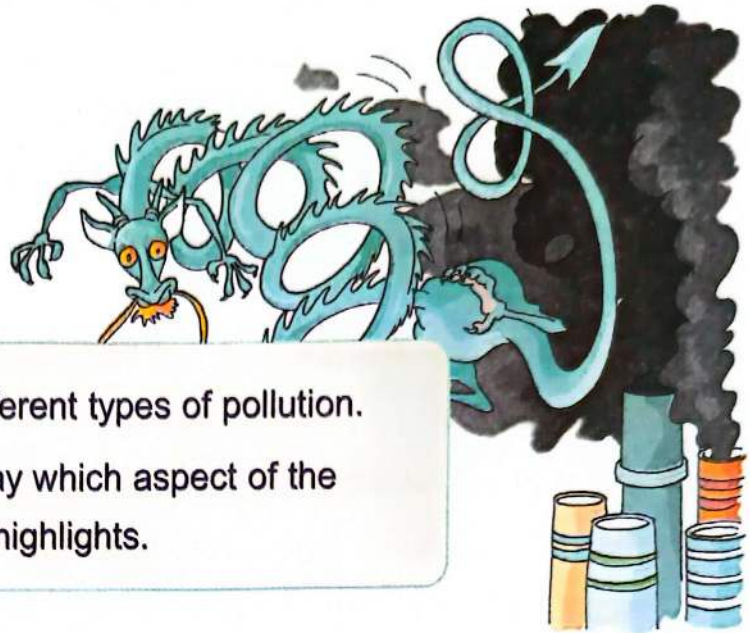


2

Air Pollution

Getting Ready

1. What is pollution? List different types of pollution.
2. Look at the picture and say which aspect of the environmental problem it highlights.



A Polluted Air – with Every Breath We Take

Reading

No one can forget the Bhopal Gas Tragedy - the worst industrial disaster in India. On December 3, 1984, a deadly gas leak from a chemical plant owned by Union Carbide, a multinational company, killed 4,000 people, injured about 150,000 to 600,000 and **crippled** and blinded thousands for a lifetime. Not only Bhopal, but many cities all over the world may be on the verge of waiting for such a disaster. But even without such a disaster, people living in big cities breathe

polluted air that may be slowly poisoning many of them. Air pollution is a major problem in the modern world.

A man can live without food for nearly a month, without water for two to three days, but he cannot live without air even for a few minutes. It is estimated that an average adult breathes in and out about 15 kilograms of air, whereas he consumes only about 1.5 kg of food and 2.5 kg of water. It is obvious that the amount of pollutants and harmful substances-that

crippled : unable to walk or move normally because of an injury **respiration** : the act of breathing

contaminated : dirty, no longer pure **inhalation** : taking in air as you breathe **spewed** : sent out

may enter our bodies through **respiration** would be many times more than those that may enter the body with polluted water and **contaminated** food.

Air is a mixture of 78% nitrogen, 21% oxygen, a little less than 1% argon and 0.03% carbon dioxide. These gases together make up 99% of the atmosphere, the air around us. As long as this composition is maintained, the air is pure. But if this composition is changed with the entry of substances harmful to the human body, the air becomes polluted, and **inhalation** of this air can pose a serious threat to human health.

Air pollution is not new and there are many natural causes for air pollution; volcanic activity, dust from natural sources and smoke from forest fires being some of them. But air pollution has become a serious, widespread and ever-present threat primarily as a result of rapid and expanding industrialization all over the world for the last 200 years. And this is man-made.

One major cause of air pollution is the smoke **spewed** by industries that burn

garbage dumps : places where waste is thrown, dustbins **Thermal power stations** : power stations that produce electricity using heat energy **ore** : rock, earth from which metal is extracted

fuels such as coal, coke and furnace oil. The thickness of the smoke depends on the type and quantity of fuel burnt. Apparently, this smoke seems to disappear in a short time, but that never happens in reality. This smoke mingles with the air around us and contaminates it. And we breathe in this polluted air, which contains poisonous gases like carbon monoxide, ash and dust particles. Without our knowledge, our lungs slowly become **garbage dumps** for these pollutants.

Thermal power stations are the worst among industries that emit huge amounts of smoke and ash. For instance, a 500 MW thermal power plant produces 2,000 tonnes of ash every day in addition to smoke. Other industries contributing significantly to air pollution are cement, steel and **ore processing industries**. Some chemical industries also release



ore processing industries : factories that take out metal from ore through heating : **automobile exhausts** waste gases that come out of motor vehicles

other toxic gases like oxides of nitrogen and sulphur into the air along with the smoke.

Automobile exhausts are no less dangerous. Urban air pollution is mostly caused by vehicular traffic, which has expanded rapidly in the last 3 decades. There has been a 4 to 5-fold increase in traffic in cities in the industrialized Western nations. In many developing nations, the increase has been tenfold or more. For example, in Delhi, the number of motor vehicles went up from 5 lakhs in 1981 to over 34.5 lakhs in 2001. One estimate has shown that the number of two-wheelers has crossed the 50 million mark in our country. This urban transport is largely responsible for the presence of **fine particulate**, for 80-90% of lead and most of carbon monoxide in the urban atmosphere. The menace of air pollution created by automobile exhausts has reached such a dangerous level that if nothing is done to control air pollution in the cities we may have to wear gas masks in the future.

Indoor air pollution is another health hazard. The lack of ventilation indoors



concentrates air pollution where people are most exposed to them. Harmful gases released from many building materials like plywood, paints, **asbestos** and even carpeting can be inhaled and can lead to dangerous illnesses like cancer or tuberculosis. Intentional air pollution is introduced with the use of air fresheners and incense and other scented items. Burning wood in stoves and fireplaces can add significant amounts of smoke particulates into the air, inside and out. Clothing emits certain gases for days after dry cleaning. Use of pesticides and other chemical sprays are also a cause of indoor air pollution. Second-hand tobacco smoke is now recognized as an indoor air pollutant.

To sum up, air pollution is all around us, inside our homes and outside.

fine particulate : substances in the form of very small separate particles that enter the air, that come from car engines specially and are harmful for our health

asbestos : a grey soft mineral that does not catch fire, used in buildings as protection against fire

Understanding

Answer the following questions.

1. Why does the author call the industrial accident that took place on Dec. 3, 1984, in Bhopal a tragedy? Also, mention the cause of the accident.
2. In the opinion of the author, what sort of problem is every big city in India facing everyday?
3. Why is air more important than food and water?
4. Why is air pollution more serious than polluted water or contaminated food?
5. When is air called polluted? What harm can polluted air cause to human beings?
6. How is man-made pollution different from natural pollution?
7. Name the harmful substances that enter the air from factories and motor vehicles.
8. List the industries that are source of air pollution mentioned in the passage.
9. What sort of vehicles are on the increase? What have they led to?
10. What is a gas mask? Why is it going to be required soon?
11. What is indoor pollution? Make a list of substances that cause indoor pollution.
12. What do you think is second-hand tobacco smoke?

Words

- A. Pick out the words/phrases from the passage that are used to convey the harmful effects of air pollution on human beings. Two of them are:

deadly crippled

- B. The word 'respiration' (para 2) is the noun form of the verb 'respire' (para 5). Consult a dictionary and find out the verb/noun forms of the following nouns/verbs occurring in the passage.

Noun	Verb	Verb	Noun
resident	consume
pollution	alter

respiration
composition
inhalation
emission
comparison
knowledge

believe
reduce
continue
produce
operate
expect

Grammar

Participles used as adjectives.

Read the following sentences from the passage.

1. People living in big cities breathe **polluted** air.
2. In many **developing** nations, the increase has been tenfold or more.

The words in colour in these sentences are called 'participle adjectives'; 'developing' is a present participle and 'polluted' is a past participle.

Pick out one more example (from para 2) of a past participle used as an adjective.

Complete the following sentences with appropriate participle form of the verb in brackets.

1. The beggar is wearing a shirt. (tear)
2. He does not like to eat a egg. (boil)
3. His grandfather told him a very story. (interest)
4. He was angry with his servant because he served him a chapati. (burn)
5. The mother bought her daughter a new suit. (swim)
6. The baby started crying when he put his hand in water. (boil)



Speaking

MAKING SUGGESTIONS

A. Shown below are three situations and a list of suggestions in the box which go with them. Separate the suggestions and match them with the situations by putting the appropriate numbers under each situation.

1. Oh, the car has broken down, what shall we do?
2. It's raining heavily. We can't go out.
3. I can't cook tonight.

1. We could buy some bread and butter.
2. Let's play cards.
3. Why don't we sit and watch the rain?
4. We could manage with what we have.
5. How about leaving the car here and taking a taxi?
6. How about dining out?
7. Let's look for a mechanic.
8. Why don't we push the car to the nearest garage.
9. I suppose we could watch TV.

B. Work in groups and make suggestions for each of the following situations.

1. Next Sunday it is your grandmother's birthday.
2. Your family wants to spend a week's holiday somewhere.
3. You are meeting some of your friends after a long time.
4. Your class needs to raise money for a school trip.
5. You want to improve your English skills.
6. You have a project due in a week but haven't started yet.