

Before you read

0753CH08

*Fire is both useful and dangerous. What is fire?
How did we discover it? How do we control it?*



Fire: Friend and Foe

Early man didn't know what fire was, but he must have seen the damage it could cause. He must have watched lightning and volcanoes long before he began to use fire himself. Fire was powerful and dangerous, and he was frightened.

Fire may have puzzled early man but we now know that fire is the result of a chemical reaction. When the oxygen in the air combines with carbon and hydrogen in a fuel, a chemical reaction takes place. Energy in the form of heat and light is released in this process. This is what we call fire.

Three things are needed to make fire — fuel, oxygen and heat. Wood, coal, cooking gas and petrol are some examples of fuel. Oxygen comes from the air. That is why, when you blow on smouldering paper, it often bursts into flame. The third thing needed to make fire is heat. Fuel and oxygen do not make fire by themselves, or else a newspaper or a stick lying in the open would catch fire on its own. To burn a piece of paper or wood,



smouldering:
burning slowly
without flame



we heat it before it catches fire. We generally do it with a lighted match. Every fuel has a particular temperature at which it begins to burn. This temperature is called the 'flash point' or 'kindling temperature' of the fuel.

It is sometimes said that fire is a good servant but a bad master. It only means that fire is very useful as long as it is kept under control.

For instance, we use it to cook our food, warm our homes in winter and to generate electricity. But, on the other hand, if fire gets out of control it can be very dangerous. Each year thousands of homes and shops are damaged by fire. Vast areas of forest are also destroyed and hundreds of people are killed or injured.

Just as three things are needed to start a fire, there are three main ways in which a fire can be put out. In each, one of the three things needed for burning is taken away.



generate:
produce



add fuel to the flames
(idiom): say or do something that makes people react more strongly and fiercely

smothered:
suffocated
(from lack of air)

extinguish:
put out

For example, we can take away the fuel. If the fire has no fuel to feed on, no burning can take place. We often let a fire die out simply by not adding more fuel to it.

The second way of putting out a fire is to prevent oxygen from reaching it. No supply of oxygen means no fire. Small fires can be put out or 'smothered' with a damp blanket or a sack. This stops oxygen reaching the burning material. Sometimes, carbon dioxide is used to extinguish fire. It does not allow oxygen to reach the burning material.

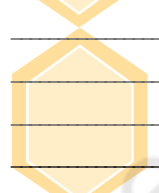
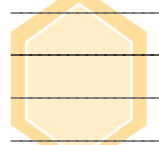
The third way of putting out a fire is to remove the heat. If the temperature can be brought down below the flash point, the fuel stops burning. You blow on a burning matchstick or a candle to put it out. In doing so, you remove the hot air around the flame bringing down its temperature below the flash point, and the candle goes out. Sometimes, water is sprayed on a fire. It absorbs heat from the burning fuel and lowers the temperature. The blanket of water also cuts off the supply of oxygen, and the fire is extinguished.

Some fires cannot be put out with water. If water is sprayed onto an oil fire, the oil will float to the top of the water and continue to burn. This can be very dangerous because water can flow quickly, carrying the burning oil with it and spreading the fire. Water should also not be used on fires caused by electrical appliances. The person spraying water might receive an electric shock and be killed. A carbon dioxide extinguisher is the best thing to fight an electrical fire.



We spend millions of rupees each year in fighting fires. And we spend more trying to find new ways of preventing fires from happening and getting out of control. On the whole, we have learnt rather well to control fire and put it to good use in our everyday life.

Long ago, there were no firemen. When fire broke out, everybody became a firefighter. People formed human chains (they still do if required) and passed buckets of water from a well or a pond to the blaze. Now there are laws about building construction which ensure that space is left between buildings to reduce the fire risk. Every new building, especially a public place, must ensure observance of fire prevention norms. Bands of firefighting workers with special equipment, known as fire brigades, are there to put out fires. Firefighters are highly trained people. They possess many skills. They cut off electricity supply, knock down dangerous walls, spray water and other materials to bring fire under control. They are also trained in first aid so that



bands: groups

equipment:
things needed





cope: deal with; manage

they can help people suffering from burns or from the effects of smoke.

The discovery of fire and its uses helped early man to cope with nature better and gradually adopt a settled mode of life. Fire is still worshipped in many parts of the world. Fire is indeed a friend but, as we know, it can be a dangerous enemy once it gets out of control.



Comprehension Check

1. Mark the correct answer in each of the following.
 - (i) Early man was frightened of
 - (a) lightning and volcanoes.
 - (b) the damage caused by them.
 - (c) fire.
 - (ii)
 - (a) Fire is energy.
 - (b) Fire is heat and light.
 - (c) Fire is the result of a chemical reaction.
2. From the boxes given below choose the one with the correct order of the following sentences.
 - (i) That is fire.
 - (ii) A chemical reaction takes place.
 - (iii) Energy in the form of heat and light is released.
 - (iv) Oxygen combines with carbon and hydrogen.

(i) (ii) (iii) (iv)

(ii) (iii) (i) (iv)

(iv) (iii) (ii) (i)

(iv) (ii) (iii) (i)



Working with the Text

Answer the following questions.

1. What do you understand by the 'flash point' of a fuel?
2. (i) What are some common uses of fire?
(ii) In what sense is it a "bad master"?
3. Match items in Column A with those in Column B.

A

- (i) fuel
- (ii) oxygen
- (iii) heat

B

- lighted matchstick
- air
- coal
- burning coal
- wood
- smouldering paper
- cooking gas



4. What are the three main ways in which a fire can be controlled or put out?
5. Match the items in Box A with those in Box B

A

- (i) To burn paper or a piece of wood,
- (ii) Small fires can be put out
- (iii) When water is spread on fire,
- (iv) A carbon dioxide extinguisher is the best thing
- (v) Space left between buildings

B

- it absorbs heat from the burning material and
- lowers the temperature.
- reduces the risk of fire.
- with a damp blanket.
- we heat it before it catches fire.
- to put out an electrical fire.



6. Why does a burning candle go out when you blow on it?
7. Spraying water is not a good way of putting out an oil fire or an electrical fire. Why not?
8. What are some of the things you should do to prevent a fire at home and in the school?

Working with Language



1. Read the following sentences.

To burn paper or a piece of wood, we *heat* it before it *catches* fire. We generally *do* it with a lighted match. Every fuel *has* a particular temperature at which it *burns*.

*The verbs in italics are in the **simple present tense**. When we use it, we are not thinking only about the present. We use it to say that something happens all the time or repeatedly, or that something is true in general.*

Find ten examples of verbs in the simple present tense in the text 'Fire: Friend and Foe' and write them down here. Do not include any passive verbs.

_____	_____	_____
_____	_____	_____
_____	_____	_____

2. Fill in the blanks in the sentences below with words from the box. You may use a word more than once.

carbon	cause	fire	smother
--------	-------	------	---------

- (i) Gandhiji's life was devoted to the _____ of justice and fair play.
- (ii) Have you insured your house against _____?
- (iii) Diamond is nothing but _____ in its pure form.
- (iv) If you put too much coal on the fire at once you will _____ it.



- (v) Smoking is said to be the main _____ of heart disease.
- (vi) When asked by an ambitious writer whether he should put some _____ into his stories, Somerset Maugham murmured, "No, the other way round".
- (vii) She is a _____ copy of her mother.
- (viii) It is often difficult to _____ a yawn when you listen to a long speech on the value of time.
3. One word is italicised in each sentence. Find its opposite in the box and fill in the blanks.

spending shut destroy subtract increase

- (i) You were required to keep all the doors *open*, not _____.
- (ii) PUPIL: What mark did I get in yesterday's Maths test?
TEACHER: You got what you get when you *add* five and five and _____ ten from the total.
- (iii) Run four kilometres a day to *preserve* your health. Run a lot more to _____ it.
- (iv) If a doctor advises a lean and lanky patient to *reduce* his weight further, be sure he is doing it to _____ his income.
- (v) The world is too much with us; late and soon,
Getting and _____ we lay waste our powers.
– WORDSWORTH
4. Use the words given in the box to fill in the blanks in the sentences below.

across along past through

- (i) The cat chased the mouse _____ the lawn.
- (ii) We were not allowed to cross the frontier. So we drove _____ it as far as we could and came back happy.



- (iii) The horse went _____ the winning post and had to be stopped with difficulty.
- (iv) It is not difficult to see _____ your plan. Anyone can see your motive.
- (v) Go _____ the yellow line, then turn left. You will reach the post office in five minutes.

Speaking and Writing



1. Look at the following three units. First re-order the items in each unit to make a meaningful sentence. Next, re-order the sentences to make a meaningful paragraph. Use correct punctuation marks in the paragraph.
 - (i) and eighteen fire tenders struggled/the fire began on Monday/to douse the blaze till morning
 - (ii) in a major fire/over 25 shops/were gutted
 - (iii) but property/was destroyed/worth several lakhs/no casualties were reported.
2. Read the following newspaper report given in the box below.

Fire Station Goes Up in Flames

A fire chief was embarrassed when a station without a smoke alarm went up in flames. The building and a fire engine were destroyed in the blaze. Nobody was injured in the fire that was tackled by 30 firefighters in six fire engines from neighbouring towns.

