

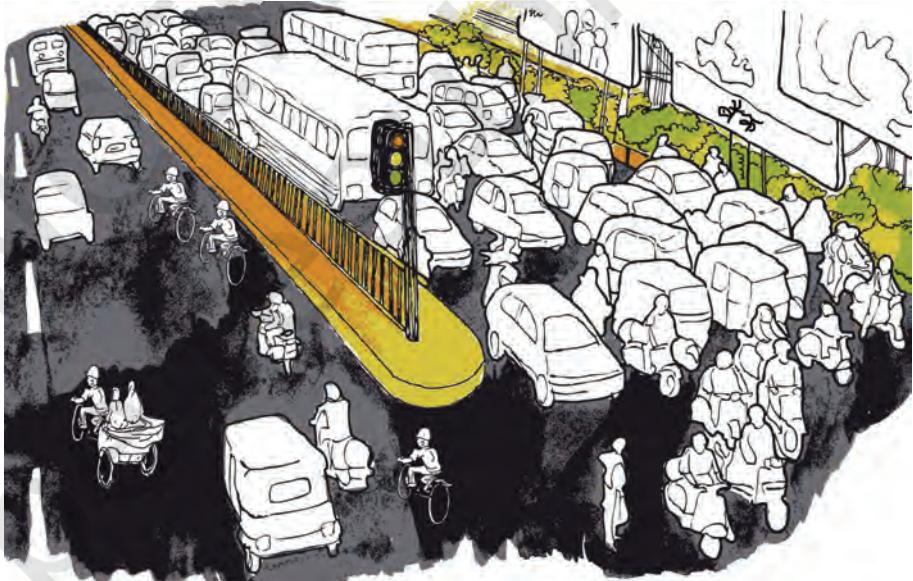
12. What if it Finishes...?



A bus journey

Today, we were going on a school trip to the Adalaj stepwell (*baoli*), about eighteen kilometres from Ahmedabad. We began counting the vehicles on the road. Some of us counted the bicycles, others counted the buses, cars, and motorcycles. Abraham, who was counting bicycles, soon got bored. There were hardly any bicycles on this highway.

Screeech! The driver suddenly braked at the red light. It was a big crossing, and we could see the traffic lined up on all sides. Honk, honk, the sound of loud horns, and smoke coming out of the vehicles! May be that is why a little boy in a rickshaw was coughing so much. I smelt something, familiar. I remembered this smell – it came from Baba's tractor in the village.



Teacher's Note : Examples of familiar highways can help children see the difference between various kinds of roads. Discussion with children could involve listening to their own experiences about the noise made by vehicles and the ill effects of smoke. Discuss road safety rules in the class.





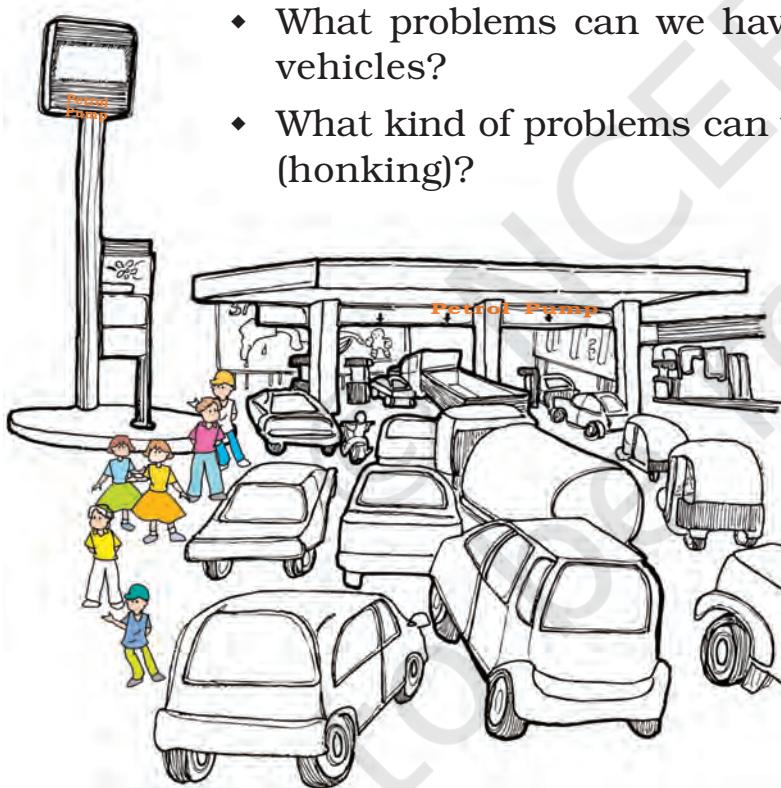
Look at the picture on page 110 and write

- What are the different kinds of vehicles that you can see?
- What do you think they need petrol and diesel as fuel?
- Which of the vehicles do you think give off smoke? Put a red mark on those.
- Which are the vehicles run without petrol and diesel?
- What problems do we face from the speeding vehicles?



Tell

- Do you ride a bicycle? If yes, where all do you go on it?
- How do you come to school?
- How do your family members go to work from home?
- What problems can we have from smoke coming out of vehicles?
- What kind of problems can we face from noise of vehicles (honking)?

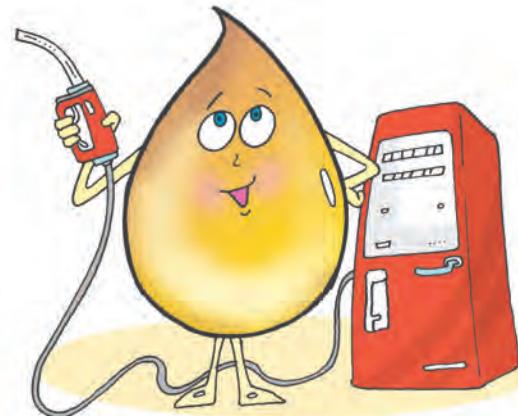


On the petrol pump

After sometime our bus stopped at a petrol pump. There was a long queue. It seemed as if we would have a long wait. We all got down from the bus and started looking around the petrol pump. We saw many large boards and posters.

Teacher's Note : The term 'oil' can be used for petrol, diesel and crude oil. Discuss with children about various minerals which are mined from deep inside the earth.





- **Petrol and diesel will not last forever. Save it for your children.**
- **Make every drop go a long way.**
- **Switch off the engine when you stop the car.**

Date 13-07-2017

Rate

Petrol: ₹ 64.91 per litre

Diesel: ₹ 54.70 per litre



We could not understand why it was written that petrol and diesel will not last forever. We thought of asking an uncle who works at the petrol pump.

Abraham : Uncle, from where do we get petrol and diesel?

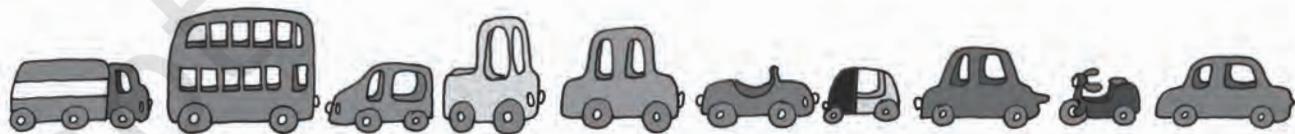
Uncle (who works at the petrol pump) : From deep, deep down under the ground.

Manju : But how does it get made there?

Uncle: It is formed naturally, but very slowly. It is not made by a human being or a machine.

Abraham : Then we don't need to buy it. We can take it out ourselves using a borewell, like we pump out water!

Uncle : It is not found everywhere, but only at a few places in our country. We need big machines to pump it out and clean it.





Find out and discuss

- ◆ Which states of India have oil fields?
- ◆ Besides oil, what else is found deep inside the earth?
- ◆ Find out the traffic rules and discuss them in the class.
- ◆ We should use petrol and diesel judiciously. Think why?

They discuss further...

Divya : Is petrol going to finish? The poster said that petrol is not going to last forever.

Uncle : It does not get made as fast as we take it out. It takes lakhs of years for it to be formed under the earth.

Abraham : How will vehicles run if the oil finishes?

Manju : On CNG. I had seen on TV that vehicles which run on CNG give less smoke.

Uncle (*laughing*) : That too comes from below the earth. It is also limited.

Divya : Electricity can be used to run vehicles. I have seen an electric bicycle.

Abraham : We will have to do something. Or else, how will we travel when we grow up?

Divya : My *dadi* (grandmother) would be happy, if fewer vehicles run on the road. She says, "Look! vehicles line up like ants. What will you do when you grow up?"

Manju : See, only one or two people are sitting in these cars. Why doesn't everyone use a bus?

Abraham : That will save petrol. One bus can carry many people.

Manju : When I grow up I will invent a car that runs on sunlight. Then we won't have to worry about it getting finished. We can use it as much as we want!

Teacher's Note : Different uses of solar energy can be discussed. The concept of 'energy' is abstract for children of this age but they can begin thinking of it in terms of strength, power, etc. Encourage children to think which resources are limited and why. Discuss in the class.



Treasure from the earth

It is not easy to find out where oil is, deep down below the earth. Scientists use special techniques and machines to find this out. Then through pipes and machines petroleum is pumped up. This oil is a smelly, thick, dark coloured liquid. It contains many things mixed in it. To clean and separate these, it is sent to a refinery. Have you heard of a 'refinery'?

It is from this 'petroleum' or oil that we get kerosene, diesel, petrol, engine oil and fuel for aircrafts. Do you know that L.P.G. (cooking gas), wax, coaltar and grease are also obtained from this?

It is also used in making several other things like plastics and paints.



I started thinking about saving oil. I remembered that sometimes Baba keeps the engine of the tractor on, while doing something else. At times, the pump in the field is also left on. How much oil would be going waste! I thought I will surely talk to Baba when I get home.



Write

- What all can vehicles run on?
- What kinds of problems will we face, if the number of vehicles keep on increasing? For example, more traffic on the road. Talk to your elders and write about it.
- Manju said, "Why doesn't everyone use a bus?" What do you think, why don't people travel by buses?
- Suggest some ways to deal with the problems arising out of the growing number of vehicles.
- What are the benefits, if we switch off the engine of the vehicles at the red light on the road?

Teacher's Note : Discuss about the possible options for reducing the number of vehicles on the road and also use different news reports related to it.





Find out and write

How much oil?	Scooter	Car	Tractor
How much petrol/diesel can be filled at a time?			
How far can it go on one litre of petrol/diesel?			

The rates of petrol are different in each city. The rates of petrol and diesel in Delhi are given here. Look at the table and answer the questions.

Oil	Rate of one litre in 2002 (Oct)	Rate of one litre in 2007 (Oct)	Rate of one litre in 2014 (Oct)
Petrol	Rs 29.91	Rs 43.52	Rs 67.86
Diesel	Rs 18.91	Rs 30.48	Rs 58.97

- ♦ In 2014, as compared to 2007 the rate of petrol went up by _____ rupees. The rate of diesel increased by _____ rupees.
- ♦ What was the difference in the rates of petrol and diesel from 2002 to 2007 and 2007 to 2014?



Find out

- ♦ What is the price of petrol and diesel in your area?
- ♦ Why are the prices of petrol and diesel going up?
- ♦ In one month how much petrol and diesel is used in your home? What is it used for?



- ♦ One poster is given here.

For dry cleaning

For lighting

As petrol, diesel or aeroplane fuel

As kerosene and LPG

To run machines

For making plastic and paints

“Save Fuel, Make it a Habit”



See the poster and write

- ♦ Where all is oil used?
- ♦ Where is diesel used? Find out.

Teacher's Note : It would be useful to have a discussion on the poster. This will help children understand that petrol, diesel, kerosene, L.P.G. etc. are all different forms of petroleum. These have different uses in our lives. Children will understand the poster better by relating it to their own experiences.



Divya wrote a poem and read it out to her friends. Read and discuss it.

Who Am I?

I'm black, I'm thick,
I flow.
Who am I?
Do you know?
I will last longer,
If you use me with care.
I got made over centuries.
I won't always be there.
I light your lamps,
I cook your food.
I run your machines,



Fly planes in the sky!
Who is more useful
To people, than I?
If not used with care
I won't always be there
Will they fight over me?
What is life without me?
I'm black, I'm thick,
I flow.
Who am I?
Do you know?

(Translated by Anupa Lal)



Think and discuss

- What would happen if you don't get petrol or diesel for a week in your village or town?
- Suggest some ways to save oil.

Wood for chulha

Durga lives in a village in Haryana. Everyday she spends many hours collecting wood for the *chulha* (stove). Her daughter also has to help her in this. For the past three months she has a cough. There is a lot of smoke when damp wood is burnt. But Durga does not have any other option. When there is not enough money to buy food, where will there be money to buy wood?



Urja Bharti



Discuss

- Have you ever collected dry wood or made cow dung cakes?
How are they made?
- Do you know anyone who collects dry wood or leaves to be used for lighting a *chulha*?

What if it Finishes...?



- Who cooks food in your family? What about other families in your area?
- If they cook food using wood or *upla* (cow dung cakes), what difficulties do they face due to smoke?
- Can Durga use anything else instead of wood? Why not?

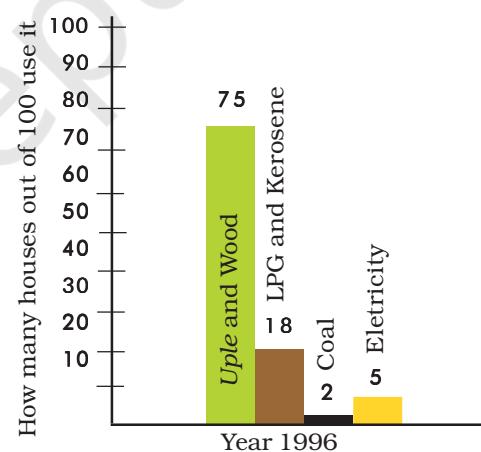
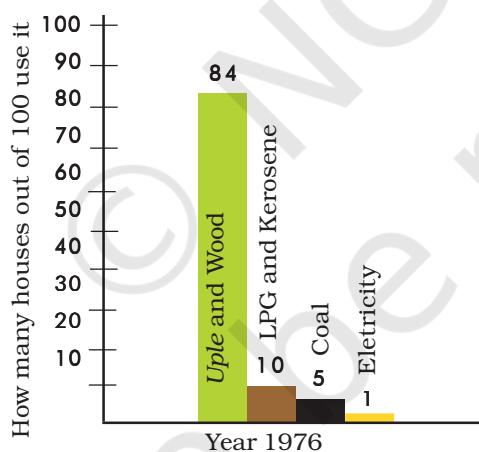
Today, about two-third (2/3) people in our country use *upla*, wood and dry twigs, etc. These are used not only for cooking food but also for keeping warm, for heating water and for lighting. Many other things are used for all activities at home – kerosene, LPG, coal, electricity, etc.

Kancha had seen a **bar chart** in a book. The chart shows the number of houses out of 100 that use each type of fuel. It also shows the use of which fuel has increased and which fuel has decreased over the past twenty years.



Urja Bharti

Change in fuel use over twenty years



- In year 1976, out of 100 how many houses used *upla* and wood?
- Which was the fuel used the least in 1976?
- In 1976, LPG and kerosene were used in _____ houses and in 1996 this increased to _____. This means that in twenty years their use increased by _____ %.



- Out of 100, how many houses were using electricity in 1996?
- Which fuel was used the least in 1996? What percentage of houses used it in the year 1976?



Find out from your elders

- When they were young what was then used to cook food at home?
- In the past 10 years use of which cooking fuel has increased in your area? Use of which fuel has decreased?
- Guess the use of which fuel would increase and which would decrease in the next 10 years.

What we have learnt

- Imagine that a company has given you a chance to design a new vehicle like a mini bus. What kind of vehicle would you design? Write about it. Draw a picture and colour it.
- While making the design, who did you plan to take care of:
 - old people _____
 - children _____
 - those who cannot see? _____
- Look out for news reports on oil. Cut these and make a collage. Put up a chart in your classroom. Also write your own views on these news reports.
- Make a poster with a message on saving fuel. Write a slogan too. Where would you like to put up this poster?



Teacher's Note : Encourage children to relate the use of the term 'per cent' to other instances from their lives, such as – chances of winning a game, marks in a subject, discount sales, etc.

