

SCIENCE CLASS-VI

Components of Food



St. Anselm's Pink City School, Jaipur
Affiliated to C.B.S.E.



Acknowledgement

The following eminent and praiseworthy educationists have worked efficiently for the promotion of this book.

Their contribution directly or indirectly is graciously appreciated, honored and acknowledged.

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Contents

Sr. No.	Topic
1.	Balanced diet
2.	Important substances present in our food (Nutrients)
3.	Different kinds of vitamins
4.	Tests for starch, proteins and fats in the food
5.	Meaning of deficiency diseases
6.	Types of deficiency diseases
7.	Non-communicable and communicable diseases
8.	Germs causing communicable diseases
9.	Ways to control communicable diseases
10.	Some more information related to our topic components of food

Disclaimer:

No character has any real and fictitious resemblance with any real personalities.

PREFACE

The story rotates around the rustic life of a village. The children and their parents come to live in the village, far from a busy city life after being requested by their grandparents. It is such a different lifestyle, devoid of any stress, full of purity of food and air, pollution free environment and place for the children to play around. They stay for a long time and do not want to go back as they are benefitted by the fresh fruits and vegetables, fresh food and a life full of joys, no tensions, simple living and full of oxygen in the air to breathe in, which avoids dreadful ailments. This novel includes all the subjects like English, Hindi, Mathematics, Social Studies and Science to provide knowledge to the children and includes union of all subjects into a single platter of academic notion. This novel shows us the importance of all the subjects in a student's life and its educational value.



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SOURCE

NCERT Textbook of Science (Class VI)

Chapter Name	Learning Objectives	Learning Outcomes
Chapter-2 Components of Food	Explain the nutrients present in the given food items & critique their utility in adequate, inadequate & excess proportions.	Conducts simple investigations to seek answers to queries. Food should be eaten in a balanced form, eating too much of any one or two type of nutrient is not good for the body. That is eating too much fats is not good for our body and cause obesity.
	Explain the function of each nutrients in order to discuss the importance of nutrients for good health. Hypothesize consequences of eliminating any one major nutrients in order to make a healthy food choice.	Relates processes and phenomenon with causes, e.g., deficiency diseases with diet.
	Design a balance diet plan in order to provide body sufficient nutrients it need to function properly.	Applies learning of scientific concepts in day-to- day life, e.g., selecting food items for a balanced diet.
	Explain the importance of different kinds of Vitamins and Minerals.	Relates that washing fruits and vegetables after peeling lose Vitamins and Minerals present in them.
	Explain the importance of regular exercise, proper sleep and pure and peaceful environment. Explain Non-communicable and Communicable diseases and some measures to protect us from Communicable diseases.	Relates that outdoor games, walking, complete eight hours of sleep and purity of environment are important. Relates that all Communicable diseases are infectious and can spread from one person to another. To save ourselves, all safety measures should be followed.

CHARACTERS



Mr. Kumar



Mrs. Kumar



Ram



Shreya



Rahul



Latika



Mohan



Meena



Shyaam

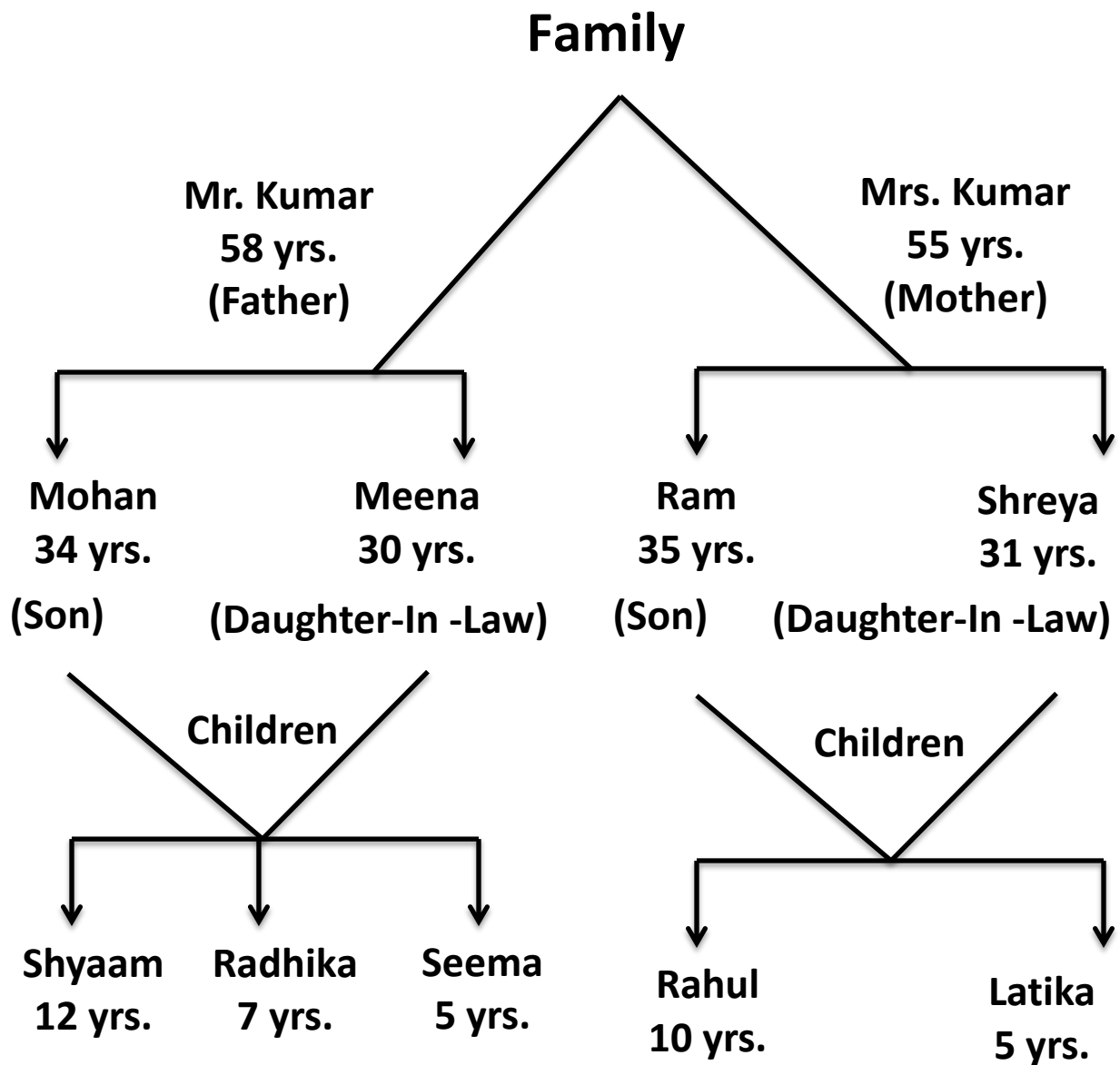


Radhika

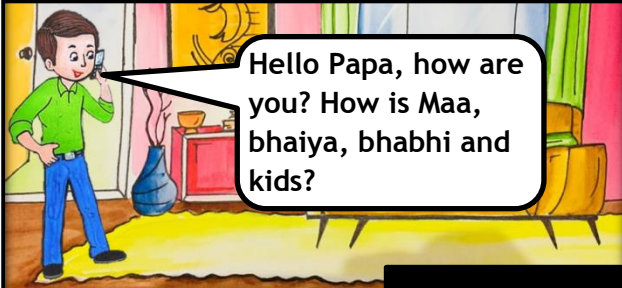


Seema

Name of the characters, their age and their relation.



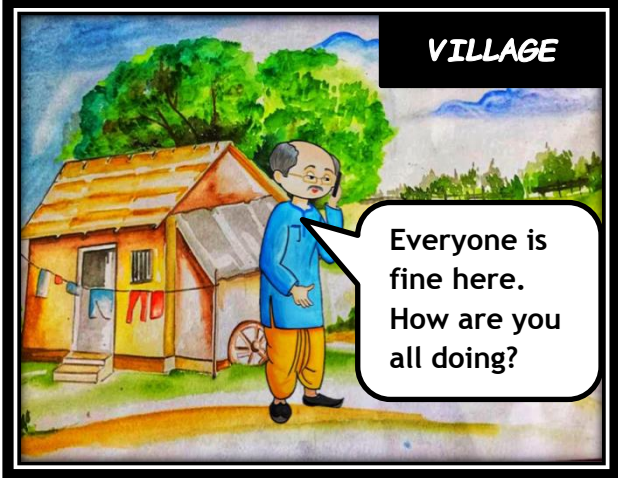
RAM AND HIS FATHER ARE TALKING TO EACH OTHER OVER THE PHONE.



Hello Papa, how are you? How is Maa, bhaiya, bhabhi and kids?

PUNE CITY.

VILLAGE

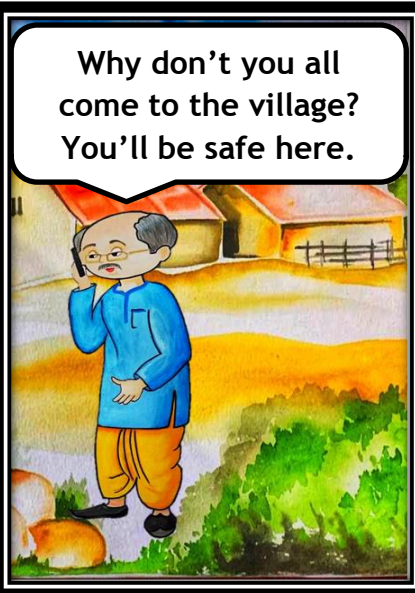


Everyone is fine here. How are you all doing?

Papa, we are staying at home these days, because Covid-19 is in the air and it is very contagious and devastating.



Why don't you all come to the village? You'll be safe here.



Sure papa, I will talk to Shreya and kids and after that I will let you know.



Okay beta, take care.



Shreya, Papa is asking us to visit him and stay there for sometime.

Okay, we will talk to Rahul and Latika about this.





AFTER TWO DAYS

Oh Wow! My children have come.

Welcome Shreya beta, I feel elated to see you after so many days.

Namaste

Hello

VILLAGE SCENE

Beta Rahul and Latika, go and have bath and after that we all can sit together and enjoy our lunch.

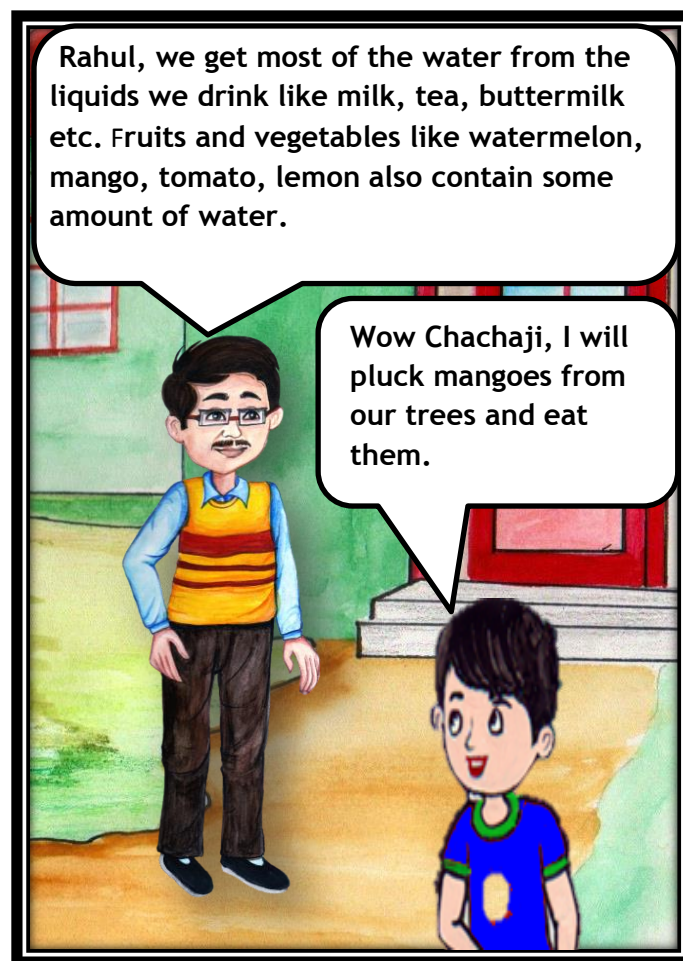
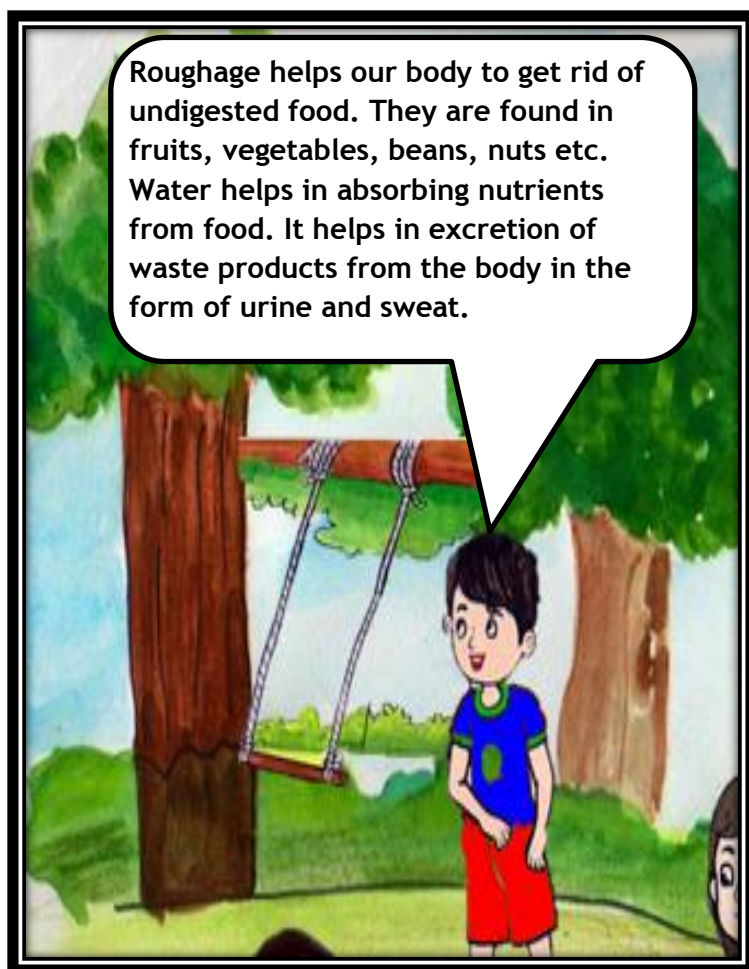
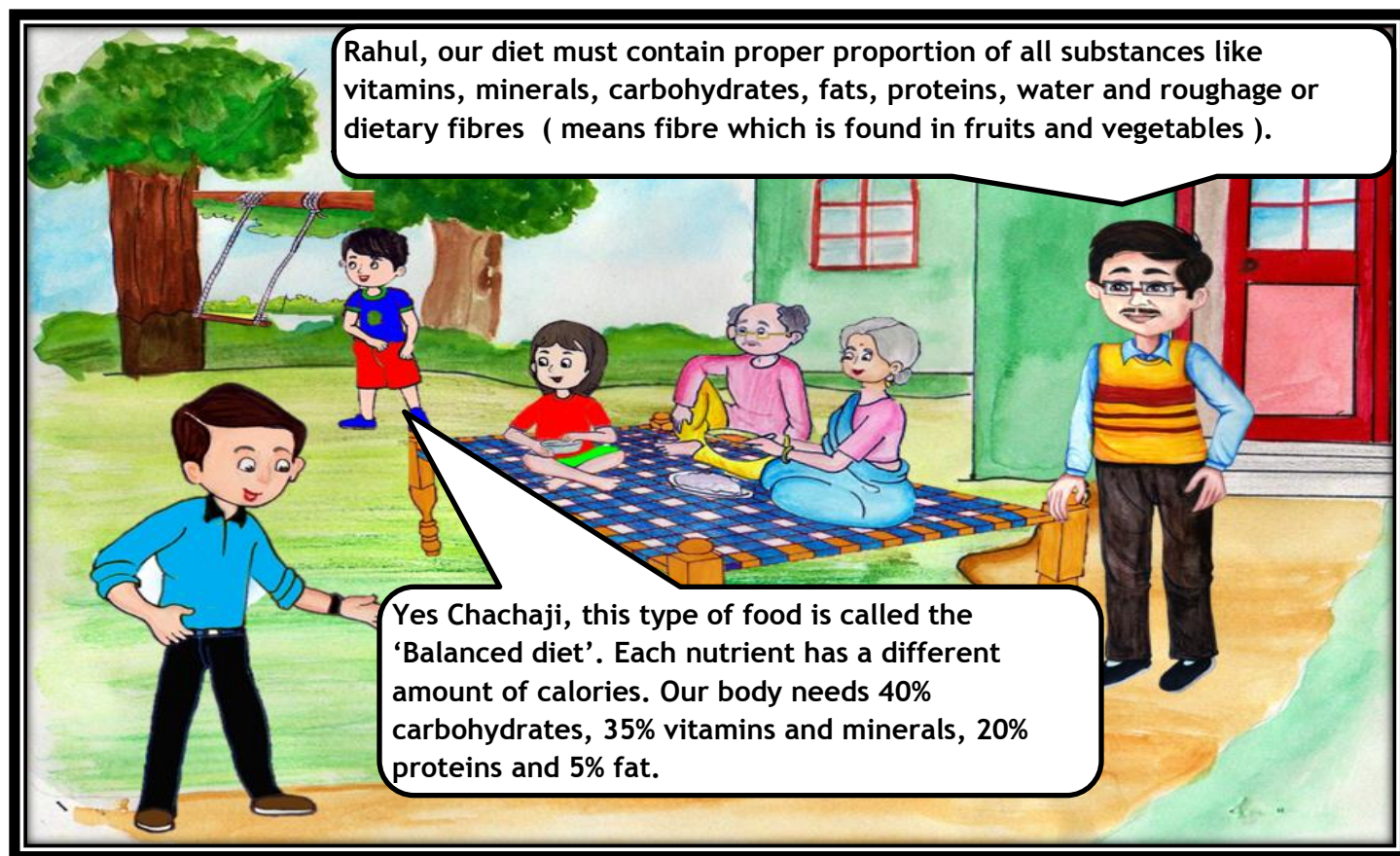
You all please sit and we will serve hot chapatis made on Chulha.

Oh Wow! This food is looking very delicious. I love these rotis made on chulha.

Wow daal, rice, chapati, methi, paneer ki sabji, bajre ki khichdi with ghee and curd. Papa, here we eat food with appropriate nutrients in a balanced form.

Wow! food is really very yummy.

Yes beta, everything here is fresh, healthy, pure and clean.



Carbohydrates give us energy to work and play (we get from chapatis, bread, rice etc.). Fats are the source of stored energy which we get from ghee, cheese, butter etc. Carbohydrates and fats are called energy-giving food.



Vitamins keep us fit and minerals help in the growth of the body. They are called protective food. They are found in fruits and vegetables, poultry, fish and beans, dairy products etc.



From now onwards, I will only eat fruits, vegetables and dairy products for fitness and growth of my body.



No beta, eating only one nutrient and that too in excess will harm your growth.



That is why Mummy gives me cereals, pulses, vegetables and salad in my meals.



Chachaji, vitamins also help in keeping our eyes, bones, teeth and gums healthy.



There are different kinds of vitamins like: Vitamin A which keeps our skin and eyes healthy. They are found in cheese, eggs and yogurt. Vitamin C helps our body to fight against diseases. Citrus fruits like orange, strawberries, kiwis are rich in Vitamin C.



Vitamin D helps our body to use calcium for bones and teeth. It is found in egg yolks, spinach, soybeans etc.



Some other vitamins are Vitamin E and Vitamin K and there is also a group of vitamins called Vitamin B-complex (found in spinach, broccoli etc).



Chachaji, proteins are essential for growing children, found in milk, peas, pulses etc. They are called body-building food.



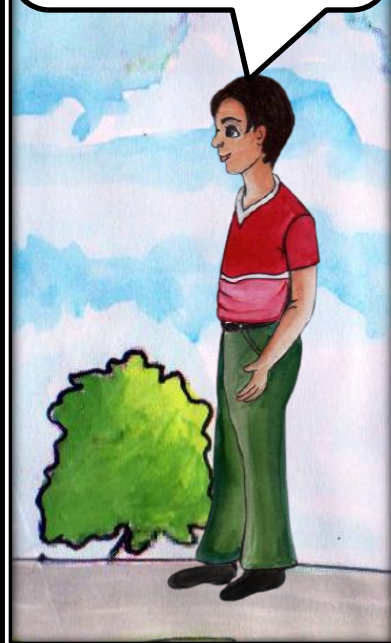
In India, people of different states eat different type of food which contains all the nutrients. Like in Rajasthan people eat dal bati churma, garlic chutney, raab, ghevar etc.



Wow! mouth watering food. Shyaam bhaiya, do all foods contain all the important nutrients?



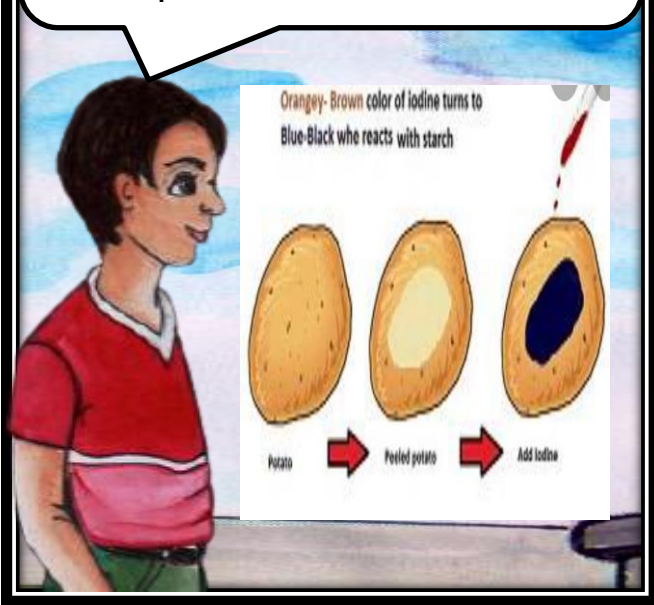
Radhika, most foods are mixture of various types of nutrients. Now, I will explain the test of Starch in our food.



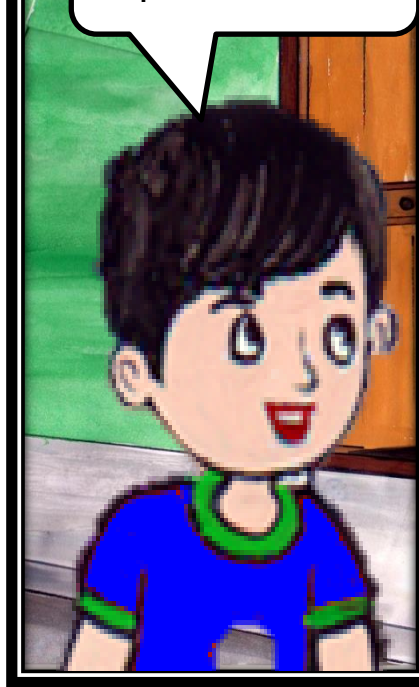
The main carbohydrates found in our food are in the form of starch and sugar.



To test this, take a small quantity of food item (peeled and sliced potato), add 2-3 drops of dilute iodine solution on it. If it changes into blue- black colour, it means starch is present in the food.



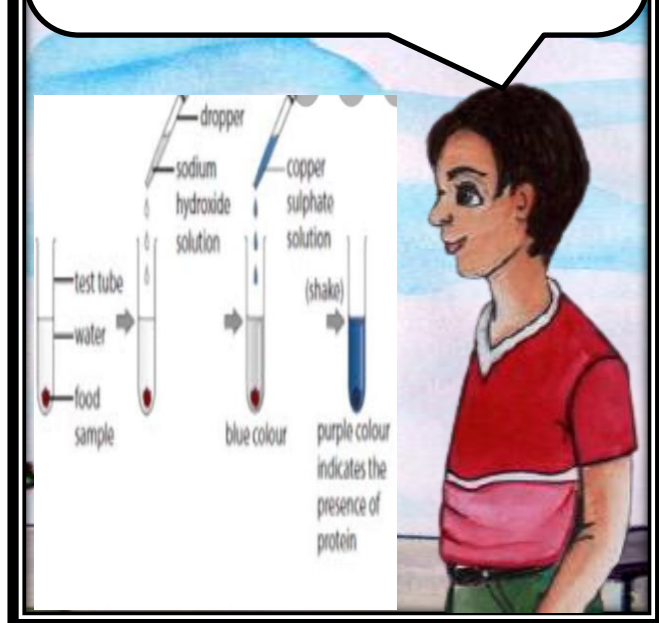
Bhaiya ,can I do the experiment with bread and pasta ?



Yes .Of course. In fact you should do the tests with various food items. Now see the test for protein.



Take a small quantity of milk or any other powdered food item in a clean test tube, add 10 drops of water, 2 drops of copper sulphate and 10 drops of caustic -soda (Sodium Hydroxide). Shake well, if it turns violet, means protein is present in the food.



Bhaiya, how to test fats in our food item?



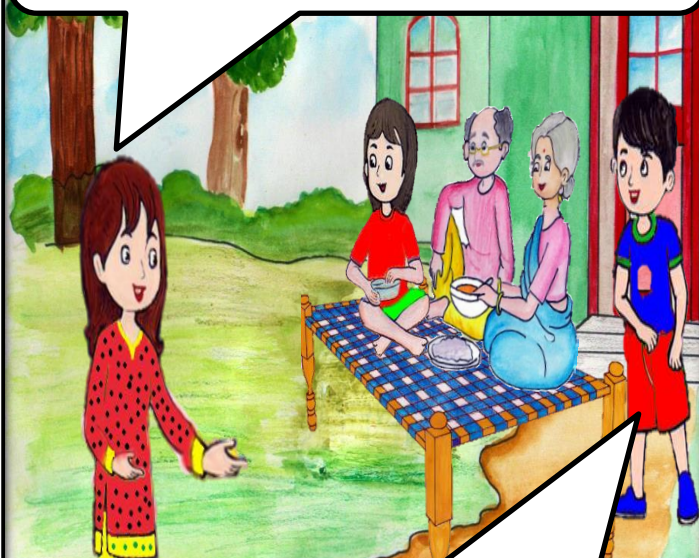
Let's take some french fries ,wrap it in a piece of tissue paper and crush it. Now check, does it have an oily patch? An oily patch on paper shows that food item contains fat.



Bhaiya, too much of fat rich foods are harmful for us. We may suffer from a condition called obesity.

Yes Rahul, but I like chocolates, ice-creams and french fries. (Ah !Amazing !)

Children, lack of a particular mineral or vitamin causes Deficiency diseases and they do not spread from one person to another.



yes, deficiency of Vitamin A causes night blindness, deficiency of Vitamin B1 causes beriberi, deficiency of Vitamin C causes scurvy ,deficiency of Vitamin D causes rickets.

Deficiency of iron causes anaemia and lack of iodine in our food causes goitre.

I remember when Verma aunty was suffering from goitre .Her neck was so swollen up.



Children, see this table showing diseases/ disorders caused by deficiency of vitamins and minerals:

Vitamin/ Mineral	Deficiency Disease/ Disorder	Symptoms
Vitamin A	Loss of Vision	Poor vision, loss of vision in darkness, sometimes complete loss of vision
Vitamin B1	Beriberi	Weak muscles and very little energy to work
Vitamin C	Scurvy	Bleeding gums, wounds take longer time to heal
Vitamin D	Rickets	Bones become soft and bent
Calcium	Bone and Tooth decay	Weak bones, tooth decay
Iodine	Goitre	Glands in the neck appear swollen. Mental disability in children
Iron	Anaemia	Weakness

Mummy, eating the right kind of food is not enough. It should be cooked properly so that its nutrients are not lost.

If the vegetables and fruits are washed after cutting or peeling, they may lose some vitamins.

Many vegetables and fruits contain vitamins and minerals. Similarly, repeated washing of rice and pulses may remove some vitamins and minerals present in them.

AT NIGHT

Hey Latika, tomorrow we all will go to see our fields.

Wow! didi, we all will have fun tomorrow.

NEXT MORNING – ALL THE KIDS GET UP EARLY IN THE MORNING, AND AFTER GETTING READY THEY DRINK BUTTER MILK..

Papa, here we follow early to bed and early to rise, which comforts our mind and body.

Here, the ambience is so fresh, lushgreen trees and cool plants outside.

THEY ALL START WALKING TOWARDS THE FIELD.

Beta we need to walk or cycle as these are the only modes of transportation available here.

Chachaji, this way we can exercise and expend physical energy and can save gym expenses.

RAHUL LISTENS TO EVERYTHING INTENTLY.

Come and see how beautiful these trees and plants are. See amla tree, giloy plant.

Papa, what do we call them in English?

Listen beta, amla is gooseberry. It improves eyesight and beautifies hair and giloy is heart-leaved moonseed. It eases the symptoms of fever like dengue ,malaria etc.

Mummy puts amla oil in her hair ,that is why she has got beautiful hair and Dadiji asks me to eat one amla daily to improve my eyesight.

RAHUL OBSERVES HOW FARMERS WORK HARD IN THE FIELDS.

Chachaji, can I pluck some amla and giloy from the trees ?

Yes ,my child..... why not ?Rahul ,this also boosts our immunity and protects us from communicable diseases which spread through air,insects and direct contact .

Chachaji,they also spread through contaminated food and water .

Yes beta ,they also spread through germs like bacteria (very small organisms) which causes diseases like meningitis, typhoid and cholera .



Chachaji,my teacher taught me about protozoa . They are single-celled microorganisms which causes malaria and amoebic dysentry .



And viruses are the smallest entities. Diseases like common cold, influenza, measles and rabies are caused by them.



In order to control the spread of these diseases, keep this in mind

1) Drinking water should be boiled to kill germs.



2) Wash your hands before eating anything



3) All food articles should be properly covered to keep away dust, flies etc.



4) Trash should be thrown into the dustbin.



5) Wash fruits and vegetables before eating.



6) In case of infectious diseases, the patient should be kept isolated. His or her utensils, clothes, towels should be separate and disinfected.



Exercise-1

Think and answer:-

Q.1 Fill in the blanks :

1. Anaemia is caused by the deficiency of _____ .
2. _____ diseases are spread through contaminated food and water.
3. _____ enable us to fight diseases.
4. Diseases that can spread from one person to another are called _____.
5. Deficiency of _____ mineral in the diet causes goitre.
6. _____ means fibre which is present in fruits and vegetables.
7. Regular exercise is very important for _____.
8. To remain healthy our body needs a _____, _____ and _____ .
9. _____ are very small living organisms or microbes.
10. Diseases like meningitis, typhoid and cholera are caused by _____ .
11. _____ and _____ are caused by Protozoa.
12. Diseases like common cold, influenza, measles and rabies are caused by _____.

13. A diet which contains proper proportion of all the important substances is called _____.

Q II. Unscramble the following words related to components of food and write them in the space provided.

- 1. reinpot** _____
- 2. menliars** _____
- 3. tivanmi** _____
- 4. bocatradhyer** _____
- 5. nitesturn** _____
- 6. tfa** _____

ANSWERS (Fill in the blanks)

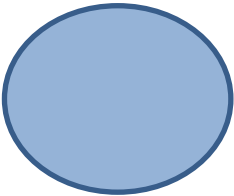
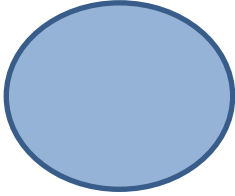
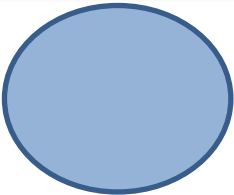
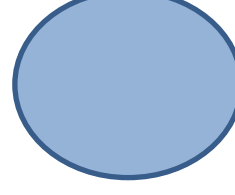
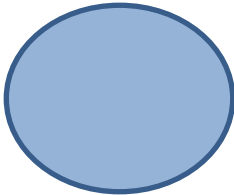
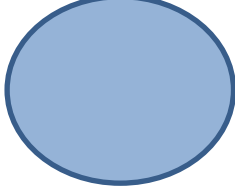
- 1. iron**
- 2. Communicable**
- 3. Vitamins**
- 4. communicable**
- 5. iodine**
- 6. Roughage**
- 7. good health**
- 8. balanced diet, regular exercise and enough rest**
- 9. Germs**
- 10. bacteria**
- 11. Malaria and amoebic dysentery**
- 12. viruses**
- 13. balanced diet**

ANSWERS (Unscramble)

- 1. protein**
- 2. minerals**
- 3. vitamins**
- 4. carbohydrate**
- 5. nutrients**
- 6. fat**

Activity-1

Collect the picture and paste them in the given circles.

1					2
3					4
5					6

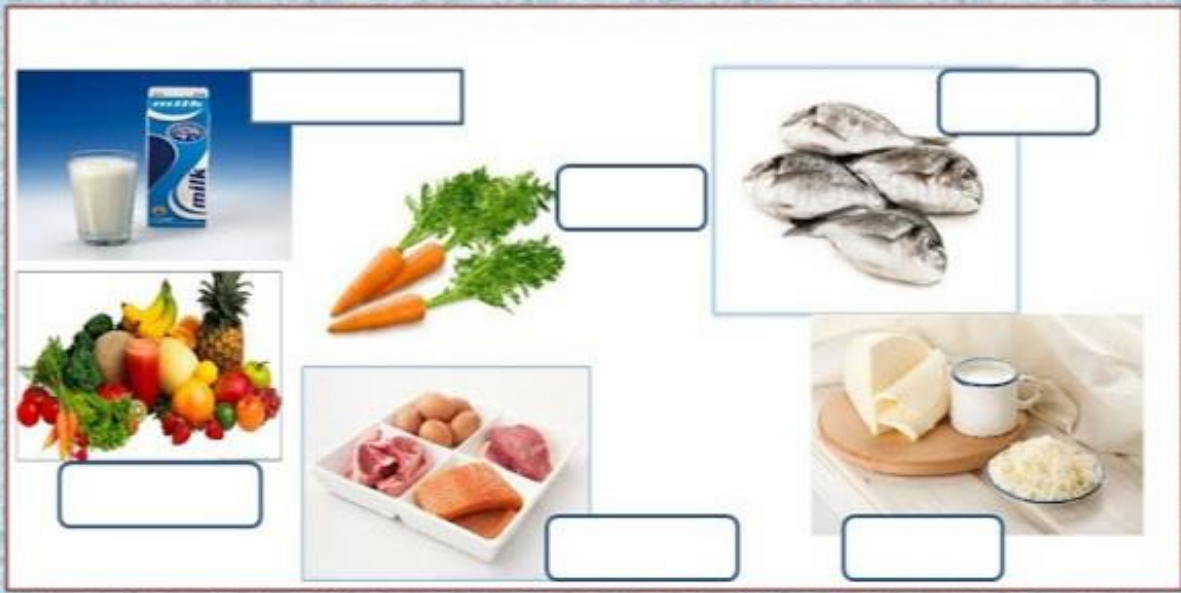
1. Carbohydrates
2. Proteins
3. Fats
4. Minerals and Vitamins
5. Water
6. Roughage

Activity-2

Make a list of the food items you eat in breakfast, lunch and dinner for one week. Check whether your diet is deficient or balanced.

Activity-3

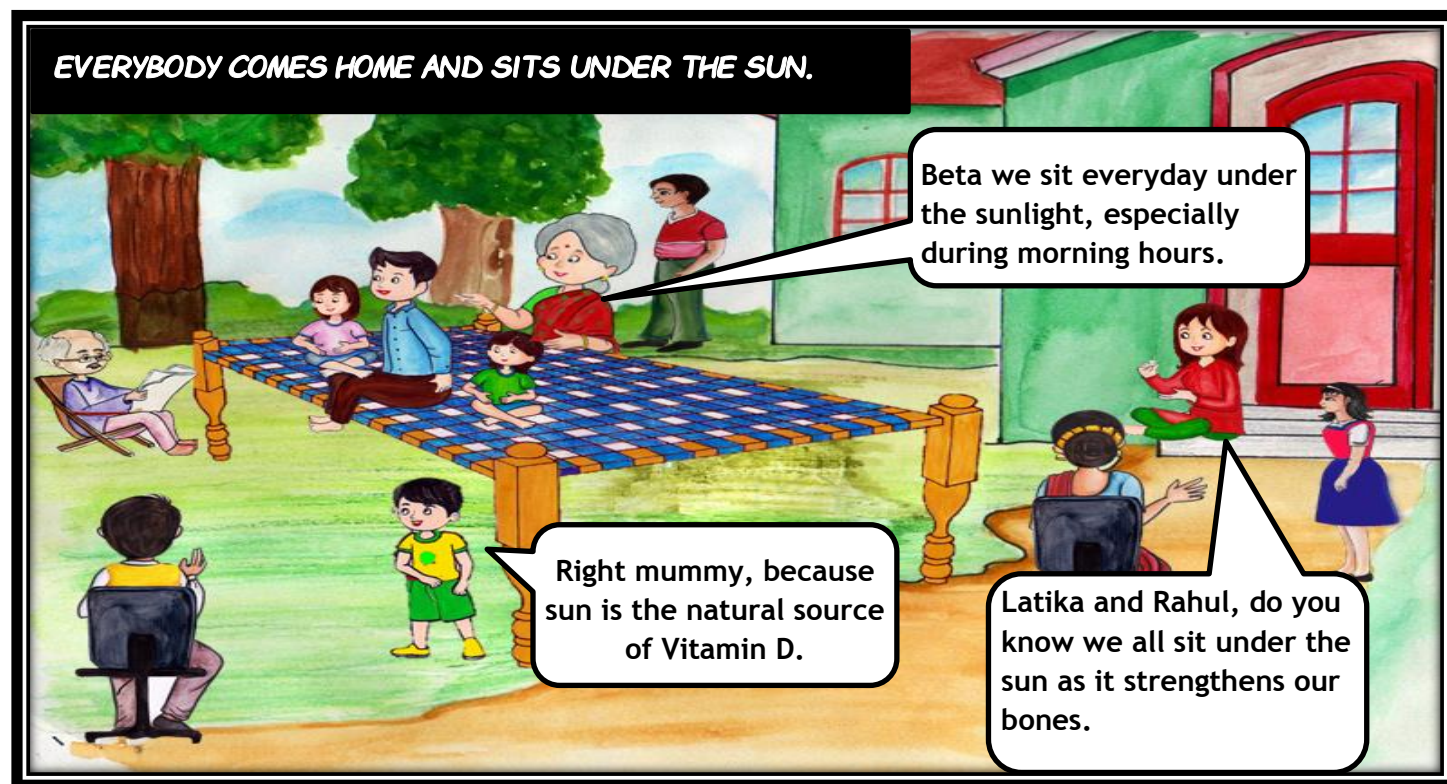
Look at the pictures given below. Write P for things obtained from plants and A for things obtained from animals in the boxes.

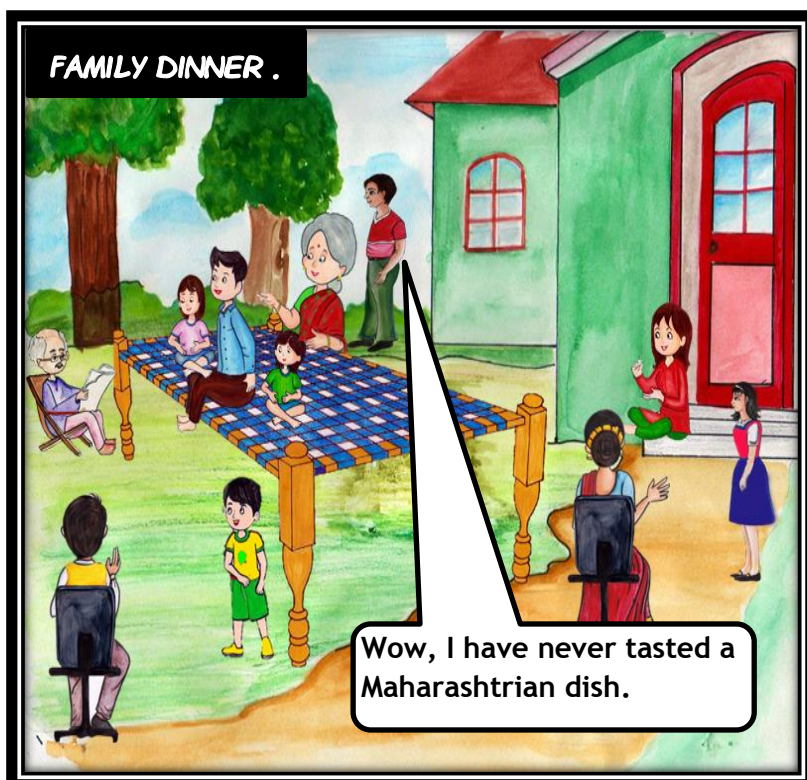
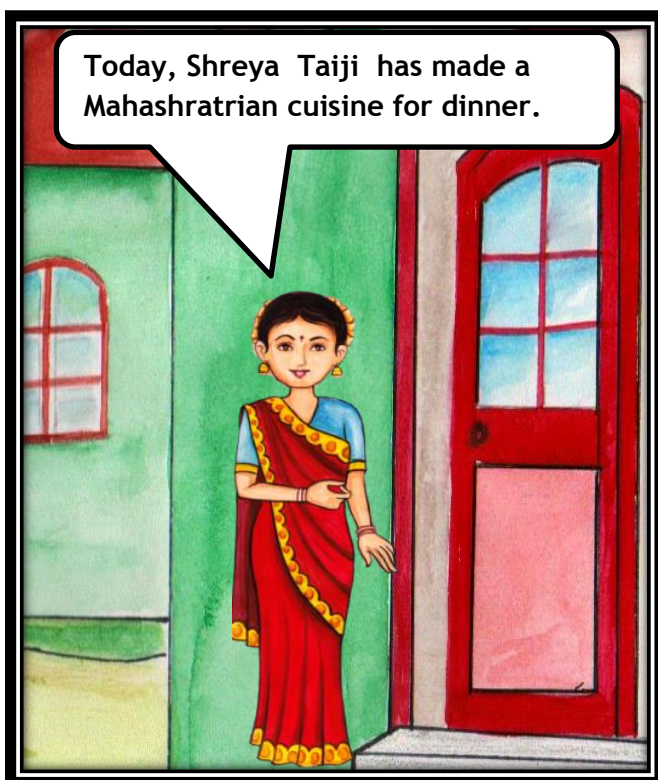
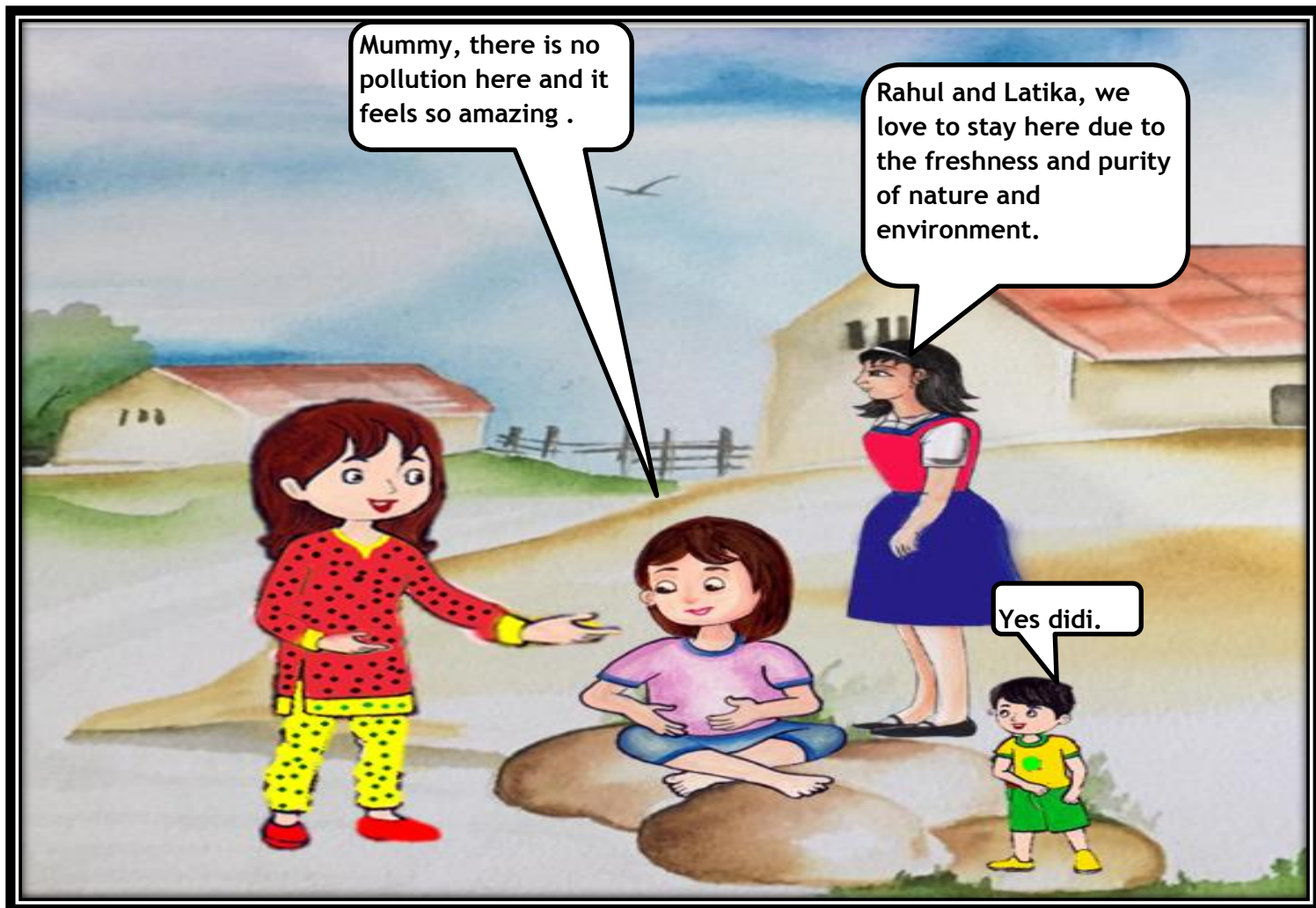


Activity-4

Prepare for the play-Importance of nutrients for good health. The class will be divided into groups, each group comprising of six students. Each student in the group will be considered as a separate nutrient; protein, carbohydrate, fat, vitamins and minerals, water and roughage. Children will prepare their favourite food plate; according to the type of nutrient.







Mummy cooks delicious food . I like masala bhat and sheera. I enjoy them a lot.

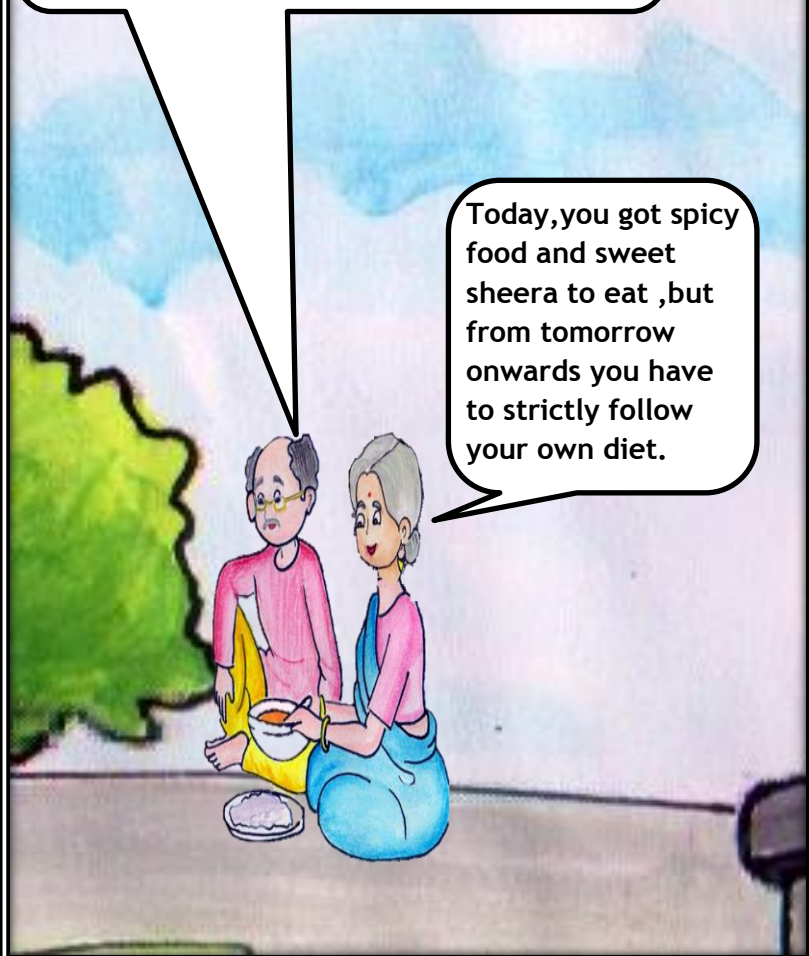


I like coconut chutney, shrikhand and sev bhaji...Yummy....mouth watering.

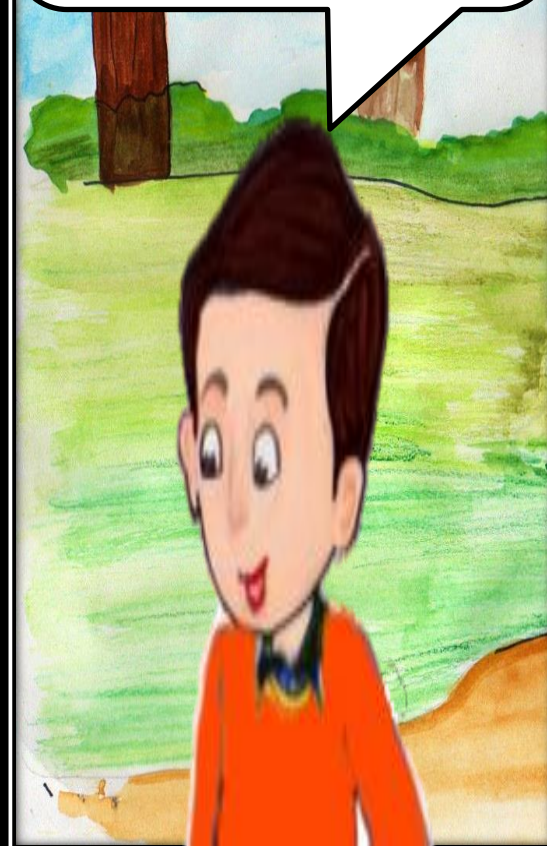


Wow beta Shreya...I had a nice time and enjoyed the traditional food...daal, masala bhat, mirchi bhaji, koshimbir, sheera...all were extremely tasty.

Today, you got spicy food and sweet sheera to eat ,but from tomorrow onwards you have to strictly follow your own diet.



Shreya, I don't want to eat food because I am extremely exhausted as I have travelled for two days to come to the village. Then, the next day I went around to see the fields. I am feeling feverish and my body is aching.



You should drink kadha made of giloy, tulsi, ginger, turmeric, and honey. It is good to cure fever and bodyache.



AT NIGHT –ALL ARE SITTING AND TALKING.

Dadiji, recite that poem which you used to narrate for us when we were kids.

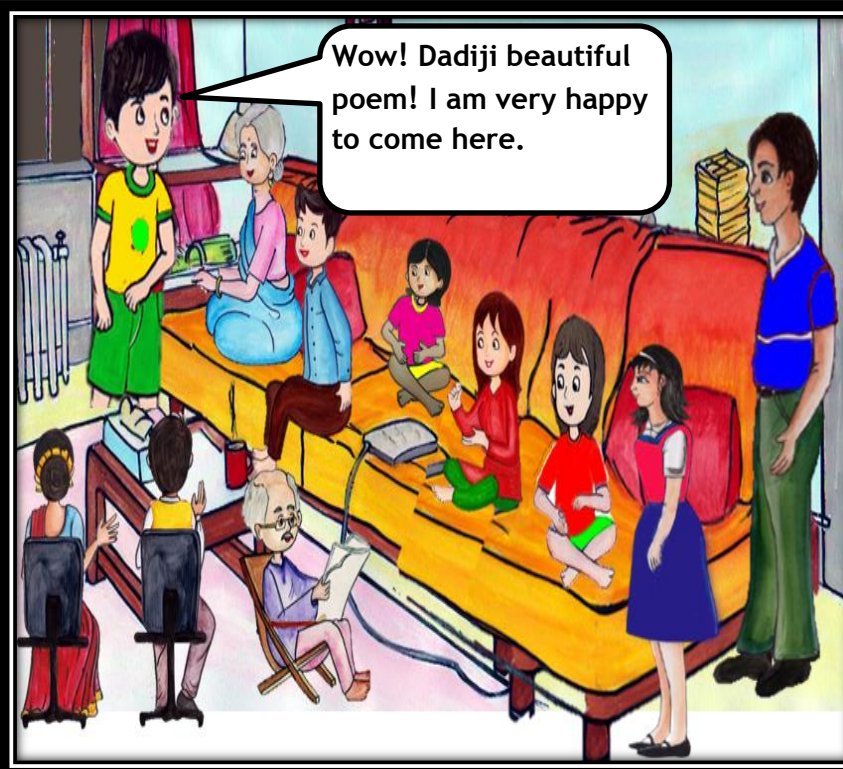
Sure beta, listen to this.



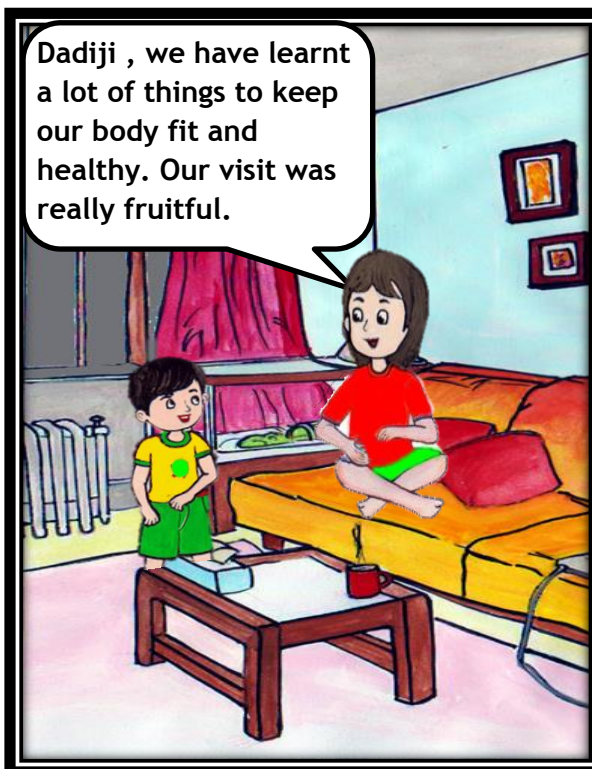
Subah subah sheegrah jaago,
Mann ko rakho swachh,
Paushtik bhojan ka nitya sevan karo,
Door karo jwar,
Khelo kudo, bhago bhago,
Mann me rakho achhe vichaar!!



Wow! Dadiji beautiful poem! I am very happy to come here.



Dadiji , we have learnt a lot of things to keep our body fit and healthy. Our visit was really fruitful.



Exercise -2

Q III. Match the following:

COLUMN A

- 1. Vitamin A**
- 2. Vitamin B1**
- 3. Vitamin C**
- 4. Vitamin D**

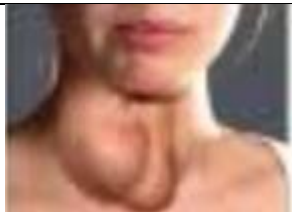
COLUMN B

- a. Scurvy**
- b. Rickets**
- c. Night Blindness**
- d. Beriberi**

ANSWERS (Match the following)

- 1. Night Blindness**
- 2. Beriberi**
- 3. Scurvy**
- 4. Rickets**

QIV. Observe the images to name the Deficiency disease, also state the cause.

Image	Deficiency disease	Caused due to lack of
		
		
		
		

ANSWERS

Deficiency disease	Caused due to lack of
Beriberi	Vitamin B1
Rickets	Vitamin D
Goitre	Iodine
Scurvy	Vitamin C

SOME MORE INFORMATION RELATED TO OUR TOPIC FOOD AND HEALTH:-

- 1. The food we eat daily is called our diet.**
- 2. Carbohydrates are present in cereals, bread, sugar, potatoes etc.**
- 3. Butter, ghee, oil etc. contain fats.**
- 4. Minerals also help in development of the body.**
- 5. Milk, meat, eggs, fish, pulses and peas are excellent sources of proteins.**
- 6. We should drink 8-10 glasses of water everyday.**
- 7. Roughage helps our body to get rid of undigested food.**
- 8. Overcooking food destroys vitamins and other important substances.**
- 9. Exercise helps to keep the muscles in good tone.**
- 10. Outdoor games are good for the fitness of our body and mind.**
- 11. Regular hours of sleep at night increase our efficiency and strength to work.**
- 12. Anaemia is caused by lack of iron in food.**

Bibliography

This story has been created, drafted and compiled by Mrs. Priyanka Jennifer Correa. She has taken out her valuable time and put in a lot of efforts to give a creative shape to this novel. It has been edited and made simpler for the students of class-6 and has been compiled in the colloquial language to understand it. The language has been written with clarity and reality. It gives us the first hand information about a rural life and also about food and health .The students who live in cities will know more about a village life.

Name of the text book Reffered- Class-6 NCERT Text Book

**Application Used : www.sonuacademy.in
Microsoft PowerPoint, Microsoft Word,
Paint and Photoshop.**

PRINCIPAL'S DESK

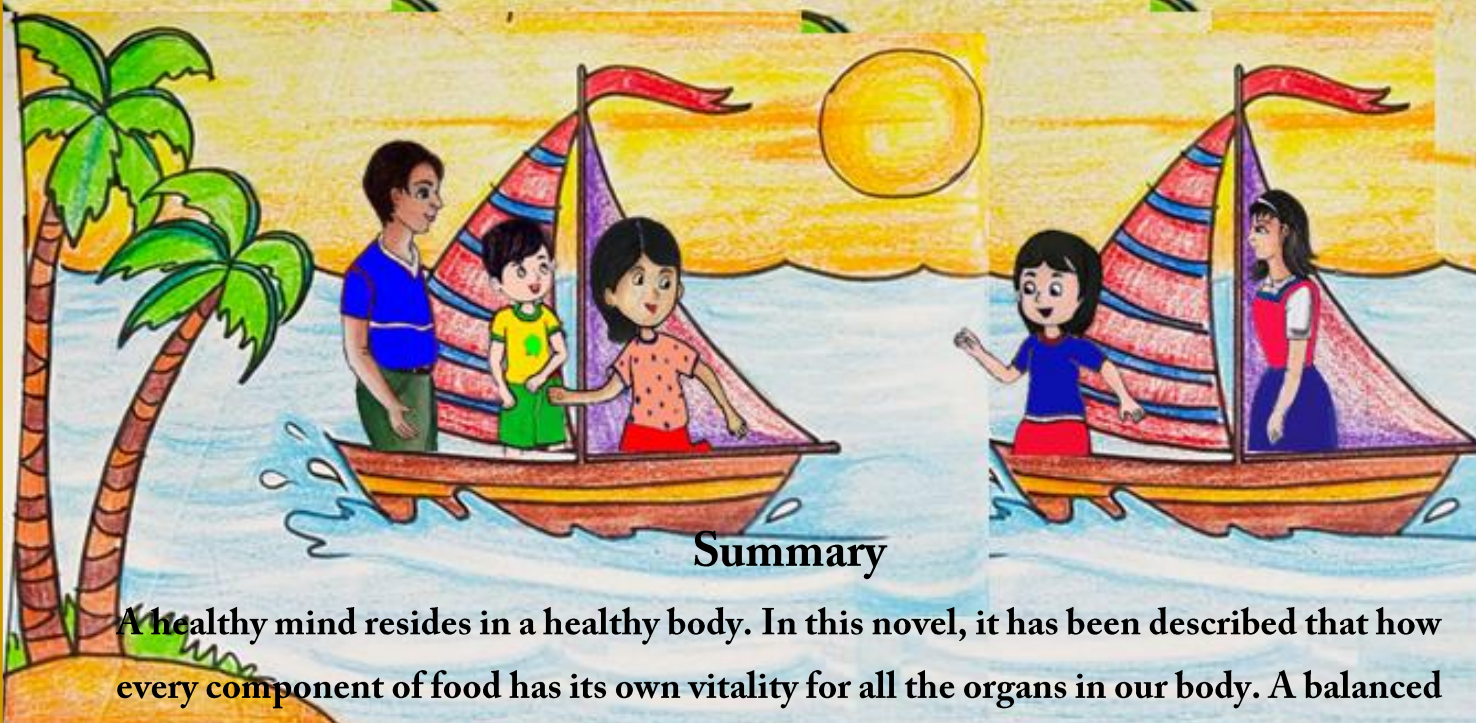
It is a great joy to see that our teachers thought 'out of the box' and brought out such a beautiful graphic novel for the students of class VI on 'Components of food'. I am so glad to see the creativity of the teachers who made use of this graphic novel pedagogy to impart the essence of the Science lesson on 'COMPONENTS OF FOOD'. They have dramatized the whole lesson and made it interesting and exciting for the students who will learn all concepts and retain them in their mind easily. I like to congratulate the entire team of teachers, headed by Ms. Priyanka Jennifer Correa, who had worked very diligently covering all the concepts from the lesson and presented to the students on a tasty platter.

A very inspiring story line is followed in the novel which will help the students to remember the contents of the lesson eternally. An urban family of Ram and Shreya living in Pune, moves down to their village due to Covid 19. In the village set up of their ancestral family they find fresh food, fresh air, fresh water and non-contaminated and organic vegetable and fruits. The children Rahul and Latika though they were reluctant to go to the village initially find their life in the village very healthy and enjoyable due to the fresh and pure food they get there. The company of their relatives and grand-parents makes their lives interesting and informative and they enjoy their village life so much that they fall in love with the nutritious food they get there and remain healthy.

I wish to put on record my sincere gratitude to Mr. Sandeep Sethi who inspired our teachers to produce such beautiful piece of art with his constant guidance and motivation. I also appreciate the tireless efforts of our subject teachers, IT teachers, language teachers and above all our ART and DRAWING teachers who made this creative work possible. Congratulations to each one of you!!!

Fr. Thomas Maniparambil

Principal



Summary

A healthy mind resides in a healthy body. In this novel, it has been described that how every component of food has its own vitality for all the organs in our body. A balanced diet is essential for human body to sustain good health for agility and a disease-free body. A human body can be active, only if we eat fresh, healthy and nutritious food. We get energy from nutritious food, devoid of fats which causes obesity. A healthy body can work better, makes us look fresh, young and strong. Our mind and body are rejuvenated by the intake of healthy and measured food with all the essential components which are needed for the proper functioning of our body. If health is ruined, then everything is lost.



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