Homi Bhabha Curriculum for Primary Science



WorkBook Class IV

Jayashree Ramadas

Small Science	
WorkBook	
Class IV	
Pilot Edition 2001	
First Reprint 2003	
Second Reprint 2004	
Third Reprint 2005	
author	general co-ordinator
Jayashree Ramadas	Arvind Kumar
research assistance	primary science co-ordinator
Suchitra Varde	Jayashree Ramadas
design and illustrations	published by
Karen Haydock	Homi Bhabha Centre for Science Education
,	Tata Institute of Fundamental Research,
	V. N. Purav Marg, Mankhurd,
reprinted at	Mumbai 400 088.
© Homi Bhabha Centre for Science Education, 2005.	

No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise without the prior permission of the publisher.

This book is sold subject to the condition that it shall not by way of trade be lent, re-sold, hired out or otherwise disposed off without the publisher's consent in any form of binding or cover other than that in which it is published.

ot a day passes in our country when somebody somewhere has not criticized our system of education, particularly our school education. A great many ills and inadequacies of the system probably flow from extraneous causes and need socio-political initiatives that go beyond mere reforms in school curriculum. But some problems do arise directly from the curriculum - text books, teaching and evaluation practices. There is then a need to keep these problems in view and continually try to devise new curricula to overcome them.

Efforts in curricular reforms and innovations are not new to our country. Nearly every decade or so, there have been initiatives at the Central and State levels to effect changes in curricula. Several independent school networks and voluntary groups have brought out their own textbooks and related materials. There is no doubt that significant progress has been made by the country in increasingly better conceptualization of the school curriculum at primary, middle and secondary levels. The paradigms of school curriculum in India have steadily evolved and become more relevant and modern. Unfortunately, the over-all deterioration of the system due to extraneous factors has tended to obscure these gains. Also, and most important for our purpose here, there is a large gap between the generally agreed objectives of the curriculum and their actual translation into textbooks and teaching practices.

Homi Bhabha Curriculum is basically an attempt to close this gap as much as possible. It is not conceived to be a revolutionary curriculum. The broad aims of the curriculum are much the same as those articulated in countless reports and articles of different education departments and agencies. The idea is not to produce a fanciful, 'museum-piece' curriculum that nobody would adopt, but to attempt to discover a sound and wholesome curriculum that is practical to implement in our school system. 'Practical' is, however, not to be regarded as a euphemism for the status quo. As the users will find out, the alternative textbooks of the Homi Bhabha Curriculum are full of radical unconventional ideas that we believe are both urgent, necessary and, given enough efforts, feasible. But rather than describe here what we believe to be these innovative aspects, we leave the users, students and teachers, to find and experience them. In the simplest and most favourable situations, devising a curriculum and translating it into books, laboratories and teacher manuals is a daunting task. In the complex parameters and constraints that govern our country's educational system, the task is formidable. Only time will tell if and to what extent the Homi Bhabha Curriculum is an effort in the right direction.

Arvind Kumar

PRFFACE TO SMALL SCIENCE: CLASS IV

The series of students' and teachers' books for the Homi Bhabha Curriculum are the outcome of more than two decades of research and field experience at the Homi Bhabha Centre for Science Education (HBCSE). During these years, several projects have been undertaken to study problems related to pedagogy, students' conceptions, communication in the classroom, text and picture comprehension and cross-cultural issues in science learning. All the members of HBCSE, past and present, have in some way contributed to this curriculum.

Primary school students, particularly in rural areas, have rich, interactive experiences of the natural world. But lacking systematisation and clear expression, their observations and skills do not contribute to school learning. Urban students from literate homes, on the other hand, are often encouraged to ignore their natural surroundings, and to concentrate on bookish learning. As a result, most students miss out on the combination of systematic observation, analysis and articulation, which is essential for science learning.

The aim of the Homi Bhabha primary science curriculum is to engage students and teachers together in a joyful and meaningful learning experience. The curriculum is built out of simple, thematically organised, activities and exercises. The TextBook, WorkBook and Teacher's Book for each Class are meant to promote active learning in every sense. To use these books, students must get out of the mind-set of copying the correct answers from the blackboard or from other students. Small Science should not be just read, it should be done.

Any good curriculum should be dynamic, ready to face criticism and to change according to the needs of students and teachers. Please do send us your ideas and suggestions for improvement.

Jayashree Ramadas jram@hbcse.tifr.res.in

ACKNOWLEDGEMENTS

I would like to thank:

Arvind Kumar who initiated the Homi Bhabha Curriculum and gave constant encouragement and guidance

Suchitra Varde who conscientiously tested the activities and exercises

The principals, staff and students of the Children's Aid Society, Nutan Vidya Mandir and the Atomic Energy Central Schools, Mumbai, and Vivek High School, Chandigarh, who enthusiastically participated in the trials

Karen Haydock who did the design and illustrations, contributed many good ideas and gave interesting feedback from the classroom

Children of Village Titaram, Kaithal Dist., Haryana, the Atomic Energy Central Schools, Mumbai, and Vivek High School, Chandigarh, who contributed some wonderful pictures

Members of HBCSE who clarified my doubts: Anand Ghaisas, Ashwini Kanhere, R. S. Korgaonkar, Rekha Vartak, Sandhya Thulasidas, Savita Ladage, V. G. Gambhir and V. N. Purohit; and those who also gave valuable suggestions on the draft versions: Bakhtavar Mahajan, Chitra Natarajan, G. Nagarjuna, Jyotsna Vijapurkar, K. Subramaniam, Poornima Burte and Sugra Chunawala

P. R. Fadnavis, C. S. Pawar and others who provided administrative support and N. S. Thigale and G. Mestry who helped in photocopying

Ravindra Patwardhan, Fouzia Dohadwala and Gouri Patil who helped in the final stages of production

M. M. Johri and K. S. Krishnan of the Tata Institute of Fundamental Research (TIFR),
B. Shyamala of the Colaba Observatory, S. K. Dash of the Indian Institute of Technology, Delhi,
V. Abraham, formerly of the Bhabha Atomic Research Centre, I. Kehimkar of the Bombay
Natural History Society and G. V. Joshi of New English School, Murbad, who gave expert advice

The School of Mathematics, TIFR, who allowed use of their computer facilities

My daughter Rohini, son Harishchandra and many good friends, who were so supportive during some difficult times.

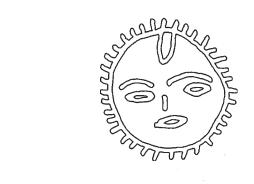
Jayashree Ramadas

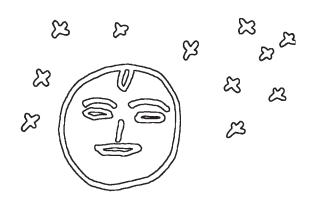
CONTENTS

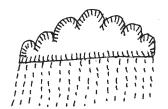
	General Preface	iii
	Preface to Class IV	iv
	Acknowledgemenr	sv
	UNIT 1	
	SKY AND W	VEATHER
Control of the second s	Chapter 1	Sun, wind, clouds and rain3
	Chapter 2	Day sky, night sky36
	UNIT 2 AIR	
	Chapter 3	Fun with air!49
	Chapter 4	What's in the air?64

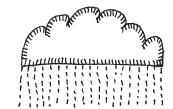
UNIT 3 WATER

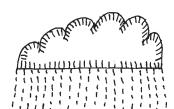
335	Chapter 5	Fun with water!
	Chapter 6	Water and life93
	Chapter 7	Water and us102
	UNIT 4 FOOD	
THE STATE OF THE S	Chapter 8	Where our food comes from117
	Chapter 9	Food in our bodies137
8	Chapter 10	What is thrown out148

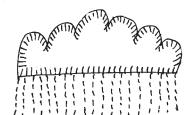


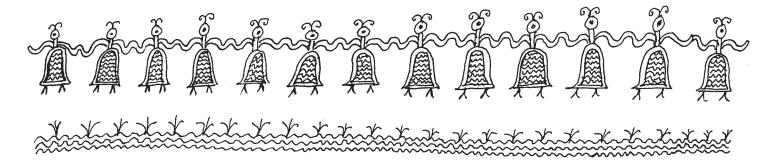












SKY AND WEATHER

Chapter 1

Sun, wind, clouds and rain

Chapter 2

Day sky, night sky

Assessment Sheet: Unit 1

Category	Score	Comments
Observation		
Understanding		
Oral Language (Talking)		
Written Language (Writing)		
Design Skills		
Quantitative Skills	0	
Enthusiasm in doing activiti	es	
Patience and concentration		
Independent thinking		
Co-operation with other stud	dents	
Completion of home assignr	ments	





Sun, Wind, Clouds and Rain

Watching the weather

- 1. The weather (TextBook page 4)
- a. Look out of the window and answer these four questions:
 - (i) Is the sky cloudy or clear?.....
 - (ii) Is it warm or cold?
 - (iii) Is it windy or calm?.....
- (iv) Is it rainy or dry?.....

Anything else you want to say about the weather today?

- b. Title of your story:
- 2. Weather calendar (TB p. 4)
- a. Here's how to fill in the weather calendar for the month:
 - (i) Write the year and the month.
 - (ii) Fill in the dates for this month.
- b. Describe today's weather. Use words like:

Was yesterday's weather similar or different?

sunny	no clouds	a few white clouds
many clouds	overcast	sky covered with gray clouds
no rain	some rain	heavy rain
warm	cool	thunder-storm
windy	calm	drizzling rain
humid	dry	extremely hot

Note any special event (such as a holiday, festival, or a school function)

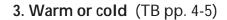
Thu		School function! partly cloudy, warm
IIIG		not windy
	2pm	clear, hot, humid

An example of how to fill in one day's data

Monthly Weath	er Calenda	ar (TB p.4)	Month	 Year
	Sun		(
	Mon			
	Tue		(
	Wed		()
	Thu		(
	Fri		(
	Sat		(

)	
))
))
)
))

Monthly Weather Calendar (TB p.4) Month Sun Mon Tue Wed Thu Fri Sat



Date	Time	Temperature

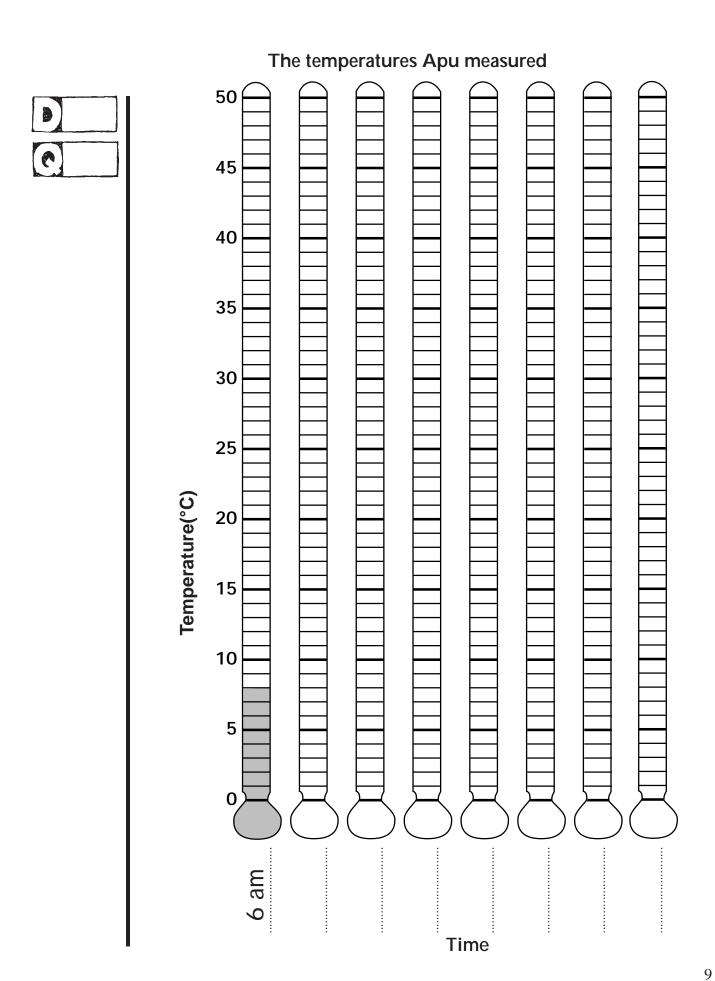
What is the unit of temperature?	
----------------------------------	--

On the thermometers in the graph show the temperatures that Apu measured. The thermometer for 6 am is already shaded for you.

<u>Time</u>	Temperature (degrees Celsius)
6:00 am	8°
9:00 am	12°
12:00 pm	20°
3:00 pm	24°
6:00 pm	21°
9:00 pm	18°
12:00 am	15°
3:00 am	11°

Did the temperature change through the day?
At what time was the maximum temperature measured?
At what time was the minimum temperature measured?

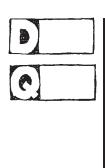


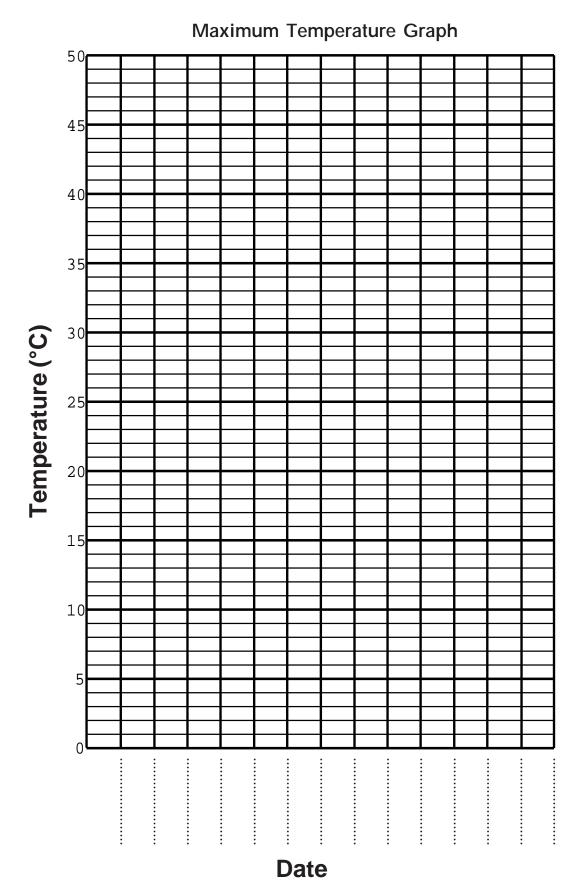


b. Fill this Table each day after listening to the the radio or TV weather report or by reading a newspaper. Remember that today's newspaper gives yesterday's temperature.

Date	Maximum Temperature

Shade the temperatures in the graph on the next page.





4. Which way the wind blows (TB pp. 5-6)	
a. Crush a small piece of dry leaf. Throw up the pieces and see which the wind is blowing.	way
b. A picture of the wind vane that I made:	
The arrow pointed:	
in the direction the wind was goingin the direction the wind was coming	
Show the direction of the wind in your picture above.	
The wind was coming from the(direction).	
5. The wind makes waves (TB p. 7)	
A picture of the waves I made:	



	6. Sky and clouds (TB p. 7)		
1 4			
a			
	Date and time:	Date and time:	
	Words to describe:	Words to describe:	
		the clouds	
	the sky	the sky	
	Date and time:	Date and time:	
	Words to describe:	Words to describe:	
		the clouds	
		the sky	

Think! Think!	
What do you think clouds are made of?	
What makes clouds move in the sky?	D
7. Measure the rain (TB p. 8)	0
a. A picture of our rain gauge:	

Date and time when our rain gauge was put outside.

Date/Time	Water level (mm)						

	e the	grapi	1 10 31	iov ti	ne da		Gra	i rain	gaug	je.	
110 100 100 100 100 100 100 100 100 100											
Did t	he wa	ater le	vel r	emain		Date nange					

Was the change in water level about the same in every group's container?	
8. Humid or dry? (TB p. 9)	
a. Tick one:	
☐ I think these days were humid (write the dates):	
☐ I did not find any humid days.	
b . Tick one:	
☐ I think these days were dry (write the dates):	
☐ I did not find any dry days.	
Exercises	

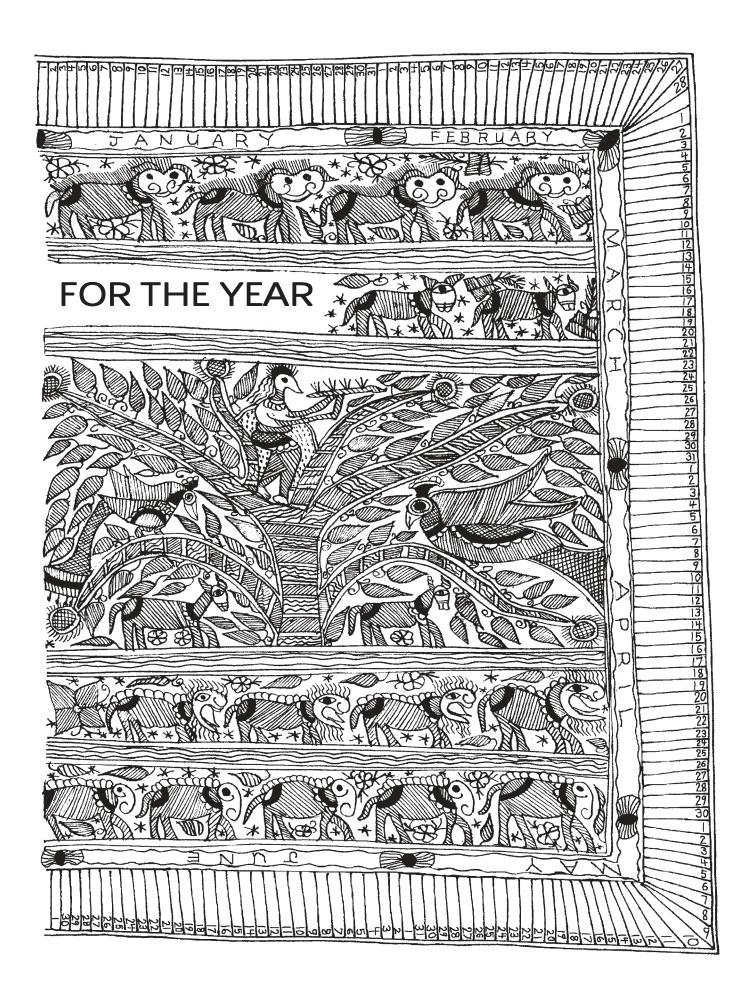
Name and draw

1. Rain



2. Colours of the rainbow

07 61 81 19 19 10 10 10 **NWeather** 8 1 9 G F E I I I Colour the hot days red and the cold days blue. Colour days that are neither very hot nor very cold green. Make rainy days striped. 19 19 F C



Interesting questions								
Answer questions 1-4 at the end of the year, after completing the chart on pages 18-19.								
1. In which months of the year do you have winter?								
2. In which months of the y	2. In which months of the year do you have summer?							
3. In which months of the y	year do you have a rainy se	ason?						
4. In which months do you	ı have school sports, outing	s or picnics? Why?						
5. List some flowers, fruits in winter (rabi).	, and vegetables that we ge	t in summer (kharif) and						
Summer (kharif)								
Months:								
Flowers:								
Fruits:								
Vegetables:								





Winter (rabi)

Months:	
Flowers:	
Fruits:	
Vegetables:	

7. Which of these things happen when the temperature is low? (tick) butter is soft you feel cold you sweat a lot coconut oil becomes solid you wear thin clothes 8. Write down some things that happen on a very hot day.
 □ butter is soft □ you feel cold □ you sweat a lot □ coconut oil becomes solid □ you wear thin clothes
 □ butter is soft □ you feel cold □ you sweat a lot □ coconut oil becomes solid □ you wear thin clothes
 □ butter is soft □ you feel cold □ you sweat a lot □ coconut oil becomes solid □ you wear thin clothes
 □ butter is soft □ you feel cold □ you sweat a lot □ coconut oil becomes solid □ you wear thin clothes
 □ butter is soft □ you feel cold □ you sweat a lot □ coconut oil becomes solid □ you wear thin clothes
 □ butter is soft □ you feel cold □ you sweat a lot □ coconut oil becomes solid □ you wear thin clothes
 □ you feel cold □ you sweat a lot □ coconut oil becomes solid □ you wear thin clothes
□ you sweat a lot□ coconut oil becomes solid□ you wear thin clothes
□ coconut oil becomes solid□ you wear thin clothes
☐ you wear thin clothes
8. Write down some things that happen on a very hot day.
9. Write down some things that happen on a rainy day.

10. Which of these things would you not do on a rainy day? (tick)
☐ swim in a river
☐ graze the cattle
☐ write a letter
☐ play outdoors
☐ do some cooking
☐ wash a lot of clothes
11. Which of these things happen best on a windy day? (tick)
☐ boats sail
☐ rivers flow to the sea
☐ windmills work
☐ cloths dry faster
☐ birds fly
12. Name some ways in which wind is useful to us.
13. Name some things that happen in a storm.

14. In what kind of weather is it dangerous for fishermen to go fishing in the	
sea?	
	1
Classroom discussion	
1. Which time of the year do you think has the best weather? Why do you	
think so?	
	1
	1
	1
	1
	1
	1
2. How do different animals behave on a very hot or a very cold day? Are they	
quiet or active? Do they look for shelter?	
Hot day:	
	1
	1
	1
	1
	1
	1
Cold day:	

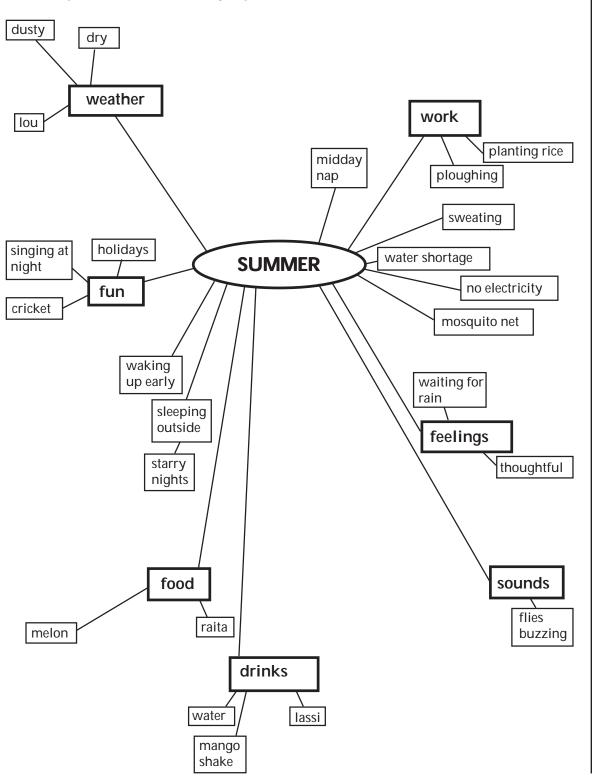


	nat is a flood? s in other plac the reasons fo				s take place?
•••••					
	_	_		arents experie	
you l	eard of droug	ghts in othe	r places? Wh	arents experience and where drought? Wh	e did these d
you l	eard of droug	ghts in othe	r places? Wh	nen and where	e did these d
you l	eard of droug	ghts in othe	r places? Wh	nen and where	e did these d
you l	eard of droug	ghts in othe	r places? Wh	nen and where	e did these d
you l	eard of droug	ghts in othe	r places? Wh	nen and where	e did these d
you I take	eard of droug	ghts in othe	r places? What is the	nen and where	e did these d at happened

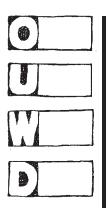
What's the same? What's different?

1. Complete this chart for your own kind of summer.

Make any additions and changes you want.







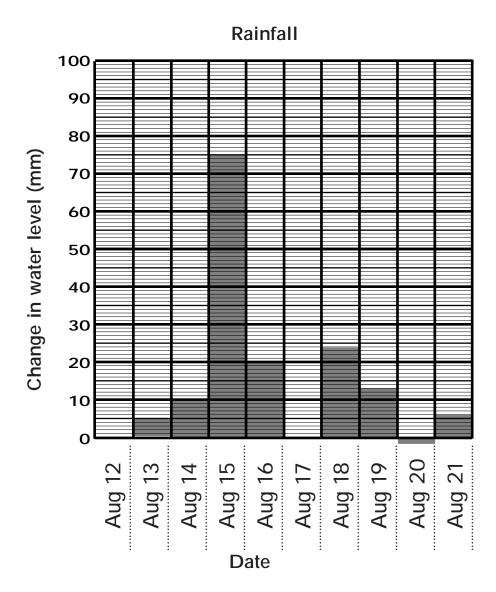
Now make your own chart for winter .



Talk and wr	ite					
1. Write your own poems or songs about any of the seasons. You need not						ot
make your p	oems rhyme.					
	a thunderstorr bout the thun	-	iend. Ans	wer the questi	ons which y	our
Play with we	ords					
1. Words wh	nich mean 'wi	nd':				
Arrange the	following wo	rds from w	eak wind t	o strong winc	d:	
gale	cyclone	breeze	storm			
2. Find word	ds for these					
Light, fine ra	infall					
Fluffy frozer	water from t	he sky				
The rainy se	ason					
The sound w	ith lightning.					

Match each day with wRainy day	No shadows		
Hot day			
Cloudy day	You cannot see very far Clothes take long to dry		
Foggy day	Ghee flows easily		
	Chec news cashy		
Ask and find out	the of the year de formers covered 2 M/by 2		
	hs of the year do farmers sow seeds? Why? her is usually like on any five festival days		
celebrated in your area.	inc. is assuing the origing five restrict days		
3. What is lou (l) and aandhi (A)? Find out words in your own language to describe unusual weather conditions.			
Figure it out			
other narrow. Both have utogether out in the rain. W	containers, one wide and the upright sides. You keep them ould the height of the water s be the same or different?		
• •	s have water up to a height of amount of water in them be		
	dentical containers: one on the terrace and one in the collect the same or different amounts of water?		

4. Mini and her friend Varsha set up their rain gauge on August 11 and measured the rainfall for ten days. They got this graph.



Use the graph to answer these questions:
a. How much change in water level did they find on Aug 12?
b. How much rain did they record on Aug 13?
c. How much rain did they record on Aug 14?
d. On which days did they record 24 mm of rain?
e. On which days did they record the most rain?
f. On which days did they record the least rain, or none at all?
g. What do you think happened on Aug 20?
h. How much did it rain between Aug 11 and Aug 21?
i. On which days did they record 6 mm of rain?
5. The weather chart - see next page
Show and tell
 Bring something that you can find only during a particular season or time of year. Show it to the class and tell about it.
What I bought:
Ask a question
Ask questions about the weather.
My questions:
iviy questions.

5. Mini, Varsha and Khurshid made the weather calendar on page 33 for two weeks in August. Then they made this diagram to show which days had sunshine and which days did not.

Cut out the date boxes in the calendar.

a. Sort these date boxes into two piles: dates with sunshine and dates with no sunshine.

15 SUNSHINE
18 12 14
16 13 17
22 25
24 25
20 19 23



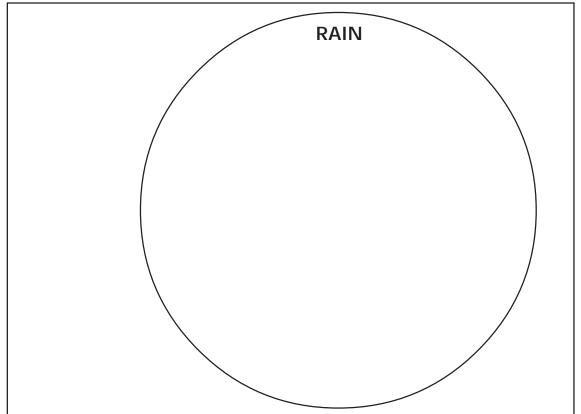


Did Mini and her friends make any mistakes in this diagram?

Why did they put 18 and 23 outside the circle?.....

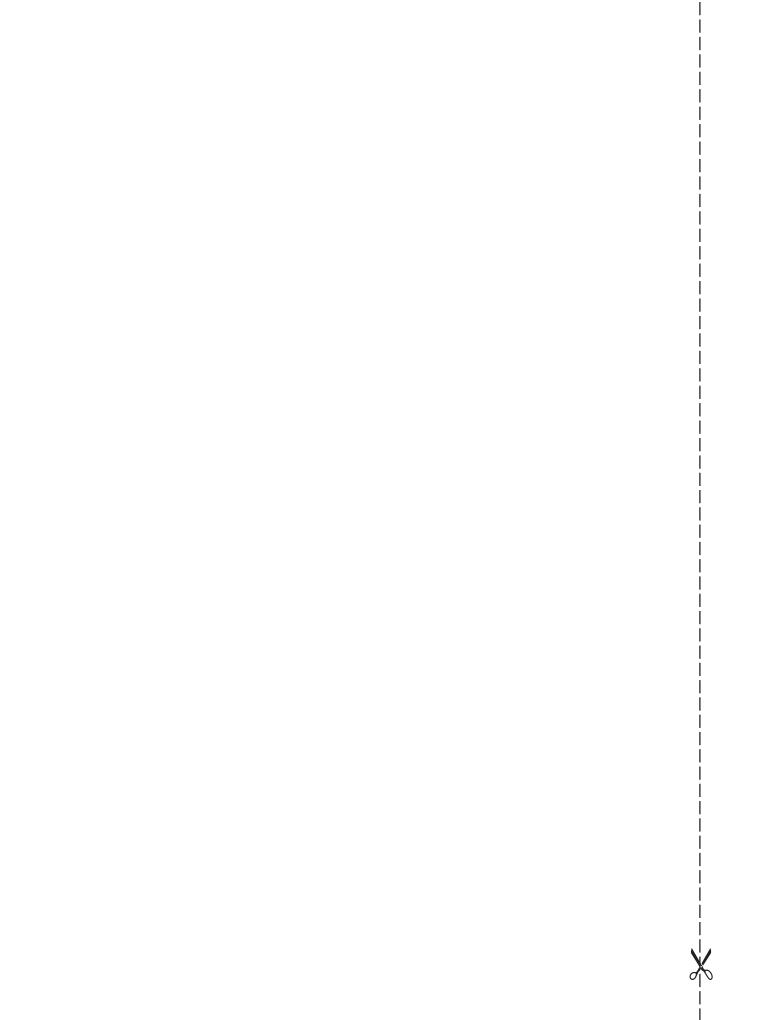
b. Now sort the date boxes into these two piles: dates with rain and dates without rain.

In the following diagram, write the dates with rain inside the circle. Write the dates without rain outside the circle.



Sun (12) (19) (19) (19) (19)	
Sun sunny 8-11 rain	
no sun	
13 (20)	
Mon sunny all day cloudy all day	
14 21	
Tue 9am sunny 9am sunny	
3pm rain 3pm rain	
15 No school (22)	
Wed no sun cloudy	
rained all day 9pm rain	
16 23	
Thu sunny, hot no rain	
all day cloudy	
17 lost my chappal! (24)flew kites	
Fri 7am rainy bright sun	
2pm sun came out windy	
(18) (25)	
Sat overcast rained while	
no rain the sun shone!	

X





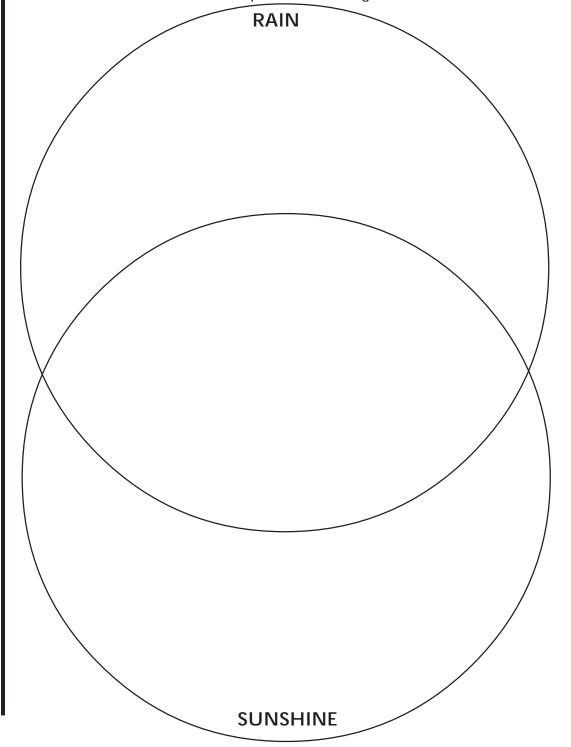




c. Take the date boxes that have **rain** and sort them into two piles: **dates with rain but no sunshine** and **dates with both rain and sunshine**.

Now think! Where will you write these dates in the following diagram?

d. Now take the date boxes that have **no rain** and sort them into two piles: **dates with sunshine and no rain**, and **dates without sunshine or rain**. Put all these dates in the correct parts of this diagram.





Watching the sky

1. Here comes the sun! (TextBook p. 15)	
---	--

a.	In which direction did the sun rise?
In	which direction did it set?

b. Times of sunrise and sunset

One week in summer

Date	Time of sunrise	Time of sunset

One week in winter

Date	Date Time of sunrise Time of	

Did the sun rise at the same time every day?
Did it set at the same time?
What can you say about the times of sunrise and sunset in summer and in winter?

•	
0	

In these circles shade summer and one day	in winter.	11 12am 1	2 3
Summer Date:	6 _{pm}	•	5
	10	1 12 _{pm} 11 11 12 _{am} 1	2 3
Winter Date:	6pm 5	•	5 7 8
What can you say abo	3 2	1 12 _{pm} 11 days in summer an	10

2.	Shadow	play	(ТВ р.	15)
----	--------	------	--------	-----

a. I	How	does	my	shadow	change?
------	-----	------	----	--------	---------

Date	

Time	Length of my shadow

D	

0

b. How tall is your matchstick?

After marking the shadows, remove the matchstick and stick your shadow graph here.

Time	Length of matchstic	Length of matchstick shadow				
When did your m	atchstick give the longest s	shadow?				
_		shadow?				
-	_					
_	_	th as your matchstick?				
_	_	jth:				
Did the other stud	lents' matchsticks give the	same length shadows as yours				
f not, why not?						
	ows with					
. We made shade						
e. We made shade						

B. Moon watch (TB p. 16)							
a. Does th	a. Does the moon also rise and set?						
In which d	lirection did	the moon	rise?	In which o	direction di	d it set?	
	o. In the following calendar, fill the dates in the squares. Draw the shape of the moon on each day.						
		1onth:					
Sun	Mon	Tue	Wed	Thu	Fri	Sat	

On which dates did you see a crescent moon?
On which dates did you see a half moon?
On which dates did you see a gibbous moon?
On which dates did you see a full moon?
Did you ever see the moon during the daytime? Draw its shape.
On which dates did you not see the moon at all? Why?
4. Starry night (TB pp. 16-18)
a. Some constellations that I found in the sky:
b. What happened to a constellation after one hour?
c. The stars I found:
d. The planets I found:
Think! Think! A lighted lamp looks brighter at night than it does during the day. Mini said, "Lamps give more light in the night". What do you think?
Apu thinks that there are stars in the sky even during daytime, but you can not see them. What do you think?

Exercises

Name and draw

Draw the shape of the moon on some festival days, for example:
 Buddha Purnima, Dussera (Vijaya Dashmi), Bakri Id, Guru Parb (Guru Nanak Jayanti), Diwali.

What's the same? What's different?

- 1. Give two similarities and two differences between:
- a. The sun and the moon

(ii)

•
c. The moon when it is low and when it is high in the sky
The low moon and the high moon are similar because
(i)
(ii)
The low moon and the high moon are different because
(i)
(ii)
d. The suprise and the supret are similar because
The sunrise and the sunset are similar because
(i)
(ii) The sunrise and the sunset are different because
(i) (ii)
Talk and write
 Remember some poems or songs about the moon, sun or stars. Make up some new ones.
Some new ones.

Ask and find out

- 1. In the **Name and draw** exercise you have drawn the shape of the moon on some festival days. Find out about other special days that are celebrated on particular days of the moon.
- 2. Find out some stories about the constellations.

Figure it out

1. Match the happenings on the left with the two seasons on the right:

Long day, short night

Short day, long night Winter

The sun rises early

The sun rises late Summer

The sun sets early
The sun sets late

2. Match the events on the left with the times on the right:

The full moon rises Around sunrise

The full moon sets

A crescent moon rises Around sunset

A crescent moon sets

3. Match the events on the left with the two directions on the right:

The sun rises

The sun sets

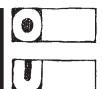
The moon rises East

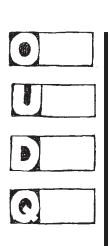
The moon sets

A full moon soon after sunset West

A full moon just before sunrise

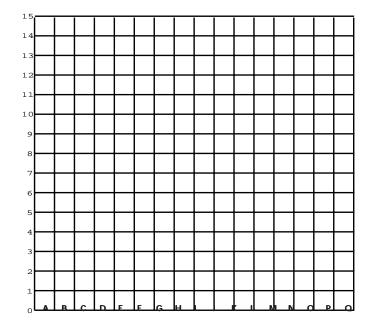
A crescent moon soon after sunset





4. Draw a star at each of the following intersections on this graph.

- (A, 0)
- (C, 5)
- (F, 6)
- (J, 9)
- (N, 8)
- (Q, 13)
- (N, 15)

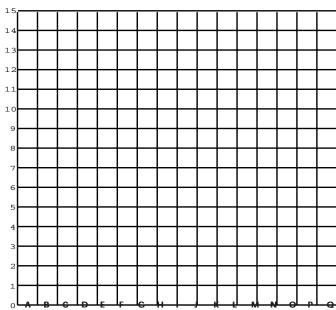


Look at the sky pictures in your TextBook on page 17 to find which constellation you have made.

Write the name of the constellation here:

Here is another constellation. Draw a star at each of the following intersections on the graph.

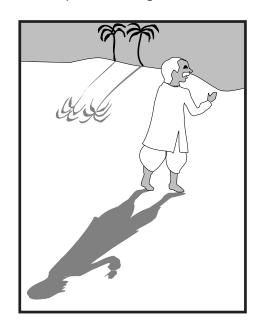
- (D, 4)
- (1, 2)
- (G, 7)
- (H, 12)
- (L, 10)
- (1, 7)
- (H, 7)



Write the name of this constellation here:

5. Circle the times of the day when each of these pictures might have been taken.



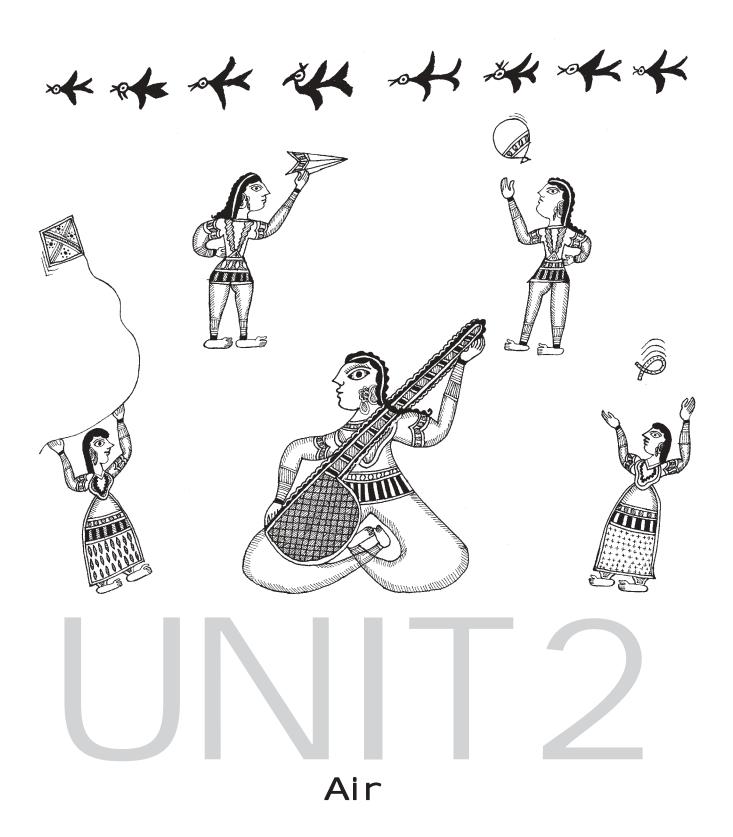


(i) 10:02 pm 8:20 am 1:07 pm 7:40 am 5:05 pm (ii) 11:00 pm 4:55 pm 3:30 am 12:36 pm 7:00 am

Ask a question

Ask questions about day and night. Think of how you will try to find the answers.

My questions:



Chapter 3

Chapter 4

Fun with air!

What's in the air?

Assessment Sheet: Unit 2

Category	Score	Comments
Observation		
Understanding		
Oral Language (Talking)		
Written Language (Writing)		
Design Skills		
Quantitative Skills	0	
Enthusiasm in doing activiti	es	
Patience and concentration		
Independent thinking		
Co-operation with other stud	lents	
Completion of home assignr	ments	



Air all around!	` کم	Fun with
1. Air inside everything (TextBook page 24)	
a. Pictures of the bag:	1	
with mouth open	with m	outh closed
What is inside the bag?		
b. What happened when y		
c. Draw a picture of your	three glasses. Shade wl	nere there is air.
glass 1:	glass 2:	glass 3:
Does the air in the glasses	stay inside them alway	s?

Does air from the outside get in?

Think! Think!

Why is it easy to squeeze the bag when its mouth is open, but difficult when its mouth is closed?.....

What made the 'phutt' sound?
Name some other ways of making a sudden sound.
Suppose the three glasses were filled with water instead of air. From which of
the glasses would the water flow out?
What is the difference between the way water flows and the way air flows?
2. You can squeeze air (TB p. 25)
What happened when you closed the mouth of the pump and pushed the piston?
What happened when you released the piston?
Think! Think!
What if balloons, footballs, cycle tyres were filled with water, sand, or crumpled paper?
3. Air moves and pushes things (TB p. 26)
a. Things I have seen moving in the wind
b. What I felt while running with a large open newspaper (or a sheet of cardboard).
c. What happened when you blew air on the wind wheel?

Seed Guess Will it blow easily? Did it blow easily Some pictures of seeds that blew easily. Tell why you think they blew Picture of seed Why it blew easily	Some pictures of seeds that blew easily. Tell why you think they blew Picture of seed Why it blew easily	a. Which seeds are eas	ried easily by air (TB p. 27 ily carried by air?)
Some pictures of seeds that blew easily. Tell why you think they blew	Some pictures of seeds that blew easily. Tell why you think they blew Picture of seed Why it blew easily	Seed	Guess	Test
	Picture of seed Why it blew easily		Will it blow easily?	Did it blow easily
	Picture of seed Why it blew easily			
	icture of seed Why it blew easily			
	cicture of seed Why it blew easily			
	Picture of seed Why it blew easily			
		Picture of seed W	/hy it blew easily	

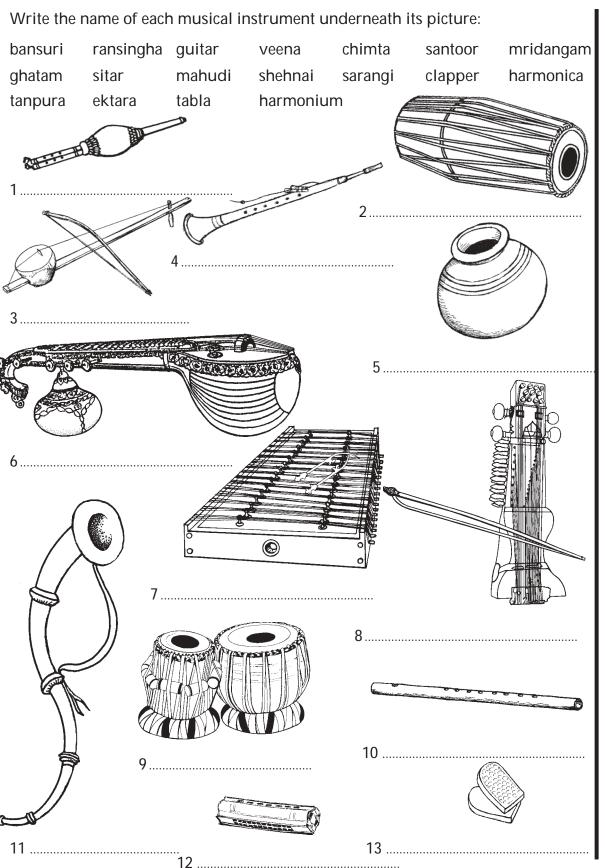
What are the differences did not?		blew easily and those that
b . What could you stick t	o your seed to make it bl	ow away with the wind?
A picture of my flying se	ed:	
c. The birds I have watch	ed:	
flying		
diving		
landing		
d. How far do they go?		
Name of paper shape	Guess How far will it go?	Test How far did it go?
unfolded paper		
loosely crumpled paper		
tightly crumpled paper		
e. Did you make a spinni		

Think! Think! What happens if seeds of plants do not blow far away, but fall on the groun
close to the plant?
Are there any similarities between the shapes of birds, fish and aeroplanes?
5. Air makes bubbles (TB p. 29) a. What is the difference between bubbles in plain water and those in soapy water?
I got the biggest bubbles with: (Which kind of soap? How much of it in one glass of water?)
Guess what is inside all these bubbles!

6.	Air makes sound (TB p. 29)
a.	Which parts of your body did you use to make sounds?
So	t sounds
Lo	ud sounds
b.	Did you make a paper whistle? Yes / No
7.	Air makes music (TB pp. 29-31)
a.	I can sing a higher pitch note I can sing a lower pitch note
b.	The pitch of the sound is higher in (tick one):
	☐ the empty bottle
	☐ the bottle with water
	A picture of the bottles making a musical scale (label the one that gives the lowest pitch, and the one that gives the lowest pitch):

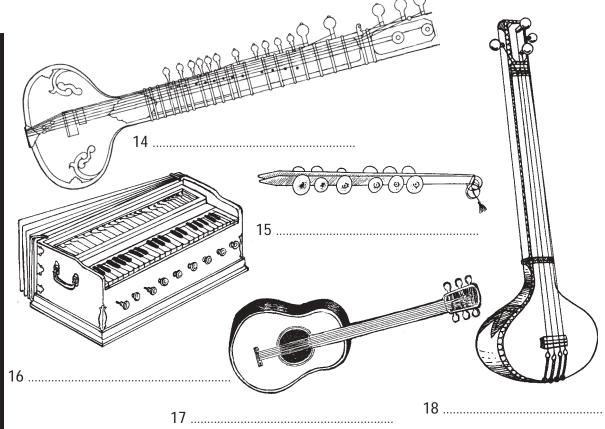
- **d.** Stretch a torn balloon over the mouth of an empty tin. Tap, rub or pluck it to make different sounds.
- e. Does a stretched rubber band make a louder sound if it is put around an empty box? Yes / No

f. Some musical instruments I have seen or heard:
g. A picture of the musical instrument I made

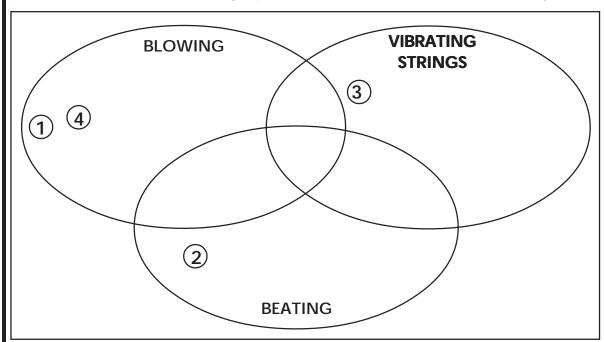








Sort all these instruments into the groups shown in the diagram. Write each instrument's number in the right place. The first four have been done for you.



Is there any instrument that can go in more than one group? Shade the parts of these instruments which hold air.

Exercises

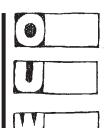
Name and draw

1. Something moving in the air (draw it so that people will know it is moving):

2. Imagine a musical instrument that will play when the wind blows on it:

Interesting questions	
When you pour water on dry so	oil, do you see bubbles? Why?
2. Name some places where you h	nave seen bubbles
3. On a calm day, is it easier to rur umbrella?	n with an open umbrella or with a closed
4. Suppose you throw these two bearing there is no wind. Circle the balloc will travel further.	~ 9 1 //
5. You have two sheets of paper. the other one is crumpled into a bawhich sheet will travel further?	\
6. Name three seeds that are carrie	ed by the wind
Classroom discussion	
1. Tick the places in which there know this.	is there air. Tell your teacher how you
☐ In a closed cupboard	☐ Inside your body
☐ In the soil☐ In water	☐ Inside a brick
	? Which does not even have air? Make y

What's the same? What's different? 1. Give two similarities and two differences between: a. Air and water Air and water are similar because (i)
a. Air and water Air and water are similar because
Air and water are similar because
(i)
(ii)
Air and water are different because
(i)
(ii)
b. Air and mud
Air and mud are similar because
(i)
(ii)
Air and mud are different because
(i)
(ii)
2. Look at these sets of things:
a. balloon, bubble, football, cricket ball
The cricket ball is different from the rest because
b. vulture, butterfly, aeroplane, frog
The frog is different from the rest because









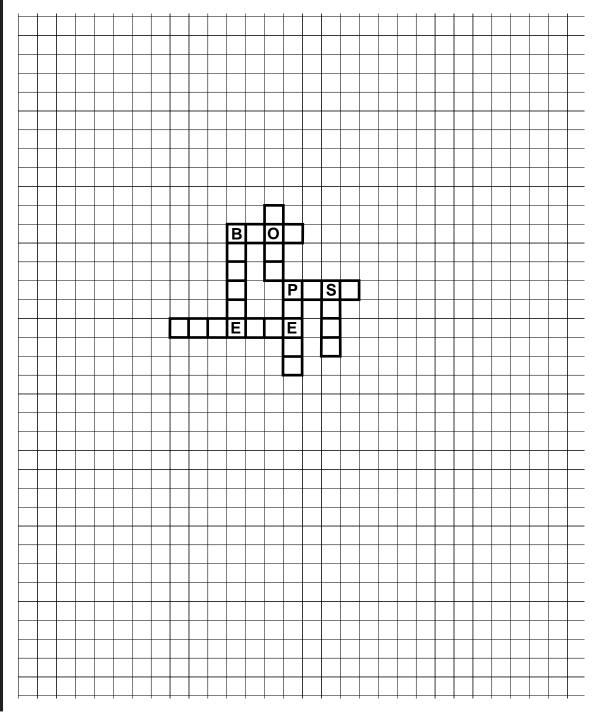
Play with words

1. What can air do? It can

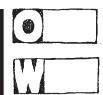
move, push, press, squeeze, blow, bubble, sing ...

Write all these words in the crossword puzzle. What else can air do?

Add as many more words to the crossword as you can.



2. My poe	m about air	-			
3. Here are some 'sound words'. Think of some others. Try to make these sounds:					
bang!,	trrnng,	squeak, h	mmm, plop,	sshrookh	
Figure it out					
your body		you use air tha	_	blowing air from Ir body. Separate t	
flute		tabla	shehnai	guitar	
veena	1	harmonium	sarangi	whistle	
		Blow air f inside your		Use air that is your boo	- 1



	Ask a question Ask questions about air. Think of how you will try to find the answers. My questions:
,	

CHAPTER 4





Something in the air

- Air is made of different kinds of gases (TextBook page 35)
 Air is made of different kinds of gases. Look at the picture on page 35 in the TextBook to complete these sentences:
 Air consists mainly of which kind of gas?
 What is the second most abundant kind of gas in air?

b. A picture of our soda bottle with the balloon:

2. Living things use gases (TB p. 36)

a. Animals and plants use up	from the air and
give out	
Plants make moretha	an they use up.

1st try	2nd try	3rd try	4th try	5th tr
Think! Thin	 k!			
All animals r	need oxygen. H	ow do fish get	oxygen?	
	our bodies (TB			
a. This is how	v long I could k	eep blowing oi 3rd try		5th tr
b. What did y	you feel when y	ou released the	e mouth of the	balloon?
	hear?			
What did you	hear?			
What did you Where did the	hear?e air in the balloo	on go?		
What did you Where did the	hear?e air in the balloo	on go?		
What did you Where did the Think! Think Where was th	hear?e air in the balloo	ent into the ballo	oon?	

a.	Where do different gases come from? (TB pp. 37-38) Living plants make gas. Living animals make gas. Some rotting things that give off gases:
Ho	ow did you guess that these gases are in the air?
Rc	tting things give off this gas that you cannot smell:
	I can recognise these places by their smell:
 Th	ings I smelt in the kitchen:
	What fuel do you use in your kitchen?
	melt the matchstick smoke after seconds. Some ways poisonous gases are made:
	ke a walk around your home or school. Find ways that poisonous gases ght be getting into your air.

What I found in the dust		
c. Find out how dusty the	air is.	
Place where we hung the card	After how many days	What we foun
Why do the cards look like	e this?	
6. Air carries things that y Which is smaller, a grain o	•	
Which is smaller: one of th	ne sore throat bacteri	ia, or a cold virus?
Tall barress b of the fallow	ving could get into t	he air:
dust		

pollen	 	 	
•			
bacteria	 	 	
viruses	 	 	

Exercises

Name and draw

1. Some things that smell bad

2. Some things that smell good

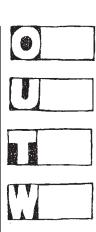
2. Tick the action(s) for	which you need to take o	Yoon broaths:
running walking swimming	eating shouting writing	whistling singing
_	our things they get covere	ed with dust. Why?
4. Name some ways tha	It dust gets into the air.	
5. Name some ways tha	at smoke and poisonous	gases get into the air.
6. Is there water in the a	nir? How do you know?.	
7. Tick the gas(es) that y	you can smell:	
☐ nitrogen		
□ oxygen□ carbon dioxide		
_ □ water vapour		
☐ kerosene vapou		
	pages 40-41 in your Tex	tBook guess which diseas
9. Arrange these microb	oes from largest to smalle	est:
sore throat bacterium	cold virus polio virus	mould, influenza virus

What's the same? What's different?

For each event listed below, put a tick if any of these polluting things are getting into the air.

Event	Poisonous gases	Dust	Smoke	Microbes
a. a bullock cart goes down a dusty road				
b. a truck goes down a a dusty road				
c. a person spits				
d. a tree grows				

2. F	ind the odd	d one out:				
a.	air,	water,	food,	sweets		
			is the odd	d one out beca	ause	
b.	oxygen,	carbor	ı dioxide,	water,	water vapour	
			is the odd	d one out beca	ause	
C.	gases,	dust,	rabbits,	smoke,	tiny living thir	gs
			are the o	dd ones out b	ecause	
Tall	c and write	e				
1. T	he air I bre	athe				
so?		•	•	•	or dirty? Why d n? What can you	•

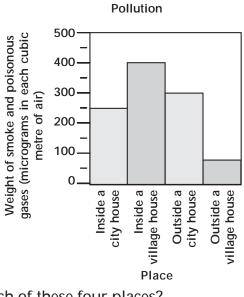


Play with words 1. Find out what these smelleft with the things on the ri	I words mean. Then match the smell words on tight.
1. Find out what these smel	ight.
1. Find out what these smel	
1. Find out what these smel left with the things on the ri	ight. cooked cauliflower left for two da
1. Find out what these smel left with the things on the ri	ight. cooked cauliflower left for two da pickle
1. Find out what these smelleft with the things on the rise	ight. cooked cauliflower left for two da pickle mango
1. Find out what these smelleft with the things on the rise sweet rotten rancid	cooked cauliflower left for two da pickle mango a rose burning rubber old cooking oil
1. Find out what these smelleft with the things on the rise sweet rotten rancid pungent	cooked cauliflower left for two da pickle mango a rose burning rubber

- Are there any disadvantages of burning waste?
- 2. Find out some other ways that poisonous gases get into the air.
- 3. Have you heard of people getting sick from gases and smoke?

Figure it out

1. Apu met a scientist who was measuring pollution. She showed him this graph of the amounts of pollution she had found in one city, and in a village some distance away.



1	

What could be the reasons for pollution in each of these four places?
Which places had the cleanest air? Can you explain why?
Which was more polluted, the village home or the city home? Can you explain
why?
Ask a question
Ask questions about different gases in the air. Think of how you will try to find the answers.



WATER

Chapter 5

Fun with water!

Chapter 6

Water and life

Chapter 7

Water and us

Assessment Sheet: Unit 3

Category	Score	Comments
Observation		
Understanding		
Oral Language (Talking)		
Written Language (Writing)		
Design Skills		
Quantitative Skills	0	
Enthusiasm in doing activiti	es	
Patience and concentration		
Independent thinking		
Co-operation with other stud	lents	
Completion of home assignr	ments	



0	

1 - 1	
J 2004	

What water does	<i>\$</i> \$\$\$	Fun with water!
What water does	·))]]	
1. Water flows down (TextBook p	page 47)	
a. How I made water flow faster:		
b. I watched streams of water in the	nese places:	
Picture of a stream of water:		
Think! Think! Could you make a river flow in the	a annosita direc	tion? Evalain
Could you make a river now in the	e opposite direc	шон: Ехріані.

2. Water moves things (TB pp. 47-48)
a. Leaf in a stream of water
b. I made the water wheel with
When I held it under a stream of water it
3. Float, sink or mix? (TB pp. 48-49)
a.

Object	Will it float, sink or mix?					
	Guess	Test				

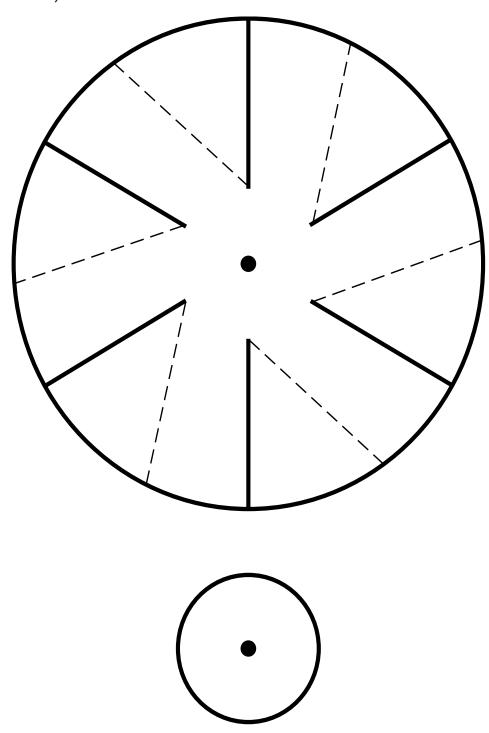
Carefully observe some floating things. Draw their pictures :





Water wheel pattern

Cut this page out of your book and use it to make your water wheel (see page 47 in your TextBook).





Liquid	Will it float, sin	ık or mix?		
	Guess	Tes		
		<u> </u>		
Things that floated in wa	ter:			
nings that sank in water	:			
Things that mixed in wate	er:			

Could you make a stone float on water? How?

Could you make an air-balloon sink in water? How?......

Think! Think!

4. Water dissolves things (TB p. 49)

Name	ı	Clear or		
	while stirring	after stirring	after 1 hour	Turbid?
Solids:				
1				
2				
3				
Liquids:				
1				
3				

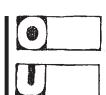
After drying solutions:

Name	Colour	Smell	What is left after drying?

5. Water climbs (TB p. 49)				
a. Materials that I dipped in wa				
What I observed:				
Why did the part of the hand	dkerchief outsid	e the water get v	vet?	
Which materials got wet quick	ly?			
Which ones got wet slowly?				

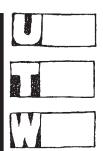
	1 0	m		2	cm		3	cm		enc
Guessed time										
Actual time										
c. What I observed	d in the	glass	s of m	ud:						
6. Liquid water to	urns ir	nto w	ater v	vapo	ur (T					
a. What I observed	d on the	e wet	slate:							
b. The height of v	vater ii	n t h e	two	glass	es (m	 m):				
Glass			Date							
covered glass										Г
open glass										
	Water heights:									
(mm) 50										
ت د (د										
lass										
Height of water in g										
± 30										
ate										
≥ 20										
ō 10										
g 10										
		#								
-										
				:	:	:			:	

7. Water vapour turns into liquid water (TB p. 50)
a. Cold drink bottle
What I observed outside the bottle:
After wiping the bottle did it get wet again?
Is this water coloured or sweet like the cold drink?
Where did the water come from?
Why do you think so?
b. Two glasses
Guess: Which of the glasses will get wet on the outside?
Observation: Which of the glasses got wet on the outside?
Is the cloth wet?
Do you think the water came from inside the glass or from outside?
Why do you think so?
8. Water to vapour (and back to water)! (TB p. 51)
a. Two containers
A picture of my two containers:



A picture of my experiment:
What I observed at the end of the day: Is the plastic sheet still dry? Are the stones in the inner container still dry? Guess why this might have happened.
b. Boiling water Where did the water on the lid come from? Is there now more, less or the same amount of water in the vessel?
Think! Think! When water turns into vapour, where does it go?
When a huge ocean is heated by the sun, about 10,000,000,000,000,000 litres of water turns into vapour. What would happen if this vapour became cold and turned back into water?

The water cycle The journey from number 1 to number 22 of the water molecule shown in the picture on page 52 in your TextBook: What might happen to the water molecule after number 22?



In these places the water molecule was a part of vapour:
In these places the water molecule was a part of liquid:
Exercises
Name and draw

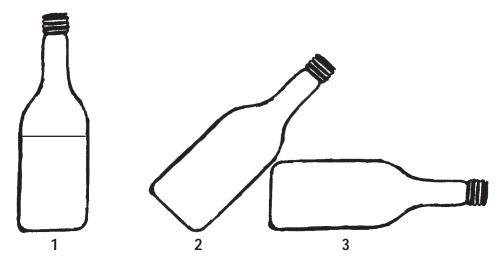
1. Flowing water

2. Water that is not flowing



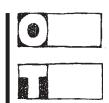


3. Suppose the second and third bottles have about the same amount of water as the first bottle does. Draw the water level in the second and third bottles.



1. Name some things that you ha	ve seen moving in a stream of water
2. What games can you play with w	vater?
3. Name three things which float Things that float	and three things which sink in water Things that sink
4. Name some solids, liquids and	d gases which dissolve in water.
5. Name some solids and liquids	which do not dissolve in water.
6. If you keep some water boiling Where does this water go?	g, after a while you see less water.
7. Where have you seen a mist? \	What was the mist made of?

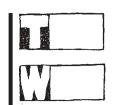
9. Suppose you keep three wet shirts out in the sun. One shirt is folded, the second is spread out and the third is kept inside a plastic bag.				
	ond and third?			
10. Guess which will evaporate				
a. hot water or cold water?				
b. water in a cup, or water pour	ed into a plate?			
c. water in a covered plate or in	an open plate?			
d. water in a windy place or ir	a calm place?			
11. Would you see drops of wa	ater on a warm soda bottle or a cold one?			
Classroom discussion				
	e from lower to higher level? Is this water er level, or from lower to higher?			
(a) waterfall	(b) river			
(c) evaporation	(d) rain			
(e) fountain	(f) a running tap			
(g) water pumped out from a we	2			
(h) water pumped into a high tal	nk			
(i)	(j)			
(k)	(1)			





			ning and w hy or why r	rashing things. Could we use any other
Wh	nat's the sa	me? What	's different?	?
1. (Give two si	milarities	and two dif	fferences between:
a. V	Vater and v	water vap	our	
Wa	ter and wa	iter vapou	r are simila	r because
(i)				
(ii)				
Wa	ter and wa	iter vapou	r are differe	ent because
(i)		•••••		
(ii)		•••••		
b. I	ce and wat	er		
Ice	and water	are simila	ır because	
(i)				
(ii)				
Ice	and water	are differ	ent because	
(i)				
(ii)				
2. F	ind the od	d one out	:	
a.	water,	salt,	diesel,	honey
		is diffe	rent from th	ne rest because
b.	stone.	giass,	plastic,	sugar

C.	wood,	iron,	butter,	oil	
		is diffe	rent from th	e rest because	
Tal	k and writ	te			
l pl	ayed in wa	ater on a ra	ainy day		
	y with wo				. : l
				n they describe air, water, or both a se is done for you.)	air and
					(air)
				lini splashed water on him.	
blo	W				(air)
					(water)
flov	N				(air)
					(water)
dri	p				(air)
					(water)

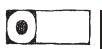


	run	(air)
		(water)
	fall	(air)
		(water)
	2. Make sentences using the action words below. Does your senter things moving on land, water or air? Join each sentence to one of the words: land, water or air.	
	roll	
	slide	land
	float	
	glide	water
	sail	
	fly	air
	dive	
	Ask and find out	
	1. What are 'water sports'? Have you played or watched any water Find out about some water sports played in different parts of India.	•
	2. Find out about any festival celebrations in which water is used.	
	Figure it out	

2. The weight of one litre of water is.....kg.

1. A picture of my one litre container:

3. How could Mini find out whether any part of the mud had dissolved in the water?
Show and tell
1. Find some water in your classroom. Imagine and tell a story about how this water might be part of a water cycle. (Where might this water have come from? Where could it go?)
Place where I found water in the classroom:
Ask a question
Ask questions about water. Think of how you will try to find the answers.
My questions:





Water for living

	1. Water in liv	ing thin	gs (TextBook pp. 57-59)	
i	a. What I obs	erved wh	nen I crushed the leaves and petals:	
ı	b . Cucumber	or brinja	al rubbed with salt:	
	Time	V	Vhat I observed	
(c. Flowers an	d leaves	kept in the sun:	
	How do they lo	ook?		
,	 Why do you th	ink they	look different now?	
	•		the leaves of a plant:	
	•			
	vvriat i obseiv	rea		
			Take Care!	
ı	The state of the s		When you pluck a leaf or a flower,	
ı		and the same of th	make sure there are many of the	
ı		3/1/8	same kind remaining. Do not spoil a	
ı		Y.077	garden or kill a plant.	
ı	M.	TO THE	Do not crush unfamiliar wild leaves	
ı	Calotropis	1 Still	or flowers. Some of them might harm you. The juice of the Calotropis	
	madar	(V)	plant is poisonous. Cowitch gives	
			you a very bad itch.	Cowitch
- 1	1	V1.		11

e. A picture of my two flowers after one has been kept in water and the other outside water for one day:	
Do the two flowers weigh the same? Which one weighs more?	
Why is there a difference?	
How many drops of water did you add for the flowers to balance? Guess how much water the flower lost in one day: f. What I observed with the flower kept in ink:	
What I observed on cutting the stem:	
g. Why I think animals may not have water in their bodies:	
Why I think animals do have water in their bodies:	
	1

2. Water inside our body (TB p. 59)
a. What did you see when you breathed out on a piece of glass?
Where did this water come from?
b . What I saw in the plastic bag tied around my hand:
Think! Think!
All living things have water in their bodies. They need water to live. But all of them do not drink water! Ants do not drink water, nor do the little grubs that live in grain. Where do you think they get water from?
3. Living things in water (TB p. 59)
a. Some animals that live in water:
b. Some water plants I saw
Plants completely under the water: (draw, label and describe)

Plants partly under water and partly out of the water: (draw, label and	
describe)	
	\. \. \.
c. Tiny living things I noticed in the pond water: (draw, label and describe)	

The diffe	erences I saw between water taken from different places:
What I no	oticed in the pond water after some days:
d. Some	microbes that live in pond water:
	need more water, some need less
	nings I have seen that need a lot of water:
Living th	nings I have seen that do not need a lot of water:
Exercise	es
Name an	nd draw

1. Juicy fruits and vegetables



- 2. A plant that has been given:
- a. no water

b. just enough water

c. too much water

Interesting questions 1. Suppose you put water in the ground around a plant. Does this water reach other parts of the plant?					
2. Does the water go out of the plant? What makes you think so?					
3. Which of these different parts of a plant have water in them? Why do you think so?					
Part Has water? Why I think so					
root					
orange juice	ec				

6.	. A sack full of wheat got wet in the rain. What will happen to it in a few days?	
7. 	Name some animals that can swim in water but stay alive even out of water.	
8. 	Name some animals that live in water and die if they come out of water.	
1.	lassroom discussion Could a rose plant grow in water like a lotus plant? Could it grow in a esert? What would happen to it?	
Τá	alk and write	
1.	One day when I got very thirsty	
•••		
•••		
•••		

•	Figure it out
	1. Why did the weight of the grass change? How much water did the fresh grass have?
<u> </u>	
	2. My weight iskg.
	The weight of the water in my body must be aboutkg.
	Show and tell
	1. Bring something that is not living but needs water to work properly. Show it to the class and tell about it.
	What I brought:
	Ask a question
	Ask questions related to water and living things. Think of how you will try to find out the answers.
	My questions:

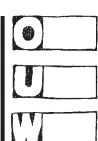
CHAPTER 7 Water and us

Water is precious!

- 1. Where did this water come from? (TextBook p. 65)
- a. Places I have seen water

Place	Where this water came from

b . Describe how the rain wa Make a drawing on page 108	iter comes to your home, so that you can drink it. B to show this.



2. How we use water (TB p. 65)
Answer each question for yourself. Then ask someone older than you how they
did these things when they were children. I asked:
How did you clean your teeth? (datun, toothpaste and brush)
I
They
Where did you bathe? (at the river, tank, home)
I
They
With what did you clean your body? (besan, soap)
I
They
How did you wash your hair? (shikakai, shampoo)
L
They
Your source of water
(river, common well, house well, common tap, tap at home)
L
They
Was the water source inside the house or outside? How far away?
<u> </u>
They
Who collected the water?
<u></u>
They
Where were the clothes washed?
I
They

With what were the clothes washed? (soda,	, bar soap, detergent)
I	
They	
What kind of toilets did you use? (outdoors	s, dry latrine, flush toilet, none)
I	
They	
3. Water for crops (TB p. 66)	!
Find out how crops are irrigated (watered)	in the area where you live.
Is rain water sufficient?	
Is water brought to the fields in other ways? I	How?
Which crops can do with less water and wh	ich need more?
If crops are irrigated, when, and how often?	
4. Measuring water (TB p. 66) a. Containers I found:	
	O the second sec
Name of container	Capacity marked on the container (litres, millilitres, or what?)
	1



b. A picture of my 1 litre container	
5. How much water do we need? (TB pp. 66-67) a. How much water is needed to grow 1 kilogram of rice ((ask your teacher)
Does all this water remain in the rice plant? Where do you	u think it goes?
b. How much water I need to take a bath (Guess)	
How much water I actually used to take a bath	
c. List the ways in which your family uses water every da	ıy.
Use	How much we use

6. How clean is the water? (TB p. 67)

Test	Water from
a. Colour of the water	
b. Clear or turbid?	
c. Any floating matter?	
d. Describe smell.	
e. Decantation: what settles?	
f. Filteration: what remains on cloth?	
g. Lather in soap?	
h. Evaporation: what is left?	

- 7. How to get clean water (TB p. 67)
- a. Decantation

Is the decanted water clean?
In which ways could you use it?
Would you drink this decanted water? Why or why not?
How can you make the dirt settle faster? Find out from your parents or teachers
b . Filteration through
Is the filtered water clean? Would you drink it? Why or why not?

8. Water for drinking (TB p. 68) Some diseases people can get from microbes in drinking water:
9. Save water! (TB p. 68) a. Some ways to avoid wasting water:
b. Did you find a leaking tap or pipe around your home or school? What did you do then?
In 10 minutes we collected millilitres of water. In one hour ml of water would leak from the tap. In 24 hours litres of water would leak from the tap.
c. Some ways of collecting and using rain water:
Exercises
Name and draw
1. Containers used to store water at your home or school.
Capacity litres Capacity litres

2. How we get water (from Activity 1 b)





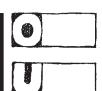


3. Make a poster showing in what ways you can save water.

2. Write these sources of water from smallest to largest: lake, ocean, dew-drop, pond, puddle, sea 3. Name three different ways of drawing water out from a well. 4. Which of the following needs the cleanest water? For which uses can y have water that is not so clean? Drinking	somewhere el	•	ink at home co	me from a v	vell, river, lake	or
3. Name three different ways of drawing water out from a well. 4. Which of the following needs the cleanest water? For which uses can y have water that is not so clean? Drinking	2. Write these	sources of	water from sm	nallest to lar	gest:	
4. Which of the following needs the cleanest water? For which uses can y have water that is not so clean? Drinking	lake,		·	·	·	
4. Which of the following needs the cleanest water? For which uses can y have water that is not so clean? Drinking	3. Name three	e different v	ways of drawir	g water out	from a well.	
have water that is not so clean? Drinking	4 Which of th					
Watering plants Bathing Washing floors 5. About how many litres of water do you drink every day? 6. About how many millilitres of water do you need to brush your teeth?			_	anest water?	For which use	es can yo
Bathing Washing floors 5. About how many litres of water do you drink every day? 6. About how many millilitres of water do you need to brush your teeth?	Drinking					
Washing floors 5. About how many litres of water do you drink every day? 6. About how many millilitres of water do you need to brush your teeth?	Watering plan	ts				
5. About how many litres of water do you drink every day?6. About how many millilitres of water do you need to brush your teeth?	Bathing					
6. About how many millilitres of water do you need to brush your teeth?	Washing floors	S				
	5. About how	many litres	s of water do yo	u drink ever	y day?	
7. In what different ways is water used in the kitchen?	6. About how	many mill	ilitres of water	do you need	d to brush you	teeth?
	7. In what diff	ferent ways	s is water used	in the kitche	en?	

Classroom discussion

1. Do you get clean drinking water near your home? Do all the people in your village or locality get water easily? What problems do people have in getting clean water? How can these problems be solved?
2. Do you ever carry water from one place to another? Why do you have to do this?
3. Do one or more persons in your house get water for the whole family? Do they make sure that there is clean drinking water for all? Who does this work and why doesn't someone else do it?
4. Is your drinking water decanted? Is it filtered? Who decants and filters it? Where? What are the different ways of filtering water?
What's the same? What's different? 1. Give two similarities and two differences between:
a. A tank and a river
A tank and a river are similar because
(i)
(ii)
A tank and a river are different because
(i)
(ii)



b. A	A well and a	tubewell			
Αv	vell and a tu	ıbewell ar	e similar b	ecause	
(i)					
(ii)					
Αv	vell and a tu	ıbewell ar	e different	because	
(i)					
(ii)					
	ind the odd				
a.	a pipe,	a canal,	a well,	a stream	
				the rest because	
b.	a sea,	a tank,	a river,	an ocean	
				the rest because	
C.	an ocean,	a creek,	a lake,	a sea	
				the rest because	
T					
	k and write				
I. V	Vhen we had	a no water	-		

Ask and find out

1. How is rain water stored for use by your village, town or city?

Most big cities are situated on the banks of a river, or close to a large lake. Find the names of some cities and the rivers or lakes they are on.

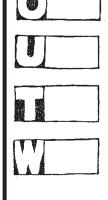
Name of the city	Name of the river or lake

- 2. Many years ago did your village, town or city use the same water sources that you do now? What were their sources of water?
- 3. Find old sources of water in your locality which are not being used any more (like wells, tanks). Why are they not being used any more?
- 4. Can we prevent floods and droughts? How?

Figure it out

1. How does salt get separated from sea water?

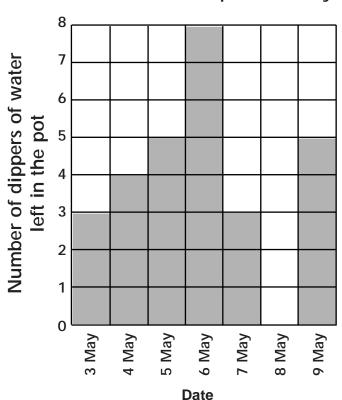
- 2. Water can pass through blotting paper. Sand cannot pass through blotting paper. Mini made a cone of blotting paper, rested it on a funnel, and poured sandy water into it. What came out in the jar?
 - a. Sand only
 - b. Water only
 - c. Sand and water
 - d. Nothing





3. Every morning Apu filled a pot with clean drinking water. Some mornings he noticed that the family had finished almost all the water in the pot. Other mornings there was more water left. One week he counted the number of dippers of water left in the pot each morning and made a graph:





a. How many dippers of water did he find on 3 May?.....

On 5 May?....

b. On one of the days they had visitors. Guess which day this was.

c. On one day they were gone all day at the fair. Guess which day this was.

Show and tell

1. Bring a newspaper or magazine article on problems of water supply. Explain it to the class.

What I brought:

Ask a question

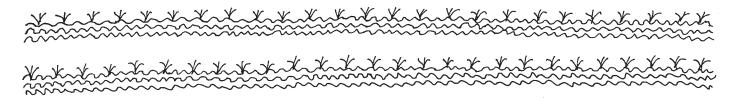
Ask questions about how we use water. Think of how you will try to find the answers.

My questions:









FOOD

Chapter 8

Where our food comes from

Chapter 9

Food in our body

Chapter 10

What is thrown out

Assessment Sheet: Unit 4

Category	Score	Comments
Observation		
Understanding		
Oral Language (Talking)		
Written Language (Writing)		
Design Skills		
Quantitative Skills	0	
Enthusiasm in doing activiti	es	
Patience and concentration		
Independent thinking		
Co-operation with other stud	lents	
Completion of home assignr	ments	





Find out about food

1.	Where	does	food	come	from?	(TextBook	page	75)
----	-------	------	------	------	-------	-----------	------	----	---

Some foods we ate	Ingredients

Did each ingredient come from a plant (P), an animal (A), or somewhere else?

Ingredient	P or A?	Name of plant or animal

2. Which parts of plants do we eat? (TB p. 75)

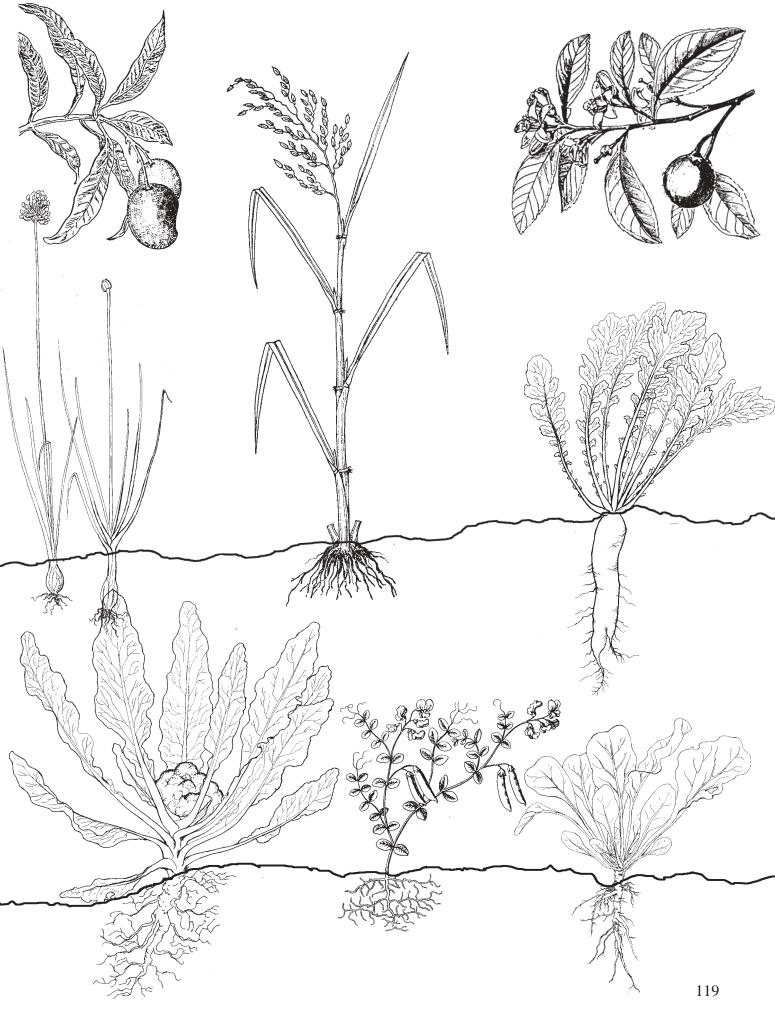
Write these names of food plants next to their pictures:

tomato	banana	wheat	onion
sugar cane	cauliflower	mango	spinach
pea	bajra	orange	radish (<i>mooli</i>)
carrot	arbi	sunflower	jowar
ginger	beet	purslane (a weed)	rice
coconut	mustard	Indian bay leaf (tej patt	a)

Label those parts of the plant that you can recognise: root, trunk, stem, branch, leaf, flower, fruit or seed.

Circle the names of the parts that you eat.





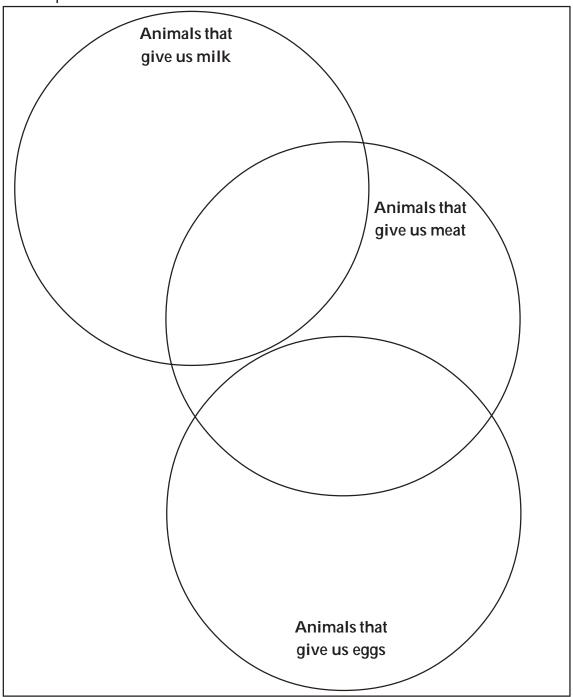




3. Foods that come from animals

a. For each food animal make a small slip of paper. Write the name of the animal on one side of the slip. On the other side write what that animal gives: 'milk', 'eggs', 'milk and meat' etc. Now write the names of the animals in the correct parts of these circles.





Are there any parts of the circles where none of the animals fit? Explain why

o. Which foods do	o these animals eat?	
uffalo		
joat		
hicken		
ish		
1 How grops are	ground (TD pp. 74-70)	
	grown (TB pp. 76-79) I other crops which are ç	arown in my aroa.
1. 30111e 1000 and	rother crops willcit are (grown in my area.
o. How		is grown:

The names of some farming (or gardening) tools and machines tools used in my area: Name of the tool What it is used for Is rice grown in your area? If not, in which nearby place is rice grown? When is the rice sown? What do farmers do before they transplant the seedlings? When is paddy harvested? How long does it take from the time the seeds are planted until the crop is harvested?..... What happens after the paddy is harvested? Who does most of the work in growing and harvesting rice, men or women? Which part of growing rice do you think is the hardest? Why? Notice picture (8) on page 77 of the TextBook. What do you think is the effect of adding pesticides? Could the pesticides also harm useful or harmless insects, birds, or larger animals? Could they harm us?

The story of how rice is grown:

Are other crops in your area grown in the same way? What are the differences?	(0)
Think! Think!	
Why do we need to plough the field before sowing seeds?	
5. Grow your own food (TB p. 80)	
a. My plan:	
What crop to sow:	
In which soil:	
How to plough the 'field':	
How much space between the plants:	
How often to water:	
What care to take to prevent any damage:	
How to make the crop grow better or faster:	
When to harvest the crop:	
Whether we need to separate the food from other parts of the plant:	

Whether we have to dry it, peel or shell it, wash it or cook it:
Which parts of the plant to throw away:
What will happen to these parts:
b . Did you plant a crop or just one food plant?
Describe your experience:
6. Make your own flour (TB p. 80)
A picture of my grinding stones:
Will the flour fill the same number of measures as the grain, or more or less? (Guess) Why?
After measuring I found there was:
Is your roti clean?
Would you eat it?
Are some grains easy to shape? Which ones?
Is it easier to make a roti out of coarse flour or fine flour?

7.	Pests and pesticides (TB p. 81)
a.	Was your crop eaten or damaged while it was growing?
Ot	her food crops or plants which we found damaged:
	ow this damage might have been caused:
b.	The vegetables and fruits in which I found caterpillars or other insects:
c.	The grain, spices or other foods in which I found bugs:
d.	The names of some pesticides used on crops or garden plants:
Do	you use any pesticides in your house?
Do	you put any pesticides in foodgrains?
Co	uld pesticides be harmful to us? Why do you think so?

•	
MA	

Take care! Pesticides are poisonous. They can make you sick. Wash all grains, vegetables, fruit and meat well to remove pesticide and other dirt and germs. Exercises Name and draw 1. The first picture of my field or plant: Date:	Pesticides are poisonous. They can make you sick. Wash all grains, vegetables, fruit and meat well to remove pesticide and other dirt and germs. Exercises Name and draw	Pesticides are poisonous. They can make you sick. Wash all grains, vegetables, fruit and meat well to remove pesticide and other dirt and germs. Exercises Name and draw	Pesticides are poisonous. They can make you sick. Wash all grains, vegetables, fruit and meat well to remove pesticide and other dirt and germs. Exercises Name and draw	Pesticides are poisonous. They can make you sick. Wash all grains, vegetables, fruit and meat well to remove pesticide and other dirt and germs. Exercises Name and draw	Pesticides are poisonous. They can make you sick. Wash all grains, vegetables, fruit and meat well to remove pesticide and other dirt and germs. Exercises Name and draw	Pesticides are poisonous. They can make you sick. Wash all grains, vegetables, fruit and meat well to remove pesticide and other dirt and germs. Exercises Name and draw	71 71	· · · · · · · · · · · · · · · · · · ·	····· · ····· · ······ · ······
Wash all grains, vegetables, fruit and meat well to remove pesticide and other dirt and germs. Exercises Name and draw	Wash all grains, vegetables, fruit and meat well to remove pesticide and other dirt and germs. Exercises Name and draw	Wash all grains, vegetables, fruit and meat well to remove pesticide and other dirt and germs. Exercises Name and draw	Wash all grains, vegetables, fruit and meat well to remove pesticide and other dirt and germs. Exercises Name and draw	Wash all grains, vegetables, fruit and meat well to remove pesticide and other dirt and germs. Exercises Name and draw	Wash all grains, vegetables, fruit and meat well to remove pesticide and other dirt and germs. Exercises Name and draw	Wash all grains, vegetables, fruit and meat well to remove pesticide and other dirt and germs. Exercises Name and draw		Take care!	•
and other dirt and germs. Exercises Name and draw	and other dirt and germs. Exercises Name and draw	and other dirt and germs. Exercises Name and draw	and other dirt and germs. Exercises Name and draw	and other dirt and germs. Exercises Name and draw	and other dirt and germs. Exercises Name and draw	and other dirt and germs. Exercises Name and draw	Pesticides are poisonous. The	ney can make you sici	<i>k.</i>
Exercises Name and draw	Exercises Name and draw	Exercises Name and draw	Exercises Name and draw	Exercises Name and draw	Exercises Name and draw	Exercises Name and draw	Wash all grains, vegetables,	fruit and meat well to	remove pesticide
xercises ame and draw	xercises ame and draw	xercises ame and draw	xercises ame and draw	xercises ame and draw	xercises ame and draw	xercises ame and draw	and other dirt and germs.		
lame and draw	lame and draw	lame and draw	lame and draw	lame and draw	lame and draw	lame and draw	# · · · · # · · · · · · · · · · · · · ·	₩ #K #M	
Name and draw	Name and draw	Name and draw	Name and draw	Name and draw	Name and draw	Name and draw	Exercises		
							Name and draw		
1. The first picture of my field of plant: Date:	1. The first picture of my field of plant: Date:	The first picture of my field of plant: Date:	The first picture of my field of plant:	The first picture of my field of plant:	The first picture of my field of plant:	The first picture of my field of plant:	1. The first picture of my field or	nlant.	Data
							i. The first picture of my field of	piant:	Date:

The second picture of my field or plant:

Date:....

The third picture of my field or plant:	Date:	
The fourth picture of my field or plant:	Date:	

2. A farming o	or gardening	tool used in my	/ area.		
Interesting qu	estions				
		food that comes	from neith	er plant nor	animal:
2. Put in the rig	ght order:				
threshing	ploughing	harvesting	sowing	milling	irrigating
3. Put in the rio					
bhindi flow chopped bh		cooked bhindi ripe bhindi		ipe bhindi o outing bhind	
	•••••		•••••		

4. Write the name of the plant, and the part of the plant, from which we get these foods:	
corn	
coconut oil	
sugar	
peas	
carrot	
cauliflower	
5. Name some domestic and some wild animals that people eat.	
Domestic:	
Wild:	
6. Name some water plants and animals that people eat.	
7. Name some foods eaten on certain festival days	
Classroom discussion	
1. Does everyone around you get enough food to eat?	
Why do some people not get enough food?	
with do some people not get chough rood:	
What could they do about it?	



•	ometimes people eat too much food, or the wrong kinds of oles, and tell why you think this happens.
3. What are the ad	vantages and disadvantages of using tractors or animals for
ploughing?	
What's the same?	What's different?
1. What is the difference vegetable? Give s	erence between a fruit and a vegetable? Can a fruit be a some examples.
2. Give two simila	arities and two differences between:
a. A raw	and a ripe one (write name of any fruit)
A raw	and a ripe one are similar because
(i)	
(ii)	
A raw	and a ripe one are different because
(i)	
(ii)	
b. A raw	and a cooked one (write name of any vegetable
	and a cooked one are similar because
A raw	and a cooked one are different because

People eat only some kinds of plants and animals. Make a list of 5 plants and 5 animals that you think no one eats. For each one, tell why you think	
people do not eat it.	
Talk and write	
1. Find out about festivals, songs, and dances celebrating sowing, harvesting, or other farming activities.	
2. Something I ate today - Imagine and tell a story about where some food came from.	

3. Ask your friend to think of some food. Ask questions to help you guess the
name of that food. Your friend can only answer "yes" or "no". How many questions did you have to ask before you could guess the answer?
Play with words
1. Play this game with your friends. The first player says the first letter of any food word. The second player says the next letter so that the word can still be completed into a food word. (It does not matter if this word is different from what the first player had in mind.) A player who cannot think of the next letter gets out. One who completes a food word gets a point.
Ask and find out
1. What is a weed? What is meant by weeding?
2. What is manure? How is it made and used? What is a chemical fertiliser? Find out the names of some fertilisers.
3. Can fertilisers and pesticides be harmful to us? In what ways?
When fertilisers and pesticides are washed off by rain where will they go?
4. Are there pesticides which are not harmful to us? Find out about safe ways of protecting grains from pests, like using neem leaves.
Figure it out
1. Suppose a family of four cooks 250 grams of rice every day. How much rice will they use in 30 days? (Remember, 1000 grams make 1 kilogram.)
Where does your family get rice?
How much rice does your household use in one month?

grow 5 kg of rice on each square metre of land, how many square take to feed your family for one year?	e. If you can metres will it
How much rice we use in one month	kg
How much rice we use in one year	kg
To grow 5 kg of rice we need 1 square metre of land.	
To grow kg of rice we need square m	netres of land
Show and tell 1. Bring some food that you might carry on a long journey. Now of some foods that you would not carry on a long journey. Tell the What I brought:	
1. Bring some food that you might carry on a long journey. Now of some foods that you would not carry on a long journey. Tell the	
Bring some food that you might carry on a long journey. Now of some foods that you would not carry on a long journey. Tell the What I brought: Ask a question	e class why.
Bring some food that you might carry on a long journey. Now of some foods that you would not carry on a long journey. Tell the What I brought:	e class why.

UES ?	CHAPTER	Ç
	Food in our bodi	es

•	
	[





П	- 4	Т		
1.7	Ť	ı		
1		4		
A				
- 16		180		

Eat your lunch
1. What happens to the food we eat? (TextBook pages 86-88)
Look at the pictures on pages 86-87 of your TextBook. They show how food travels along the digestive path and what happens to it along the way.
Write down the names of the organs in the order in which the food passes through them.
Write numbers from 1-7 next to these sentences to put them in the correct order
Water is removed from the remaining food in this larger intestine.
Your teeth tear, chop and grind the food.
Food reaches the stomach. It is mixed with digestive juices and churned.
The waste food is thrown out.
You take a bite of food.
The food is mixed with more digestive juices in this long, narrow intestine. The food breaks down further.
The crushed food travels down the food pipe.
2. Digestive juices break down food (TB p. 88)
a. What I chewed for 2-3 minutes (bread, roti made from any cereal, or cooked potato)
Describe the change in taste

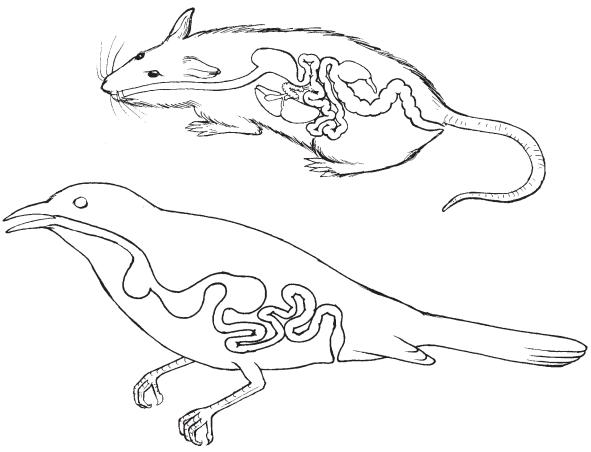
Flour and potato contain a lot of starch. Saliva changes starch into
If you chew your food well, the saliva will digest it well!
b. We tested these foods for starch
My first guess: Which ones contain starch?
When we put a drop of iodine solution, these foods turned black/blue
These foods turned black/blue only when we crushed them and then put iodine solution
After doing the iodine test, I think that these foods contain starch:
c. Colour of the raw potato solution no.1 when iodine solution was added to it
Colour of the raw potato solution no.2 when iodine was added to it after it was rolled around in the mouth for 5-6 minutes
I think that the colour of the two solutions (was)/ (was not) different because

•	
[44]	\neg

a. vv e	made the model food	d pipe using thes	e things
What I	found out from the mo	odel	
The fo	od pipe is similar to t	he small and larg	ge intestines because
The fo	od pipe is different fr	om the small and	d large intestines beca
b. We	made the model stoma	ach using these th	ings
What I		stomach that is n	ot happening in your
	at does your model of		now about what happ

What things happen in the small and large intestines that this model does not show?	
d. What I heard when I put my ear on my partner's belly (before and after a meal)	
I think that these sounds might be made by	
4. How long is the digestive path? (TB p. 90)	
The total length of the digestive path is aboutm andm cm	
Think! Think! Every organ in the digestive path has a different shape. The food pipe is a	
short tube, the stomach is bag-shaped, while the intestines are long, coiled tubes. What would happen	
a. If the food pipe was coiled?	
b. If the stomach was a straight tube?	
D. II tile storriaci i was a straigi it tube:	
c. If the intestines were short and straight?	

a. v	Where have you seen partly digested food?
Des	scribe how it looked and what kind of taste it left in your mouth.
b. V	Vhat is the colour of your stools?
Doe	s this colour change from day to day?
	cribe the colour of your stools on the day after you have eaten green leafy etables, beetroot or a lot of tomato.
Peo stor	nk! Think! ple sometimes say that if you swallow a seed, "a tree will grow in your nach and its branches will come out of your ears!" Is this possible? Why or y not?
	Other animals have to digest food too! (TB p. 92) k these pictures of digestive paths of the earthworm, bird and mouse.



Which of these animals have a mouth a	and an anus?

Which of them have a stomach?

The food canal of which animal looks most like our own?

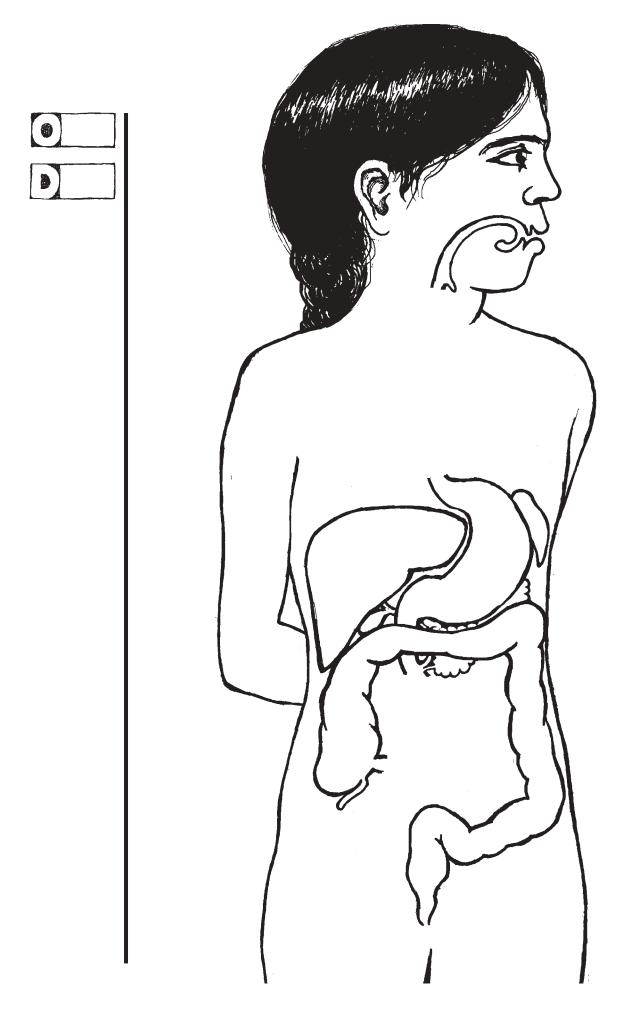
Exercises

Act it out

1. Act out digestion. One student each could play the role of an organ like, the mouth, teeth, food pipe, stomach, small intestine, large intestine and anus. A round piece of paper could be the roti. Pass the roti along this 'digestive system'. Act out what happens to it.

Interesting question

1. In the picture on the opposite page, fill in the missing parts and add the missing labels.



Classroom discussion
1. In what ways does food change inside our body?
Suppose food remained as it was. Could it be used by the body?
Why or why not?
2. Suppose you put some mashed up food in a bowl, added some of the digestive juices produced inside our body and mixed it well. Would the food in the bowl get digested? Why or why not?
3. Does digestion occur while we are asleep? Why do you think so?
4. What will happen if we eat more food than we need? Will we get extra energy or become very strong?
5. Have you had indigestion?
Have you ever noticed any gas coming from your stomach or intestines? How could gas get into the digestive path?

0	
NA	$\overline{}$

How is it different? What things happen to the food in the digestive not in the grinder? Figure it out 1. Mini and her friend Kairi ate a delicious mango at 3 pm on Monograph shows how long it took them to digest the mango. Digesting a mango Wini Kairi	
1. Mini and her friend Kairi ate a delicious mango at 3 pm on Monograph shows how long it took them to digest the mango. Digesting a mango Mini Kairi Kairi	ve system but
3pm 9pm 3am 9am 3pm 9pm 3am 9am 3pm 9pn Monday Tuesday Time Time in stomach Time in small intestine Time in large intestine	
Look at the graph and answer these questions: a. Where was the mango at 4 pm, Monday in Mini's digestive path? b. Where was the mango at 4 pm, Monday in Kairi's digestive path? c. Where was the mango at 10 pm, Monday in Mini's digestive path? d. Where was the mango at 10 pm, Monday in Kairi's digestive path?	?
e. Did Mini and Kairi take the same amount of time to digest the man. f. How many hours did it take each of the girls to digest the mango	ango?

Play with words

1. Mini wants to give Apu a crossword puzzle to complete. She found this crossword puzzle in an old newspaper. Someone had already completed it, but some of the clues were missing. Help Mini write clues for the crossword puzzle.



			\mathbf{T}^{1}										
			0		\mathbf{T}^2		\mathbf{S}^3						
		\mathbf{I}^4	N	T	E	S	T	I	N	\mathbf{E}^{5}			\mathbf{G}^{6}
	\mathbf{J}^7		G		E		O			N			R
	U		U		T		\mathbf{M}^{8}	0	U	T	Н		I
P ⁹	I	P	E		Н		A			E			N
	C						\mathbf{C}^{10}	Н	U	R	N	E	D
	E		\mathbf{C}^{11}	R	U	\mathbf{S}^{12}	Н			S			
	S		Н			A			\mathbf{G}^{13}				
			E			L			A				\mathbf{A}^{14}
			W		D ¹⁵	I	G	E	S	T	I	0	N
						V							U
					\mathbf{L}^{16}	A	R	G	E				S

ACROSS DOWN

4 Food passes from the stomach into the small	1 It helps to move food around the mouth.
8	2
9	3

0	5
1	6
5	7
6	11
	12
	13
	14
Ask a question	
 Ask questions about digestion of food answers. 	. Think of how you will try to find the

CHAPTER 10

What is thrown out



Where our food goes

- 1. The parts we throw away (TextBook page 96)
- a. Fill this Table for some plants you choose from the pictures on pages 119-121:

Name of	Parts that	Why we do not eat
plant	we do not eat	these parts

Stage of rice production	Parts thrown out	
Harvesting		
Threshing		
Milling		
Polishing		
Fill this Table for	r some animals whose fle	sh we eat:
Fill this Table for Name of animal	r some animals whose fle Parts that we do not eat	sh we eat: Why we do not eat these parts
Name of	Parts that	Why we do not eat
Name of	Parts that	Why we do not eat
Name of	Parts that	Why we do not eat
Name of	Parts that	Why we do not eat
Name of	Parts that	Why we do not eat
Name of animal	Parts that we do not eat	Why we do not eat

Think! Thir	nk!	
	g food from plants and animals, voluld these parts be useful in any	0 1
		guesses.
2. Who eats	our wasted food? (TB pp. 96-97)	
Name some	animals who eat the food that we	throw away
Write in vol	ur own words what happened to	the banana peels in the pictures on
3	in your TextBook.	ano banana pools in the plotal os on
	robes decompose food (TB pp. 9	
	of your plate s kept	
Observation	•	
Date	Covered plate	Uncovered plate
Date	Covered plate	Oncovered prace

	_
	_
[VV]	

Describe the	mould that you saw.
Guess how t	his food might look after several months
b . Describe	the smell of a garbage bin
Did the garh	page smell like this before you put it into the bin?
	it smell now?
If you do no	t brush your teeth does your mouth smell? Guess wh
If you do no	t brush your teeth does your mouth smell? Guess wh
c. Date of bu	urying the banana peels
c. Date of bu	urying the banana peels
c. Date of bu	urying the banana peels
c. Date of bu	urying the banana peels
c. Date of bu	urying the banana peels
c. Date of bu	urying the banana peels
c. Date of bu	urying the banana peels
c. Date of bu	urying the banana peels
c. Date of bu	urying the banana peels

What will you find under the soil when the peels have decomposed completely?	
	(c)
Guess how many days it will take for the peels to mix into the soil and the air.	

Take care! Wash your hands well after handling decomposing food. Some microbes growing on the food can make you sick. Some of them make poisons that can make you sick.

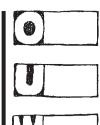
4. How quickly microbes multiply! (TB p. 99)

Time	Number of bacteria	·
10:00		
10:20		
10:40		
11:00		

11:20

What should Apu have done first after he came back home from playing? Was there a better way of checking whether the dal was warm or cold? Think! Think! "I don't like microbes!" Apu said. "They are dirty and smelly! They make us sick." "Microbes are not dirty!" Mini replied. "They make everything clean. They eat garbage and break it down into smaller and smaller pieces that go back into the soil and help plants to grow!" What do you think? What could we do with our food garbage? 5. Microbes in our faeces (TB p. 100) Why do you need to wash your hands well after you go to the toilet?	fr 	om?
Was there a better way of checking whether the dal was warm or cold? Think! Think! "I don't like microbes!" Apu said. "They are dirty and smelly! They make us sick." "Microbes are not dirty!" Mini replied. "They make everything clean. They eat garbage and break it down into smaller and smaller pieces that go back into the soil and help plants to grow!" What do you think? What could we do with our food garbage?	V	Vhat might have happened if Mini ate the dal?
Think! Think! "I don't like microbes!" Apu said. "They are dirty and smelly! They make us sick." "Microbes are not dirty!" Mini replied. "They make everything clean. They eat garbage and break it down into smaller and smaller pieces that go back into the soil and help plants to grow!" What do you think? What could we do with our food garbage? Microbes in our faeces (TB p. 100)	 V\ 	Vhat should Apu have done first after he came back home from playing?
"I don't like microbes!" Apu said. "They are dirty and smelly! They make us sick." "Microbes are not dirty!" Mini replied. "They make everything clean. They eat garbage and break it down into smaller and smaller pieces that go back into the soil and help plants to grow!" What do you think? What could we do with our food garbage? 5. Microbes in our faeces (TB p. 100)	 V\ 	Vas there a better way of checking whether the dal was warm or cold?
make us sick." "Microbes are not dirty!" Mini replied. "They make everything clean. They eat garbage and break it down into smaller and smaller pieces that go back into the soil and help plants to grow!" What do you think? What could we do with our food garbage? 5. Microbes in our faeces (TB p. 100)	 T	hink! Think!
What do you think? What could we do with our food garbage? 5. Microbes in our faeces (TB p. 100)	m ev	nake us sick." "Microbes are not dirty!" Mini replied. "They make verything clean. They eat garbage and break it down into smaller and
What could we do with our food garbage? 5. Microbes in our faeces (TB p. 100)		
	 V	
· · · · · · · · · · · · · · · · · · ·		
Why do you need to wash your hands well after you go to the toilet?	5.	. Microbes in our faeces (TB p. 100)
	V	Vhy do you need to wash your hands well after you go to the toilet?

Why should faeces never come into contact with food or drinking water?					
Think! Think!					
Have you ever i	noticed gas in your intestines? Where could this gas have				
come from?	Take care! Our faeces contain large numbers of microbes. Microbes multiply very quickly in faeces and urine. Faeces and urine also attract flies that carry the microbes to our food. If we eat this food we will fall sick.				
	our waste go? (TB pp. 101-103) place where you defecate:				
Where do you th	nink your wastes go?				
	pictures in the TextBook best shows the kind of latrine that				
What happens to	the urine and the faeces?				
Is any part of th	e waste carried away from the place of defecation?				
How much water	r might be needed for each use?				



Would you expect to find flies and dirty smells afterwards?i. Outdoor defecation
Take care! Do not defecate near a pond, stream or well! (Why not?)
Do not defecate close to where people live! (Why not?)
Why should you cover the faeces with soil?
Think! Think! If only a few people defecate outdoors, there is no need to carry away the waste. What would happen if many people defecate outdoors every day around the same place?
ii. Service latrine What could be done with the waste in a service latrine?
Is the work of carrying waste dangerous? Why? Think of how it might be done in a safer way.

ii. Pit latrine
What happens to waste in the pit latrine?
v. Septic tank
How is the liquid waste carried away from the septic tank?
Where do you think it goes?
What would happen if sewers from many such latrines emptied into a river of ake?
v. Flush toilet
The solid and liquid waste from many flush toilets usually goes into arge sewers. Big cities have lakhs of people staying in them. What could we do with all their waste?
7. Microbes help to decompose our waste! (TB p. 103)
s there a 'sewage treatment plant' in your locality?
What did you find out about it?
Does the sewage pose any danger to humans and other living things in

•	
MAL	$\overline{}$

Think! Think!	
What would happen if your fa	aeces did not decompose?
Know these words	
Ditches and pipes which carry	waste water are called
Waste carried by sewers is cal	led
Exercises	
Name and draw	
1. A fresh leaf	2. A decomposing leaf
Interesting questions	
	s left around it starts smelling bad, and you might what you know about mibrobes to explain this.
see bubbles in it. Remember v	

3. If you keep flour open it spoils. If it is covered in a box it lasts for a longer time without spoiling. Why?			
4. If you keep milk very cold it lasts for a longer time without spoiling.	 Why?		
5. If you dry some foods in the sun, they keep for months or years withous spoiling. Why?	ut		
6. Name some ways of making food last for a longer time without spoilir Find examples of cereals, pulses, fruits, vegetables, fish and meat which preserved in different ways.	_		
7. Which do you think will decompose faster: a. bread or wood?			
b. dry bread or moist bread?			
c. bread in a warm place or in a cold place?			
d. a banana peel thrown away during the monsoon, or during a dry season?			
Classroom discussion			
Apart from food wastes, what other things are thrown out in your garbage?			

Are there things in your garbage that microbes might not decompose? What could we do with these things?
2. Why is it dangerous to keep garbage lying around?
What could be done with garbage produced by several households?
Ask and find out
1. How can earthworms help to make manure from garbage?
2. Find the population of your village, town or city. Estimate the amount of garbage produced by so many people in one day. What is done with this garbage?
3. What is done with the sewage in your village, town or city?
4. Wastes produced by some places, like hospitals, small industries and factories, might be especially dangerous. Find out if there are any such places in your locality and what is done with their wastes.
Show and tell
1. Look around your locality and tell the class about any places you find with garbage or sewage disposal problems.
Name of the place:
Ask a question
Ask questions relating to the wastes that we produce and what we could do
with them.

outline of THE HOMI BHABHA CURRICULUM (Primary Science)

CLASS I and II

Unit 1: Me and My Family

Unit 2: Plants and Animals

Unit 3: Our Food

Unit 4: People and Places

Unit 5: Time

Unit 6: Things around us

CLASS III

Unit 1: The Living World

Chapter 1. So many living things!

Chapter 2. Looking at plants

Chapter 3. Grow your own plant

Chapter 4. Looking at animals

Unit 2: Our Body, Our Food

Chapter 5. Our Body

Chapter 6. Our Food

Chapter 7. Our Teeth

Chapter 8. Taking care of our body

Unit 3: Measurement

Chapter 9. How many, how much?

Chapter 10. How long, how high, how far?

Unit 4: Making Houses

Chapter 11. Houses of all kinds

Chapter 12. Make your own house

CLASS IV

Unit 1: Sky and Weather

Chapter 1. Sun, wind, clouds and rain

Chapter 2. Day sky, night sky

Unit 2: Air

Chapter 3. Fun with air!

Chapter 4. What's in the air?

Unit 3: Water

Chapter 5. Fun with water!

Chapter 6. Water and life

Chapter 7. Water and us

Unit 4: Food

Chapter 8. Where our food comes from

Chapter 9. Food in our bodies

Chapter 10. What is thrown out

CLASS V

Unit 1: The Web of Life

Chapter 1. Living together

Chapter 2. Soil

Unit 2: Moving Things

Chapter 3. How things move

Chapter 4. Making a cart

Unit 3: Earth and its Neighbours

Chapter 5. Our earth

Chapter 6. Day and night

Chapter 7. Earth's neighbours

Unit 4: Our Bodies

Chapter 8. What is in our bodies

Chapter 9. Staying healthy

Unit 5: Materials

Chapter 10. The things we use

Note: The topics in Class I and II cover environmental studies. Classes III - V are primarily concerned with science, though keeping in view social and cultural perspectives. The topics begin with everyday experiences and immediate surroundings in Classes I - III, moving gradually outwards. Classes IV and V make increasing use of measurement concepts.