on the Internet. In addition, look for articles in the *Tampa Bay Times* that pertain to fire and fire safety. Write a letter to the editor about the importance of what you have learned. Be sure to include specific examples from your sources to support your ideas. Once you are finished editing your letter, share it with your family and classmates.
Make your home fire escape plan

Everyone needs to have a family fire escape plan. It is important to have an escape plan before a fire occurs, so everyone is prepared and ready to act.

- Walk through your home and identify all possible exits and escape routes. Note two ways out of each room. Draw a floor plan of your home that shows all exits and smoke alarms.
- Make sure that all escape routes are clear of furniture and obstructions.
- Make sure that all doors and windows can be opened easily by all household members.
- If your home has two floors, every household member (including children) must be able to escape from the second floor rooms. Escape ladders can be placed in or near windows to provide an additional escape route.
- Choose an outside meeting place a safe distance in front of your home where everyone can meet after they’ve escaped.
- If anyone living in your household has decreased mobility, hearing or eyesight, see the tips on Pages 10-11.
- Talk about your escape plan with everyone in your home.
- Practice your home fire escape plan twice a year. Practice using different routes to get out. Practice during the day and at night.

Source: National Fire Protection Association

In 2017, U.S. fire departments responded to:

- A fire every 24 seconds
- A structure fire every 63 seconds
- A home fire every 88 seconds
- A highway vehicle fire every 188 seconds

Source: National Fire Protection Association

Fire-related injuries

Fire-related injuries are caused from smoke, fire or flames, and can include burns, poisonings, smoke inhalation and other injuries.

Source: Florida Department of Health
Cooking is the leading cause of home fires and home fire injuries and the second-leading cause of home fire deaths. Between 2011 and 2015, fire departments responded to an average of 466 home cooking fires per day in the U.S. Unattended cooking was by far the leading contributing factor to these fires.

- Cooking equipment causes almost half of all home fires.
- Two-thirds of home cooking fires start with the ignition of food or other cooking materials.
- Ranges or cooktops account for the majority of home cooking fire incidents.
- Unattended equipment is a factor in one-third of reported home cooking fires and almost half of the associated deaths.

 Sources: National Fire Protection Association

Cooking DOS and DON’TS

- DON’T use the stove if you are sleepy or have used alcohol or drugs.
- DO wear short sleeves or roll up sleeves.
- DO stay in the kitchen while you are frying, boiling, grilling or broiling food.
- DO turn pot handles toward the back of the stove.
- DO turn off the stove if you leave the kitchen for even a short period of time.
- DO remain in the home while simmering, baking or roasting food and check it regularly.
- DO use a timer to remind you that you are cooking.
- DO keep anything that can catch fire away from your stovetop (oven mitts, wooden utensils, food packaging, dish towels, etc.).

 Sources: National Fire Protection Association, U.S. Fire Administration

Frying safety

- Always cook with a lid beside the pan.
- Always stay in the kitchen when frying food on the stovetop.
- Heat oil slowly to the temperature needed.

 Sources: National Fire Protection Association

What to do if you have a small cooking fire:

- Never throw water or use a fire extinguisher on a cooking fire.
- For an oven fire, turn off the heat and keep the door closed.
- For a stovetop fire, smother the flames by sliding a lid over the pan and turning off the burner. Leave the pan covered until it is completely cooled.
- For a microwave fire, leave the door closed, turn the microwave off and unplug it from the wall.

 Sources: National Fire Protection Association

If the fire does not go out or you have any doubt about fighting it:

- Get everyone out of the home.
- Close the door behind you to help contain the fire.
- Call 9-1-1 from outside the home.

 Sources: National Fire Protection Association
Grilling safety

Between 2011 and 2015, fire departments responded to an annual average of 9,600 home fires involving grills, hibachis or barbecues per year, including 4,100 structure fires.

Here are some tips to enjoy your grill safely:

- Grills and smokers should only be used outdoors.
- Place grills away from your home and deck railings and out from under eaves and overhanging tree branches.
- Keep children and pets at least 3 feet away from the grill area.
- Never leave your grill unattended.
- Remove grease or fat buildup from grills and trays before using.
- Always make sure your gas grill lid is open before lighting it.

Charcoal grill safety tips

- If you use starter fluid, use only charcoal starter fluid.
- Never add charcoal fluid or any other flammable liquids to the fire.
- Keep charcoal fluid out of the reach of children and away from heat sources.
- When you are finished grilling, let the coals cool completely before disposing of them in a metal container.

Propane grill tips

- Always check the gas tank hose for leaks before using it for the first time each year.
- To check for leaks, apply a soap-and-water solution to the hose. A propane leak will release bubbles.
- If your grill has a gas leak, by smell or the soapy bubble test, and there is no flame, turn off both the gas tank and the grill.
- If the leak stops, get the grill serviced by a professional before using it again.
- If the leak does not stop, call the fire department.
- If you smell gas while cooking, immediately get away from the grill and call the fire department. Do not move the grill.
- If the flame goes out, turn the grill and gas off and wait at least five minutes before relighting it.

Source: National Fire Protection Association

Student activity: Going beyond the text

Fire safety

Cooking is the leading cause of home fires and home fire injuries and the second-leading cause of home fire deaths. That is a scary thought. How can people get the message out to others about the information on these pages? A media campaign can be used when you want to get a message out about a theme, a product or an event, such as fire safety. Working together with your family members, other students, your friends or peers, come up with a plan to get your school, neighborhood and family to focus on the topic of fire safety, especially in the home. Look at the ads in the Tampa Bay Times. Think about the dynamics of the ads. Think about ways to draw people's attention to an ad and its message. Next, design an ad for the print and digital editions of the Times and tampabay.com that focuses on fire safety for people of all ages.

How is the ad on the print edition going to be different than the web version of the ad? Share your ideas with your family, friends and classmates.
Smoke alarms save lives

Fire and smoke are fast. Working smoke alarms give you early warning so you can get outside to safety quickly.

- **Install smoke alarms:**
  - inside each bedroom.
  - outside each sleeping area.
  - on every level of the home.
  - on the ceiling or high on the wall.
  - away from bathrooms and the kitchen.
  - at least 10 feet away from the stove.

- Install interconnected smoke alarms when possible (when one smoke alarm sounds, they all sound).

- Test your smoke alarms by pressing the test button at least once a month.

- Clean your smoke alarms according to the manufacturer’s instructions.

- Replace smoke alarm batteries once a year or when they make a “chirping” sound.

- Replace all smoke alarms every 10 years.

- When a smoke alarm sounds, get outside and stay outside. Call 9-1-1 from a cellphone or a neighbor’s phone.

Sources: National Fire Protection Association, U.S. Consumer Product Safety Commission

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**How to choose a smoke alarm**

- Look for the UL label on the packaging to make sure the smoke alarm meets the Underwriters Laboratories Standard.

- **Choose a dual-sensor smoke detector.** These detectors combine ionization and photoelectric technology to detect both flaming and smoldering fires.

- When possible, choose smoke alarms that can be interconnected (when one smoke alarm sounds, they all sound).

- If anyone with hearing loss lives in your home, choose smoke alarms that flash a light in addition to sounding an audible alarm.

Sources: Consumer Reports, National Fire Protection Association, U.S. Consumer Product Safety Commission

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**Types of smoke alarms**

- **Ionization smoke alarms** respond quickly to flaming fires. These smoke alarms are triggered when smoke disrupts the flow of electricity between two electrodes inside the alarm.

- **Photoelectric smoke alarms** respond sooner to smoldering fires. These smoke alarms are triggered when smoke interrupts a light beam inside the alarm.

- **Dual-sensor smoke alarms** combine ionization and photoelectric technology to detect both types of fires.

Sources: National Fire Protection Association, U.S. Consumer Product Safety Commission

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38% of fire deaths happen in homes with no smoke alarms

21% of fire deaths happen in homes with nonworking smoke alarms

70% of nonworking smoke alarms did not sound because they had dead, missing or disconnected batteries

Source: National Fire Protection Association

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38%

21%

70%

Source: National Fire Protection Association
Smoke alarms for people with hearing loss

Test smoke alarms to make sure everyone in your home can hear them, even when they are asleep. Smoke alarms and alert devices designed for people who are deaf or hard of hearing are widely available. If anyone in your household is deaf or hard of hearing, consider:
- Smoke alarms with high-intensity strobe lights.
- Alert devices that produce loud, low-frequency sounds.
- Pillow or bed shakers activated by the sound of the smoke alarm.

If possible, a household member and a backup person should be assigned to help awaken those with hearing loss during fire drills and emergencies.

Smoke alarms and alert devices designed for people who are deaf or hard of hearing can be purchased through home improvement store websites or by searching the Internet for "strobe-light smoke alarms." Always choose devices that have the UL label on the packaging to make sure the smoke alarm meets the Underwriters Laboratories Standard.

Sources: Electrical Safety Foundation International, National Fire Protection Association

Watch a video about home smoke alarm basics: https://www.youtube.com/watch?time_continue=4&v=4LQ6uhXAzvk.

Student activity: Going beyond the text
Smoke and vapor

Webster’s dictionary defines smoke as “the visible vapor and gases given off by a burning or smoldering substance, especially the gray, brown or blackish mixture of gases and suspended carbon particles resulting from the combustion of wood, peat, coal or other organic matter.”

All smoke contains carbon monoxide, carbon dioxide and particulate matter, otherwise known as soot. Smoke also can contain chemicals, which can be deadly when inhaled by people or animals. That is why smoke alarms are so important. Do some research about the components that make up smoke on the Internet. Find out what particles are unburned during a fire and what toxic gases are released during a fire.

Next, look through the Tampa Bay Times for everyday items you have in your house. Make a list of the items that may produce deadly gases during a house fire.
Heating is the second-leading cause of all residential building fires, after cooking. When the weather cools down, many Floridians turn to space heaters to stay warm.

Space heaters may keep us warm, but they can be very dangerous if not used correctly: Forty-three percent of home heating fires and 85 percent of home heating fire deaths involved space heaters.

Sources: National Fire Protection Association, U.S. Fire Administration

U.S. fire departments responded to 54,030 home heating fires between 2011 and 2015. These fires caused:

480 civilian deaths
$1.1 billion in direct property damage
1,470 civilian injuries

Source: National Fire Protection Association

How to choose a space heater

● Look for the UL label on the packaging to make sure the heater meets the Underwriters Laboratories Standard.
● Choose a heater with a thermostat and overheat protection.
● Choose a heater with an auto shut-off to turn the heater off if it tips over.


Call a qualified electrician right away if you have:

● frequent problems with blowing fuses or tripping circuit breakers.
● a tingling feeling when you touch an electrical appliance, outlet or switch.
● discolored or warm wall outlets or switches.
● cracking, sizzling or buzzing from outlets.
● a burning or rubbery smell coming from an appliance, outlet or switch.
● flickering or dimming lights.
● sparks from an outlet.

Sources: Electrical Safety Foundation International, National Fire Protection Association
**Space heater DOS and DON’TS**

**DO**
- keep all sides of space heaters at least 3 feet away from anything that can burn.
- place space heaters on a solid, flat surface where they will not be knocked over.
- keep space heaters out of the way of foot traffic.
- keep children and pets away from space heaters.
- plug electric space heaters directly into a wall outlet.
- keep electric space heaters away from water.
- turn off and unplug space heaters when you leave the room or go to bed.

**DON’T**
- place space heaters on cabinets, tables, furniture or carpet.
- place space heaters in high-traffic areas or doorways.
- plug electric space heaters into an extension cord or power strip.
- run a space heater’s cord under rugs or carpeting.
- touch an electric space heater if you are wet.
- leave space heaters on while they’re unattended or while you are sleeping.
- refuel kerosene space heaters inside. Always refuel your cooled heater outside.
- plug another electrical device or an extension cord into the same outlet as a heater.
- use a space heater if the plug, cord, wall outlet or faceplate is hot.


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**Electrical safety tips**

**Home**
- Always have electrical work done by a qualified electrician.
- When buying or remodeling a home, have it inspected by a qualified home inspector.
- Consider having arc-fault circuit interrupters (AFCIs) installed in your home. AFCIs shut off electricity when a dangerous condition occurs.
- Have ground-fault circuit interrupters (GFCIs) installed in outlets in bathrooms, kitchens, garages and basements and in all outdoor outlets.
- A heavy reliance on extension cords indicates that you have too few outlets to address your needs. Have additional outlets installed where you need them.

**Appliances**
- Only use one heat-producing appliance (such as a coffee maker, toaster or space heater) plugged into an outlet at a time.
- Major appliances (such as refrigerators, dryers, washers, stoves, air conditioners and microwave ovens) should be plugged directly into a wall outlet. Do not use extension cords or power strips.
- Heaters and fans should be plugged directly into a wall outlet. Do not use extension cords or power strips.
- Always use the appropriate watt bulb for any lighting fixture. Look for a sticker that indicates the right number of watts.

**Cords**
- Never run electrical cords across doorways or under carpets.
- Inspect cords for damage before use. Do not use if you find cracked or frayed sockets, loose or bare wires, or loose connections.
- Buy extension cords that have the UL label on the packaging to make sure they meet the Underwriters Laboratories Standard.
- Don’t plug extension cords into one another.
- Make sure extension cords are rated for their intended use (indoor or outdoor) and meet or exceed the power needs of the device being used.
- Keep outdoor extension cords clear of standing water.
- Do not nail or staple extension cords to walls or baseboards.
- Do not run extension cords through walls, doorways, ceilings or floors.

*Sources: Electrical Safety Foundation International, National Fire Protection Association*

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**Home electrical safety**

According to the National Fire Protection Association, U.S. fire departments responded to an annual average of 45,210 home structure fires involving electrical failure or malfunction between 2010 and 2014.

These fires caused an average of 420 civilian deaths, 1,370 civilian injuries and $1.4 billion in direct property damage annually.

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**Making a difference**

From fire extinguisher developers to 9-1-1 operators to law enforcement officers, firefighters and paramedics, there are a lot of different types of jobs that can make a difference in people’s lives. Read through the pages of this Newspaper in Education supplement and review the pages of the National Fire Protection Association website, nfpa.org. With your family and classmates, make a list of all the different jobs you find. Choose five of these jobs and write a few sentences about how these people make a difference in their community. Include a list of the skills these people would need to do their jobs. Next, find an article in the *Tampa Bay Times* that depicts someone making a difference in the community. Write down the main points of the article. Share what you have learned with your family members and class.

*tampabay.com/nie*
According to the National Fire Protection Association, people over the age of 65 are twice as likely to be killed or injured by fires compared to the population at large. By age 75, that risk increases to three times that of the general population, and by age 85, the risk increases to four times.

Fire escape planning for older adults: Make an escape plan around your abilities

Everyone needs to have a family fire escape plan. It is important to have an escape plan before a fire occurs, so everyone is prepared and ready to act. See Pages 12-13 for more fire escape planning tips.

As we age, fire escape plans should be updated to address changes such as decreased mobility, hearing or eyesight.

Plan:
- Know two ways out of every room, in case one exit is blocked or dangerous to use. Remember that windows can serve as an exit.
- Consider whether older adults should sleep in a room on the ground floor to make escape easier.
- When possible, assign a responsible household member and a backup person to help people who will need assistance to escape.

- Discuss your fire escape plan with family and neighbors. Contact your building manager or fire department to discuss your plan if you need extra help escaping. Ask if your fire department keeps a directory of people who may need extra help.

Prepare:
- Make sure that exterior doors and windows can be opened easily by all household members.
- Ensure that doorways, hallways and stairs are clear of furniture and other items that could be an obstruction or tripping hazard during an emergency.
- Keep eyeglasses, keys and hearing aids within reach next to your bed while sleeping.
- Keep a phone near the bed in case of an emergency.
- If you use a cane, walker, wheelchair or scooter, make sure that you can get to them easily and quickly.
- Make sure that walkers or wheelchairs fit through the planned exit doorways. Install exit ramps and widen doorways if necessary.
- Install battery-powered nightlights to illuminate paths of exit, or have flashlights readily available and accessible.

Practice:
- Practice your home fire escape plan at least twice a year.
- Review and revise your fire escape plan as necessary to accommodate new health or mobility concerns.

Sources: Electrical Safety Foundation International, National Fire Protection Association, U.S. Fire Administration
If you smoke, **be safe**

Smoking materials are the leading cause of fire deaths in the U.S. According to the U.S. Fire Administration, smoking caused 14 percent of fatal residential building fires in 2016.

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**Smoking material fires are preventable:**
- If you smoke, smoke outside. Most deaths result from fires that started in living rooms, family rooms or bedrooms.
- Keep cigarettes, lighters, matches and other smoking materials up high out of the reach of children in a locked cabinet.
- Use a deep, sturdy ashtray. Place it away from anything that can burn.
- Do not discard cigarettes in vegetation such as mulch, potted plants or landscaping, peat moss, dried grasses, leaves or other things that could ignite easily.
- Before you throw away butts and ashes, make sure they are out. Dousing them in water or sand is the best way to do that.

**Each year, smoking causes:**

- 7,600 fires in residential buildings
- An average of 365 deaths and 925 injuries
- $326 million in property loss each year

**Smoking and medical oxygen**

Never smoke, and never allow anyone else to smoke, where medical oxygen is used.
- Medical oxygen can cause materials to ignite more easily and make fires burn faster and hotter. Even if the oxygen is turned off, it can still catch on fire.
- Never smoke in a home where oxygen is used.
- Post "no smoking" signs inside and outside of the home to remind residents and guests not to smoke.
- Never use an open flame when oxygen is in use.

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**E-cigarettes**

According to the U.S. Fire Administration, there were 195 separate incidents of explosion and fire involving an electronic cigarette between January 2009 and December 2016, resulting in 133 acute injuries.
- Fires have occurred while e-cigarettes were being used, while in a pocket and while the battery was being charged.
- Use e-cigarettes with caution.
- Always charge e-cigarette batteries according to the manufacturer's instructions.
- Never leave charging e-cigarettes unattended.

Sources: National Fire Protection Association, U.S. Fire Administration

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**Student activity:**

Going beyond the text

**Planning ahead**

No matter how old you are or how knowledgeable you are, it is important to have a plan, especially for emergencies. When it comes to fire safety, having a plan is essential. Just as your school or office has planned fire drills, your family should, also. Look through today’s Tampa Bay Times for two pictures of two different types of homes. Carefully review these pictures, and write a fully developed paragraph showing an escape plan for each home. Be sure to explain why the escape plan would be difficult or easy for people in the house. Based on the information and the photos, come up with a hypothetical escape plan for each home. Next, come up with an emergency escape plan for your residence. Do you live in a house or an apartment? Are there multiple stories? What happens if you cannot use the elevators or main door? Share the plan with every member of your family.

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Source: National Fire Protection Association, U.S. Fire Administration
### Home fire safety checklist

#### Kitchen safety

Do you leave the kitchen for even a short period of time while cooking?
- [ ] Yes    [ ] No

Stay in the kitchen when you are frying, grilling or broiling food. If you leave the kitchen for even a short period of time, turn off the stove.

Do you use a timer when cooking?
- [ ] Yes    [ ] No

If you are simmering, baking, roasting or boiling food, check it regularly. Using a timer will help remind you that you are cooking.

Are towels, dishcloths, curtains or other flammable items kept away from the stovetop?
- [ ] Yes    [ ] No

Keep flammable materials and objects away from hot surfaces or appliances.

#### Smoke alarms

Do you have smoke alarms in all the right locations?
- [ ] Yes    [ ] No

Install smoke alarms on each level of the home, inside each bedroom and outside each sleeping area.

Can everyone in your home hear the smoke alarms?
- [ ] Yes    [ ] No

Install smoke alarms or alert devices that are specially designed for people who are hard of hearing or deaf.

Do you test them once a month?
- [ ] Yes    [ ] No

Test smoke alarms once a month by pressing the TEST button.

Have you changed the batteries this year?
- [ ] Yes    [ ] No

Replace batteries at least once a year, or sooner if an alarm begins to “chirp.”

Do you know how old the alarms are?
- [ ] Yes    [ ] No

Replace alarms at least every 10 years.

#### Space heater safety

Are space heaters located at least 3 feet away from anything that can burn?
- [ ] Yes    [ ] No

Keep all combustible material, such as curtains, bedding and newspapers, at least 3 feet from heating equipment.

Are space heaters placed in a safe location?
- [ ] Yes    [ ] No

Space heaters should be placed on a flat, level surface that is not in a doorway or high-traffic area, but never on top of furniture.

#### Home electrical safety

Are any switches or outlets discolored or warm to the touch?
- [ ] Yes    [ ] No

Stop using these switches and outlets and have them promptly checked by a licensed electrician.

Do any switches or outlets make crackling, buzzing or sizzling sounds?
- [ ] Yes    [ ] No

Stop using these switches and outlets and have them promptly checked by a licensed electrician.

Is any cord cracked, frayed or otherwise damaged?
- [ ] Yes    [ ] No

Do not use damaged cords. Replace the cord or equipment.

Are any cords located under carpets or rugs?
- [ ] Yes    [ ] No

Move cords or carpets so the cords are not covered.

#### Fire escape planning

Do you have a home fire escape plan that shows two ways out of every room?
- [ ] Yes    [ ] No

Draw a floor plan of your house and mark two ways out of each room.

Do you practice your fire escape plan at least two times per year?
- [ ] Yes    [ ] No

Everyone living in the household should practice your fire escape plan at least two times per year.

Does everyone living in the household know where the safe meeting place is outside the home?
- [ ] Yes    [ ] No

Everyone living in the household should practice meeting at the designated safe place at least two times per year.

Sources: Electrical Safety Foundation International, U.S. Fire Administration
Important phone numbers

EMERGENCY: 911

Doctor:

Family member:

Neighbor:

Other emergency contact:

My contact information

My name:

My address:

My phone number:

Source: Electrical Safety Foundation International

Even the most basic information can be hard to recall during an emergency. Fill out this emergency information sheet and post it on your refrigerator or in another easily visible location near your telephone so that you can easily provide this information to 9-1-1.

Student activity: Going beyond the text

Newspaper scavenger hunt

Look for the words on this list in the Tampa Bay Times. Find as many words as possible. Next, define the words you find and create a word search, definition or matching game out of these words for your family.

alarm | firefighter
--- | ---
carbon monoxide | flames
civilian | heat
combustible | injury
dangerous | prevention
emergency | residential
explosive | smoldering
extinguisher | sprinkler

source: Electrical Safety Foundation International
The first fire department in Pasco County was established in 1922 in New Port Richey. The all-volunteer department had one fire truck, housed in a corrugated-iron fire hall on Main Street. The New Port Richey Press reported, “The new fire engine was housed in its new home the other day, and it certainly looks a useful instrument. It is fully equipped with chemical extinguishers, fire ladders, axes, spades and other paraphernalia generally found useful at a conflagration.”

Today, Pasco County is served by four fire agencies that provide comprehensive fire prevention and protection services: Pasco County Fire Rescue, the New Port Richey Fire and Emergency Services Department, the Port Richey Fire Department and Zephyrhills Fire Rescue.

Source: Fivay.org
The science of fire

Fire is a chemical reaction between different chemical elements, each of which contains stored energy. In order for fire to happen, you must have the right kind of mixture to create the chemical reaction. For a fire to occur, you must have heat, fuel and oxygen. Remove any one of these elements and the fire will not happen. Fire is a visible, tangible side effect of matter changing form. Fire is one part of a chemical reaction which involves electrons. According to Albert Einstein’s law of conservation of energy, energy is neither created nor destroyed; it can only change in form. This is basically what happens when a fire occurs. Learn more about the science of fire on the How Stuff Works website. Go to science.howstuffworks.com/environmental/earth/geophysics/fire. Create an infographic showing what fire is, based on the information you have learned. Share what you have learned with your class.

Next, look for images in the Tampa Bay Times – cartoons, photos, ads, graphics – that represent the elements of heat, fuel and oxygen. Cut out these images of these elements and create a collage.
FM Global

This publication was funded by a grant from FM Global’s Fire Prevention Grant Program.

Established nearly 200 years ago, FM Global is a mutual insurance company whose capital, scientific research capability and engineering expertise are solely dedicated to property risk management and the resilience of its client-owners. These owners, who share the belief that the majority of property loss is preventable, represent many of the world’s largest organizations, including one of every three Fortune 500 companies. They work with FM Global to better understand the hazards that can impact their business continuity in order to make cost-effective risk management decisions, combining property loss prevention with insurance protection.

FM Global offers financial support to organizations working to combat fire through their Fire Prevention Grant Program. Fire departments and brigades, as well as national, state, regional, local and community organizations, can apply for funding to support a wide array of fire prevention, preparedness and control efforts, including pre-incident planning, fire prevention education/training and arson prevention/fire investigation. Over the past 40 years, FM Global has contributed millions of dollars in fire prevention grants to fire service organizations around the globe.

For more information about FM Global, visit fmglobal.com. To learn more about FM Global’s Fire Prevention Grant Program, visit fmglobal.com/fireservice.

Educators

Share 100 words about how you used this resource in your classroom for a chance to win a $15 gift card! Visit tampabay.com/nie for details and to enter.

Newspaper in Education

The Tampa Bay Times Newspaper in Education program (NIE) is a cooperative effort between schools and the Times Publishing Co. to encourage the use of newspapers in print and electronic form as educational resources—a “living textbook.” Our educational resources fall into the category of informational text, a type of nonfiction text. The primary purpose of informational text is to convey information about the natural or social world.

NIE serves educators, students and families by providing schools with class sets of the Pulitzer Prize-winning Tampa Bay Times plus award-winning original educational publications, teacher guides, lesson plans, educator workshops and many more resources—all at no cost to schools, teachers or families. In 2017-2018, NIE provided more than 1.5 million print copies and 10 million digital editions of the Times to area classrooms free of charge thanks to our generous subscribers and individual, corporate and foundation sponsors. NIE teaching materials cover a variety of subjects and are aligned to the Florida Standards.

For more information about NIE, visit tampabay.com/nie, call 727-893-8138 or email ordernie@tampabay.com. Follow us on Twitter at twitter.com/TBTimesNIE. Like us on Facebook at facebook.com/TBTNIE.

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Credits
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Florida Standards

This publication and the activities focus on the following Florida Standards.

Health: HE.412.B.4.4; HE.412.B.5.1; HE.412.B.5.4; HE.412.C.2.5

Language Arts: LAFS.412.L.1.1; LAFS.412.L.1.2; LAFS.412.L.3.4; LAFS.412.L.3.5; LAFS.412.L.3.6; LAFS.412.R.1.1; LAFS.412.R.1.2; LAFS.412.R.1.3; LAFS.412.R.2.4; LAFS.412.R.2.5; LAFS.412.R.2.6; LAFS.412.R.3.7; LAFS.412.R.3.8; LAFS.412.R.3.9; LAFS.412.R.4.10; LAFS.412.RF.3.3; LAFS.412.RF.4.4; LAFS.412.RI.1.1; LAFS.412.RI.1.2; LAFS.412.RI.1.4; LAFS.412.RI.1.5; LAFS.412.RI.3.7; LAFS.412.RI.3.8; LAFS.412.RI.3.9; LAFS.412.SL.1.1; LAFS.412.SL.1.2; LAFS.412.SL.1.3; LAFS.412.SL.2.4; LAFS.412.SL.2.5; LAFS.412.SL.2.6; LAFS.412.W.1.1; LAFS.412.W.1.2; LAFS.412.W.1.3; LAFS.412.W.2.4; LAFS.412.W.2.5; LAFS.412.W.2.6; LAFS.412.W.3.7; LAFS.412.W.3.8; LAFS.412.W.3.9; LAFS.412.W.4.10

Science: SC.35.CS-CC.1.1; SC.35.CS-CC.1.2; SC.35.CS-CC.1.3; SC.35.CS-CP.1.2; SC.35.CS-CP.1.3; SC.35.CS-PC.3.1; SC.35.CS-PC.3.2; SC.4.P.9.1; SC.4.P.10.1; SC.4.P.10.2; SC.7.P.11.2; SC.7.P.11.3