

M workbook

for the Prevention of Fire
and other risks



Edition for the Fire Prevention Week by FUNDACIÓN MAPFRE and APTB
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MY WORKBOOK FOR THE PREVENTION OF FIRE AND OTHER RISKS is part of the educational material created for **FIRE PREVENTION WEEK** which has been organized jointly by **FUNDACIÓN MAPFRE**, and the *Asociación Profesional de Técnicos de Bomberos (APTB)*, Spanish Professional Fire Officers Association and Firefighting Services by different Spanish Administrations since 2006.

The aim of **FIRE PREVENTION WEEK** is to transmit knowledge on self-protection to the general population. We want everyone to learn to recognize the risk of fire in their surroundings: homes, work centres, shopping centres and leisure centres.

The publication, “**MY WORKBOOK FOR THE PREVENTION OF FIRE AND OTHER RISKS**”, will teach students how to recognise and prevent possible risks in their daily lives. They will learn how to prevent fires, which items are dangerous, what to do in case of a fire, the emergency telephone number and they will become familiar with the main protection equipment such as fire extinguishers and hydrants, etc.

For more information please call 91 602 52 21 or see:

www.fundacionmapfre.org

www.aptb.org

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Fundación
MAPFRE



My prevention workbook

Hello friends,

I am your friend, “Extin”, the fire extinguisher.

In this workbook for the prevention of fire and other risks, my friend Pablo and I are going to help you learn a little more about fire hazards, how fires start, how to prevent them and how to protect yourself from them.

In this workbook you are going to learn about the main fire protection equipment. Pablo and I are also going to teach you about the dangers of bonfires and fireworks and the precautions you should take when you visit the countryside. You are also going to learn the meaning of the emergency signs.

The answers for the games and puzzles are at the end of this workbook.

HAVE FUN AND
LEARN ALL
YOU CAN!



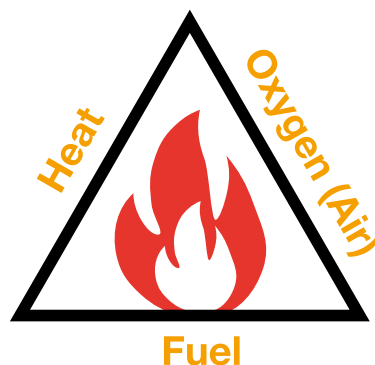
The fire triangle

Three things need to be there for a fire to start:

- First of all there must be something that can burn. This is called **FUEL**. For example, paper, wood for a bonfire, or the wax in a birthday candle.
- Next, there must be **HEAT** or something that can make heat. For example, a match or a lighter.
- Finally, there must be **OXYGEN**. Oxygen is in the air all around us and in the air we breathe. If we do not have oxygen we will suffocate. But, did you know that fire also has to have oxygen? Just like us, if it doesn't have any oxygen, it will suffocate.



These three elements make **THE FIRE TRIANGLE**.



That is why these three elements are needed to have fire. So, how can a fire be put out? It is simple. Just remove one of the three elements and the fire will go out.

For example, when the fire-fighters put water on a fire, they cool it down, which means they remove the heat.



When a candle burns down it goes out because there is no more wax to burn, which means it does not have any fuel.



Let's see what you have learned. Can you complete this equation?



+



+



=



.....

.....

.....

.....

Do you know what a smoke detector is?

A smoke detector is a device that detects a fire when it is still small and sounds an alarm so the fire can be put out and you can get to safety.

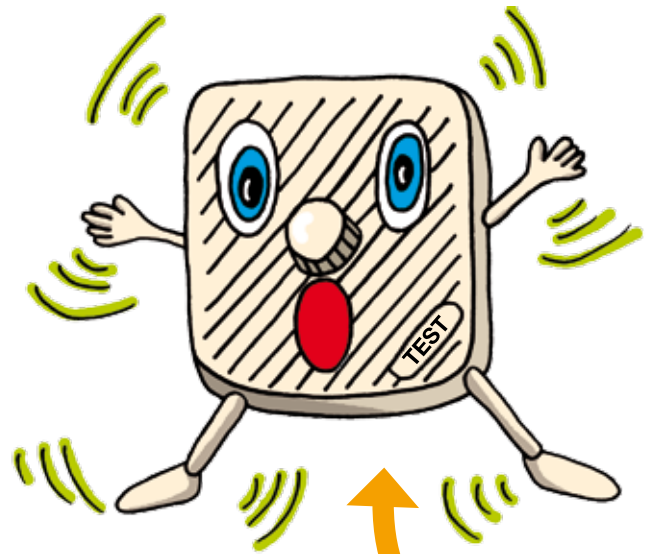
They are usually installed on the ceiling.

There are also several types of detectors:

- Flame detectors.
- Heat detectors.
- Smoke and gas detectors.

Detectors must be installed in buildings such as public buildings, residential homes, hotels and apartments, hospitals, schools and offices.

Even though it is not compulsory to install detectors in your house, it is a good idea to do so.



Types of detectors



Flame detector



Heat detector



Smoke detector

All automatic detectors work in the same way. When a fire is detected an alarm is activated.

Do you know what a fire hydrant is?

A fire hydrant is a device connected to the public waterworks to supply water for the Fire Brigade.

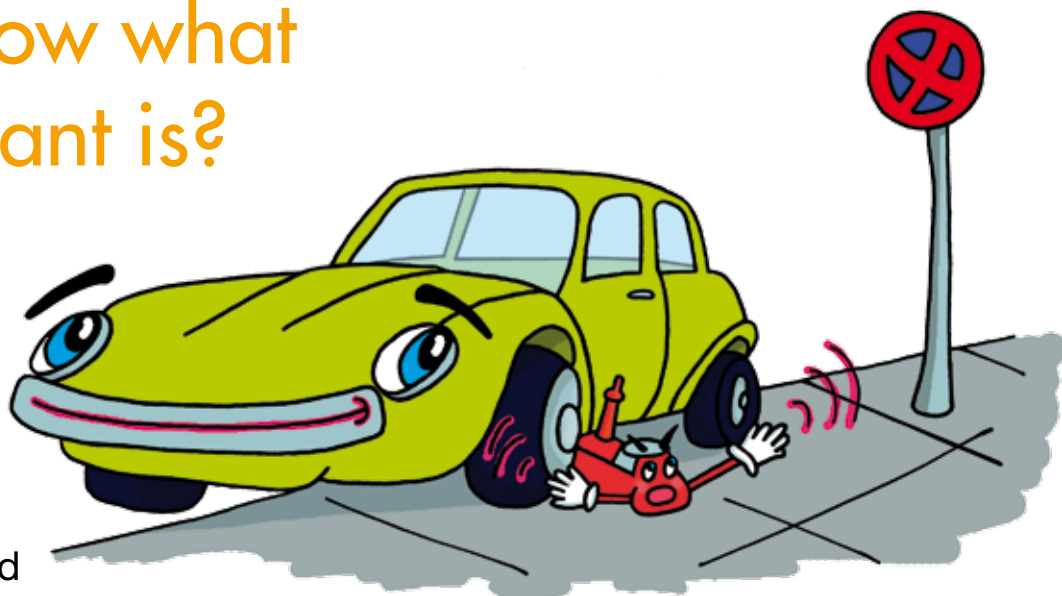
Fire hydrants are used to fill the tanks on the fire trucks with water or to connect the fire hoses.

There are two types for fire hydrants:

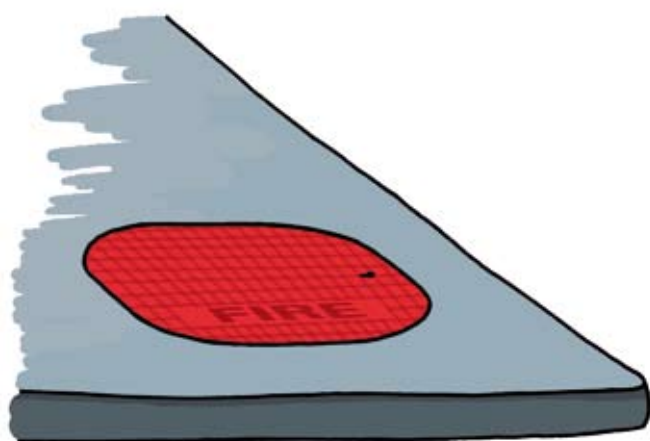
- Ground hydrants are hidden under the surface of the pavement or pedestrian streets and they cannot be seen.
- Pillar hydrants can be seen above the surface.

Fire hydrants must be installed near buildings and be easy to access.

In cities hydrants are installed every 200 meters and they must be marked with a sign.



Types of hydrants



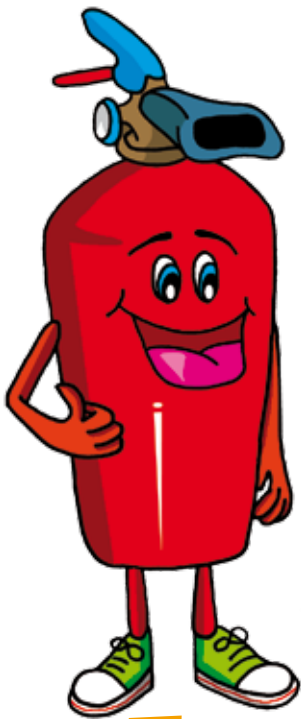
Ground hydrant



Pillar hydrant

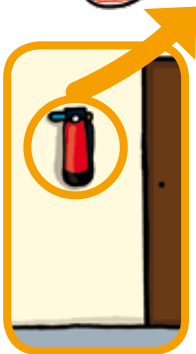
Care must be taken not to park on top of ground fire hydrants or in front of pillar hydrants so the Fire Brigade can use them whenever they need to.

Do you know what a fire extinguisher is?



A fire extinguisher is a device used to put out small fires when they first break out. Inside a fire extinguisher there is a product we call an **extinguishing agent**. An extinguishing agent is a product that puts out fire. There are different kinds of extinguishing agents:

- Liquid (water).
- Solid (powder).
- Gas (carbon dioxide or CO₂).



All buildings such as stores, schools, hotels, hospitals, offices, factories, garages must have fire extinguishers, as well as homes, buses, trucks and cars.

Fire extinguishers must be visible and easy to reach. They must never be hidden behind doors or in cupboards, wardrobes, closets or drawers.

In order for a fire extinguisher to be effective you must know how it works. Do you know how to use one? The steps below are out of order. Can you put them in the right order so you can explain them to an adult?

A

Aim the extinguishing agent at the base of the flame while keeping the extinguisher in a vertical position

B

Remove the safety pin that blocks the extinguisher so that it cannot be used by accident

C

Press the handle or trigger

Answers

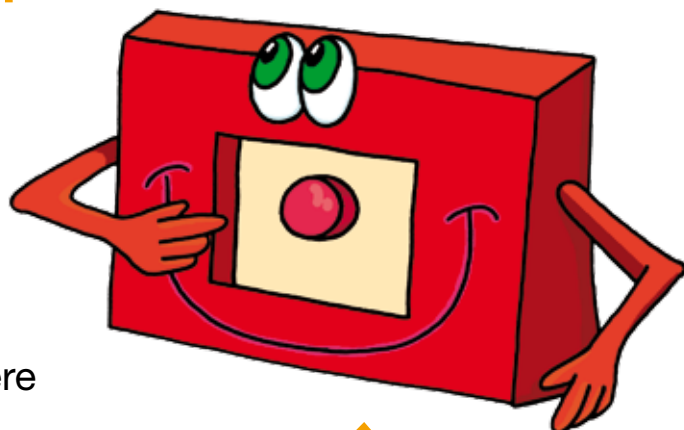
- First:
- Second:
- Third:

Remember fire extinguishers must only be used by adults. Never try to put out a fire yourself no matter how small it is.

Do you know what a manual alarm call point is?

A manual alarm call point is a device that triggers a siren or bell when there is a fire.

When the manual alarm call point is pushed a signal is sent to an alarm centre and causes the siren or bell to sound on the floor where the fire was detected. Only press this button when there is a fire.



Do not play with manual alarm call points.

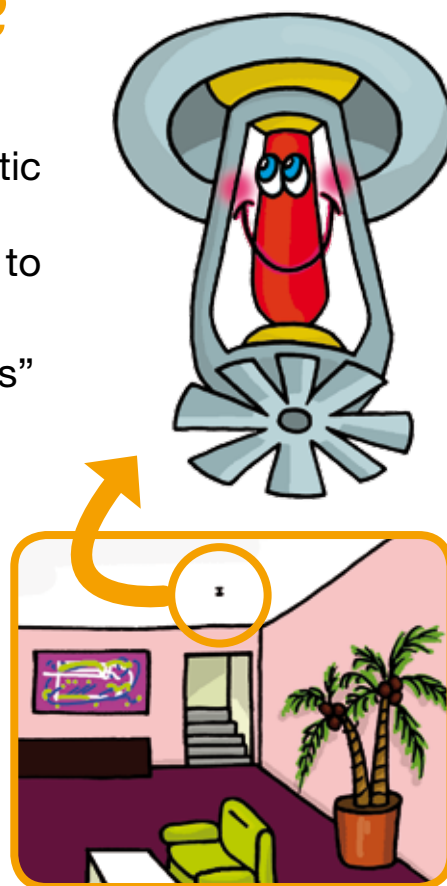
Do you know what an automatic sprinkler is?

In some places where there is a fire risk an automatic sprinkling device is installed in the ceiling. If a fire breaks out the sprinkler sprays the area with water to extinguish it.

These sprinklers are called “rociadores automáticos” in Spanish.

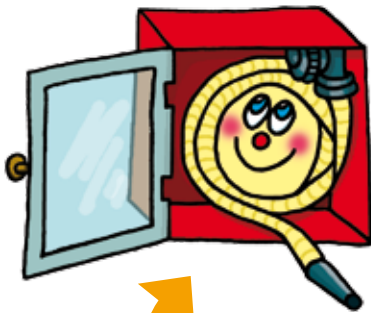
Sprinklers are like having a fireman on duty in the ceiling with a hose 24 hours a day 7 days a week.

You will find sprinklers in public buildings, residential homes and in buildings where there are lots of people such as cinemas, discotheques, shopping centres and sports arenas.



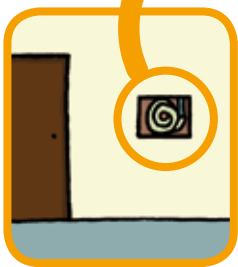
Sprinklers in buildings save many lives.

Do you know what an Equipped Fire Hydrant or BIE is?



The Equipped Fire Hydrant is recognised in Spain by its initials B I E. The BIE is prepared so that people in the building can use it to extinguish small fires. Equipped Fire Hydrants are usually installed in boxes or cupboards in the walls.

Equipped Fire Hydrant boxes have a fire hose rolled up inside connected to the water mains and the hose has a nozzle to aim the water toward the base of the fire.



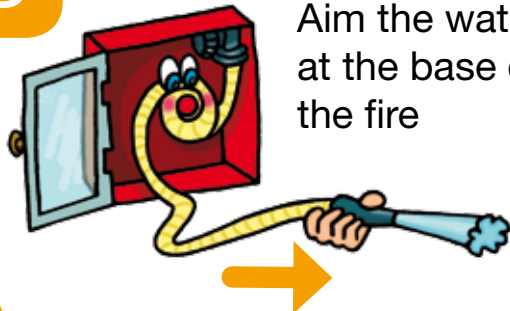
Do you know how to use a BIE 25 mm? The steps to follow are listed below but they are out of order. Put them in the right order and then you will know how to use a BIE.

A



Hold the nozzle and open the faucet

B



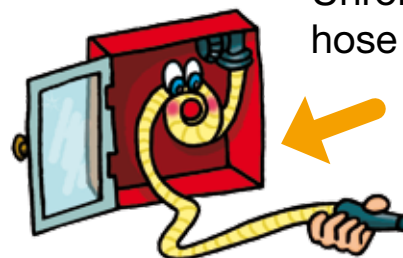
Aim the water at the base of the fire

C



Open the door of the BIE

D



Unroll the fire hose

Answers

• First:

• Second:

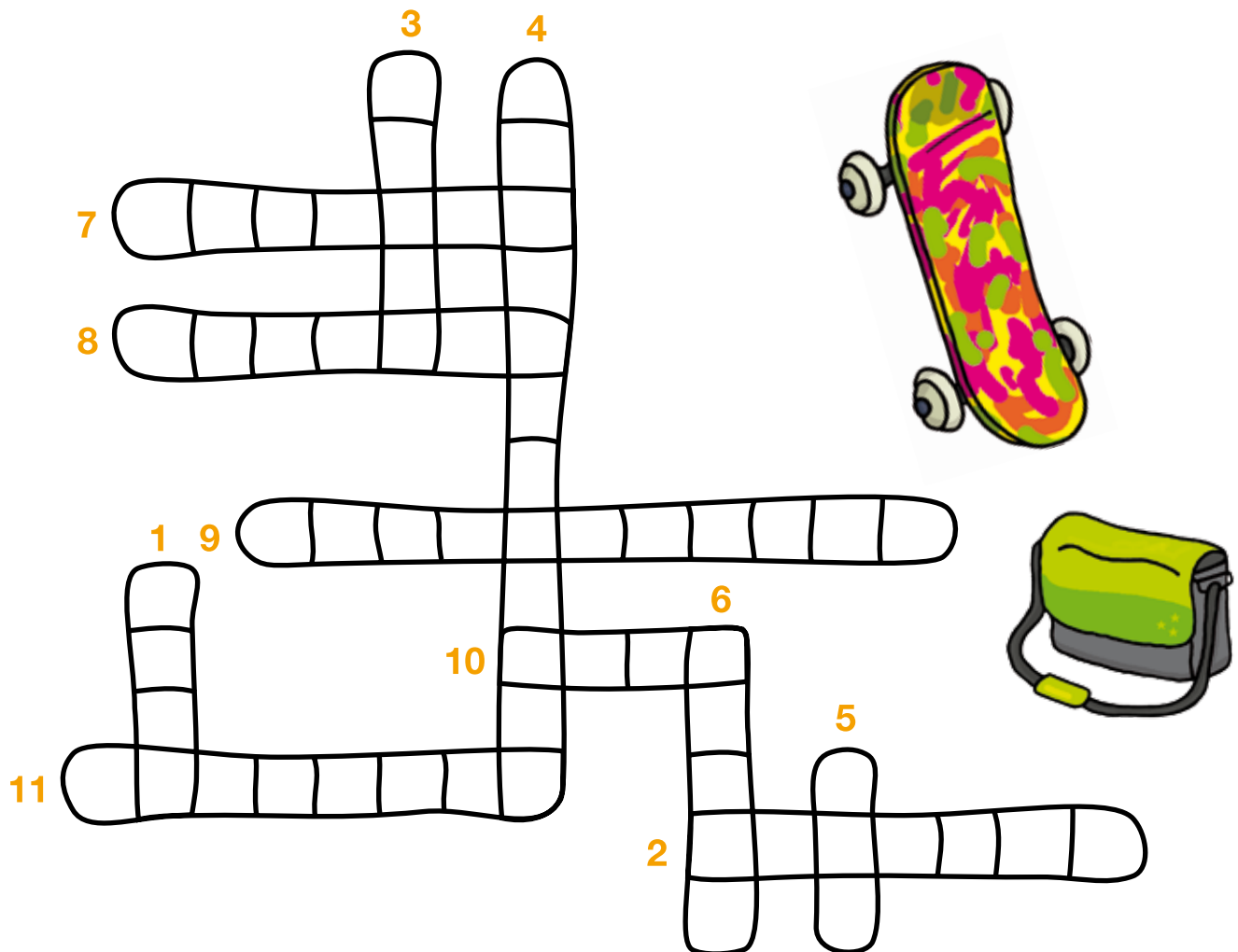
• Third:

• Fourth:

Like the fire extinguisher, only an adult can use a BIE.

Crossword puzzle on fires

Complete the crossword puzzle below with the words you have learned in this workbook and check how much you know with the answers on page 23.



- 1 Tool firemen use to put out fires.
- 2 Place where detectors are usually installed.
- 3 Manual _____ call point.
- 4 Portable device for putting out small fires.
- 5 Initials in Spanish for Equipped Fire Hydrant.
- 6 Vehicle that firemen usually use.
- 7 Device where firemen connect their hoses.
- 8 Person who puts out fires.
- 9 Meaning of round white signs with a red border and a red cross band.
- 10 One of the sides of the fire triangle.
- 11 Device used to detect fires.

Dangers during holidays and leisure time

Dangers are always there, even when you are at a festival, having fun, or on vacation. Dangers never sleep and they are always there, waiting. We are often unaware of the dangers around us. This means it is very important we keep prevention in mind when we are enjoying our free time.

Pablo is going to help us to teach you how to have fun safely in your free time. First, we'll be going to the Night of San Juan Bonfire with him. Then we'll go for a picnic in the countryside park with his family. Finally, we'll go to the firework display on the beach. You are going to discover what the dangers are in these three places. Pablo will be making some mistakes and we are going to warn him about the dangers. Then we will learn what we need to do to prevent dangerous situations.

HAVE FUN AND
LEARN ALL YOU CAN!



Dangers at the Night of San Juan Bonfire

Remember

- Do not build a bonfire near houses, cars or trees.
- Do not light the bonfire with petrol or other flammable products.
- Do not throw paper or cloth on the bonfire because the wind might whip them up and they could fly away and start a fire somewhere else a long way away.
- Do not throw spray cans on the bonfire because they explode.
- Do not throw tyres or plastics on the bonfire because they contaminate the air.
- Stay at a safe distance away. Do not jump on the fire or play with it.
- Make sure that the bonfire is completely out before leaving the area.

Put a red circle around the 5 pieces of advice that are not being followed.



Dangers in the countryside

Remember

- Do not leave trash, or bottles. Glass can cause fires.
- Only have barbeques in designated areas and during authorised seasons.
- Do not throw things like cigarettes or cigarette butts on the ground.
- Do not play with matches or lighters.
- Do not build fires or bonfires.

Put a red circle around the 2 pieces of advice that are not being followed and a green circle around the one that is.



Dangers of fireworks

Remember

- Do not pick up any remains from fireworks. They may explode or cause burns or injuries.
- Do not go inside the fenced-off areas reserved for setting off the fireworks.
- If anything falls into your eyes from the fireworks go immediately to the first aid station.
- Do not throw firecrackers.

Put a red circle around the 2 pieces of advice that are not being followed.



Emergency signs

Buildings have various signs that give us different kinds of information. You can distinguish them by their colour and shapes.

Some signs warn us of dangers. Others tell us where fire extinguishing equipment is located. Some signs prohibit things and other signs give instructions about how to exit the building in case of emergency. Let's look at some of the most important signs.

Warning and danger signs

Warning and dangers signs are triangular and have a yellow background.



General Danger Sign



Flammable Material



Electrical Shock Risk



Toxic Substances



Overhead Loads



Trip Hazard

Prohibition safety signs

Prohibition safety signs are round and have a white background with a red outer circle and a red band crossing the middle.



No Smoking and
No Naked Flames



No entry to
unauthorised persons



Do not drink.
Non Potable Water

Fire fighting signs

Fire fighting signs are square or rectangular and have a red background.



Manual alarm
call point



Emergency
Telephone



Fire
Extinguisher



Equipped Fire
Hydrant or BIE



This sign shows the
direction to go to locate
fire fighting equipment



This sign shows
where the fire fighting
equipment is

Evacuation and emergency signs

Evacuation and emergency signs are square or rectangular with a green background.



Emergency Stairway



Emergency Exit



First Aid



This sign points
to the exit



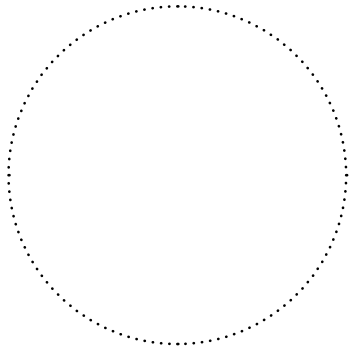
Emergency Exit
Press bar to open



Evacuation route that leads
to the emergency exit

Have you learned what the signs mean?

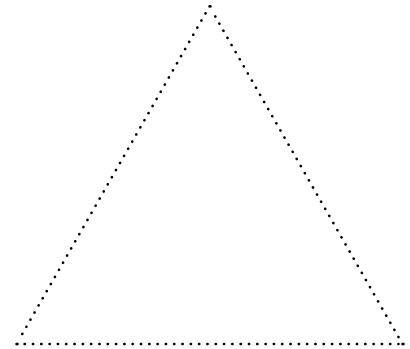
Check to see if you have learned what the signs mean by reading the phrases and drawing each of the signs. Remember, colours are really important.



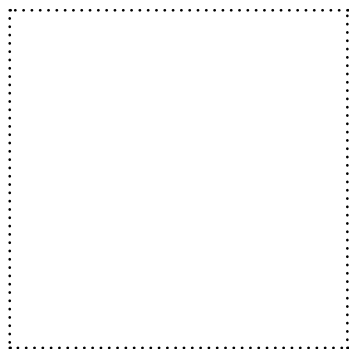
No Smoking and
No Naked Flames



Fire
Extinguisher



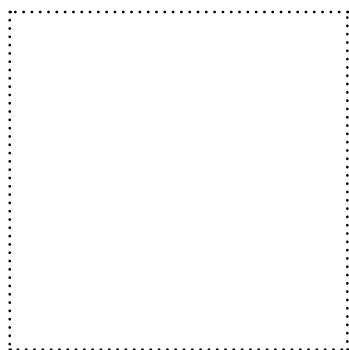
Electrical Shock
Risk



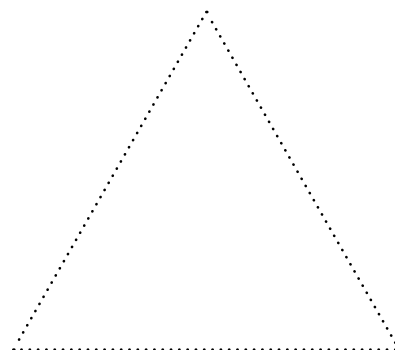
Emergency Telephone



Manual alarm
call point



Emergency Exit



General Danger Sign

How much do you know about fires?

Answer these questions by drawing a circle around the correct answer.
Check your answers on page 23.

- 1** Prohibition safety signs are usually...
- A.** triangular with a yellow background.
 - B.** round with a white background, with a red outer circle and with a red band across it.
 - C.** square or rectangular with a green background.

- 2** The fire triangle has three sides which represent the three elements needed to have a fire. These three elements are...
- A.** heat, air and fuel.
 - B.** pyromaniac, fuel and oxygen.
 - C.** time, intensity and temperature.

- 3** If you are building a bonfire. Which things should you never throw on the fire?
- A.** Sprays or pressurised cans because they will explode.
 - B.** Tyres or plastics because they are highly contaminating.
 - C.** Any of the above.

- 4** Do you know what a fire hydrant is?
- A.** A device to detect fire.
 - B.** A device connected to the public waterworks to supply water to the firemen.
 - C.** A button to sound a fire alarm when there is a fire.



- 5** What do the initials B I E mean in Spanish?
- A.** Immediately Equipped Firemen.
 - B.** Fire Escape and Extinguishers.
 - C.** Equipped Fire Hydrant.
- 6** What is a “*Rociador Automático*” in English?
- A.** Sprinkler.
 - B.** Fire Hydrant.
 - C.** Fire Extinguisher.
- 7** Where should fire extinguishers be located?
- A.** In the ceiling.
 - B.** Hidden behind doors or inside cupboards or closets.
 - C.** In places where they are visible with easy access.
- 8** Fire detection devices...
- A.** only detect fumes.
 - B.** only detect flames.
 - C.** there are three types and they can detect heat from a fire, flames, smoke or fumes.



- 9** Which of the following items are fire fighting equipment?
- A.** Fire extinguishers, detectors, BIEs, sprinklers, fire hydrants and manual alarm call points.
 - B.** Axes and hammers.
 - C.** Firemen and storms.
- 10** Warning and dangers signs are...
- A.** round signs with a white background.
 - B.** triangular with a yellow background.
 - C.** green squares.

Find out how many right answers you have by looking on page 23.

Each question is worth 1 point. Add up the number of correct answers and put your score in the box.



Score

On this test about fire, I had a score of

.....
Number of right answers.



Remember this advice

Let's finish our journey through the world of fire prevention with a summary of the most important things you should never forget.

- Do not play with fire.
- Fire prevention equipment should be easy to see and easy to reach and should not be played with.
- You should never try to put out a fire, even if it is small. Fire extinguishers and BIEs can only be used by adults.
- If there is a fire in your house:
 - Stay calm. Call 112. Don't wait for someone else to do it.
 - Touch the door. If it is hot, do not open it.
 - If there is smoke on the other side of the door, do not go out and close the door so the smoke cannot get in.
 - If there is no smoke, go out straight away to the street.
 - If there is smoke in the house, crawl along the floor.
 - If your clothes catch fire, stop, throw yourself on the ground and roll.
 - Do not stay behind looking for or gathering your things.
- Obey the emergency signs. They can save your life.
- Do not use flammable products, tyres, plastics, paper or cloth to light the bonfires on the Night of San Juan.
- When in the countryside, remember that barbeques can only be made in designated areas and during authorized seasons. Do not leave glass around because it can cause fires.
- Keep away from the fenced off area at the fireworks display and do not pick up any remains from fireworks because they may explode.

We hope you have had as much fun as we have. But more than that, we hope that from now on you, your family and your friends and everyone will enjoy a safer environment.

Be sure to tell them about all the things you have learned in this workbook!

Answers

The fire triangle (page 5).

Let's see what you have learned. Can you complete this equation?



FUEL

+



HEAT

+



OXYGEN

=



FIRE

Do you know what a fire extinguisher is? (page 8).

Answers

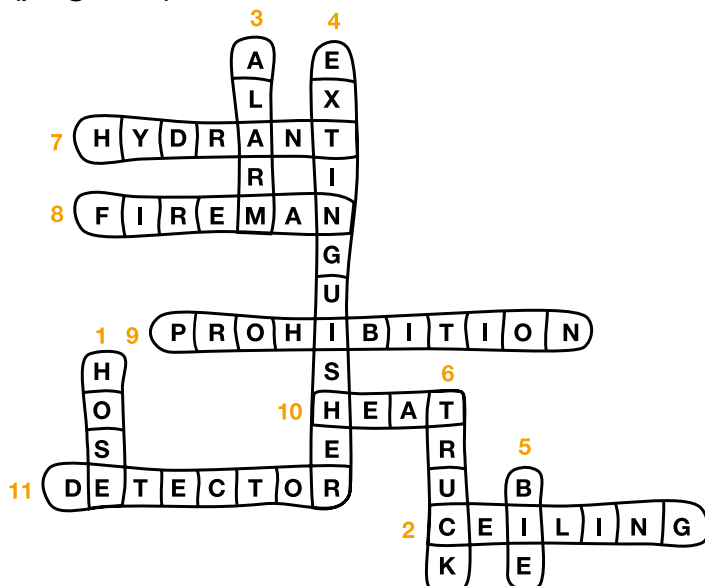
- First: B.
- Second: C.
- Third: A.

Do you know what an Equipped Fire Hydrant or BIE is? (page 10).

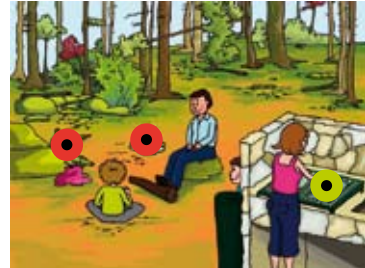
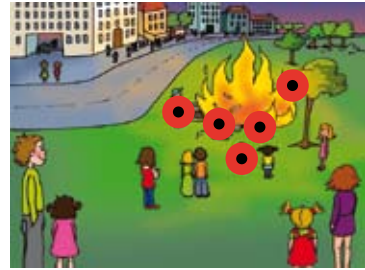
Answers

- First: C.
- Second: A.
- Third: D.
- Fourth: B.

Crossword puzzle on fires (page 11).



Dangers (pages 12-15).



Have you learned what the signs mean? (page 18).



How much do you know about fires? (pages 20-21).

Answers

- 1: B.
- 2: A.
- 3: C.
- 4: B.
- 5: C.
- 6: A.
- 7: C.
- 8: C.
- 9: A.
- 10: B.

MY WORKBOOK FOR THE PREVENTION OF FIRE AND OTHER RISKS is a teaching material that will help school age children to recognise the risks they may find in these matters in their daily lives and the guidelines to follow to prevent them.

For more information please call 91 602 52 21 or see:

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