



Safe and Nutritious Food
A Shared Responsibility

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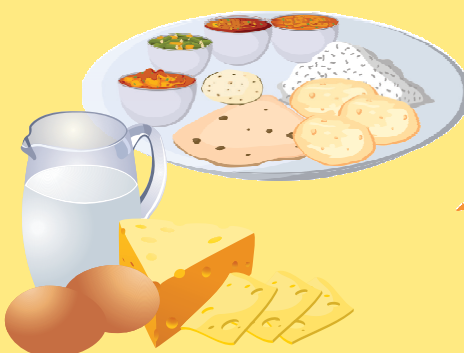
THE YELLOW BOOK



LEVEL II

Grades 6-8

**YOUR GUIDE TO
SAFE AND NUTRITIOUS FOOD
@SCHOOL**





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First published 2018

MACMILLAN PUBLISHERS INDIA PRIVATE LIMITED

Delhi Bengaluru Chennai Kolkata Mumbai
Ahmedabad Bhopal Chandigarh Coimbatore
Cuttack Guwahati Hyderabad Jaipur Lucknow Madurai
Nagpur Patna Pune Thiruvananthapuram Visakhapatnam

ISBN: 978-93-87914-13-1

Page layout, illustrations, picture research and cover design by
Food Safety and Standards Authority of India

Published by Macmillan Publishers India Private Ltd,
21, Patullos Road, Chennai 600002, India

Printed at

Printed in public interest by Kellogg India Pvt. Ltd.

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Preface

If ever there was a time to take charge of our food choices and habits, it is now. With our fast changing lifestyles, India faces a silent epidemic of childhood obesity coupled with under nutrition and micronutrient deficiencies. Each one of us, be it parents, teachers or children, has a right and responsibility to make informed choices towards safe and nutritious food (SNF). 'The Yellow Book' of the Food Safety and Standards Authority of India (FSSAI) can serve as a guide to make informed choices for a better health.

The Yellow Book Level 2 aims at inculcating wholesome food habits at a younger age, as habits formed in our early years stay with us for life. The book would aid the School Health and Wellness Teams in introducing concepts pertaining to safe and nutritious food in a way which is easy to understand and put into routine practice by children. The content is divided into age appropriate modules. The activities and guidelines have been designed to encourage adoption of safe and nutritious food practices at schools. The book is a resource-pool of facts, information and concepts, along with a diverse range of supportive material and tools.

The SNF program mascots, 'Master Sehat' and 'Miss Sehat', are the superheroes and 'health champs' to carry the messages forward. They come with a 'School Crew', additional characters who provide an interactive means of bringing the central themes into focus.

A team of food technologists and nutritionists has brought the key information together from various premier institutions in the country and is being carefully reviewed by the experts. The FSSAI would welcome any suggestions and feedback on this publication so that 'The Yellow Book' becomes a trusted companion and a part of the School Curriculum in the country.

Let's join hands in building a Healthy and Happy India.

Pawan agarwal

CEO, FSSAI

About the YELLOW BOOK

With the belief that habits formed in our early years stay with us for life, 'The Yellow Book' aims at inculcating healthy food habits at a young age. The book is an authentic technical resource, easy to understand, written and designed in an interactive, illustrative way to address the issues around food safety and nutrition. The 'Yellow Book' is authored by academicians, practitioners and domain experts.

The series has two levels: **Level 1** (5 Modules) is crafted for students of primary classes. It presents basic concepts in food safety and nutrition with more emphasis on activities to encourage 'learning by doing'. **Level 2** (7 Modules) is an advanced version of Level 1, delving into details of concepts already learnt and introducing contemporary issues around food safety and nutrition.

'SNF Alerts' help to identify the actions/activities which can be deleterious to health and thus should be avoided; 'Did You Know' presents facts, figures or undocumented lingo as extra information about the topic; and "Fun Times" are either classroom-based or outdoor activities to reinforce the concept in an enjoyable way. Each module culminates via a section 'Now you Know!' to assist teachers to recapitulate important concepts with students. There is a section on 'Tools and Trackers' to help children gauge their own eating habits.

The seven modules in Level 2 include:

Module 1 — I Eat Safe Food highlights the importance of Food Safety and ways to ensure it in our day-to-day life.

Module 2 — I Stay Clean is about Personal Hygiene. This urges the children to inculcate good habits to prevent spread of disease through microorganisms present in and on our bodies.

Module 3 — I Handle Food Hygienically tells about Food Safety and ways to control the spread of disease-causing microorganisms. Food-borne illnesses are also explained in this module.

Module 4 — I Keep My Surroundings Clean discusses about hygiene of our surroundings, pest control, street foods and waste management and its importance in maintaining good health.

Module 5 — I Am Nourished talks about nutrition basics, micro and macronutrients, and energy value of different foods.

Module 6 — I Am Healthy deals with symptoms of deficiency diseases and how to overcome them. It also deals with healthy and unhealthy food choices.

Module 7— I Plan My Meals reiterates the importance of consuming a balanced diet. The healthy eating plate concept is well-explained and takes us through the key points to remember while planning healthy tiffin menus.

Tools and Trackers: Parents and teachers need to assist the young ones of Level 1 while children in the other age group can easily take up these tested habit forming tools as self evaluation exercises to ensure lessons are soundly instilled and retained.

The books supplement the curriculum of Primary and Middle School. The school authorities are encouraged to include 'The Yellow Book' as part of their curriculum to reinforce the issues concerning food safety and nutrition in an interactive way. It can be used independently as a guide, an activity book or in conjunction with the learning aids provided as part of a comprehensive toolkit in the form of Training manual, Power Point presentations, activities, posters and handouts.



ROLE OF SCHOOLS

In this context, schools will play a vital role in ensuring the information reaches every household through the children. The teacher is their role model and children have a lot of faith in what is taught in school and what their teachers have to say and do. Schools need to set examples by taking measures to ensure that food hygiene, personal hygiene and environmental hygiene i.e. hygiene of the classrooms and surroundings is maintained. Food served in schools must be healthy and palatable.

Physical activity plays an important role in the overall growth and development of the child and this should not be neglected. Children will speak about the cleanliness, care and good food habits taught in school to their parents and this message in turn will percolate to the community.

Two sets of Tools and Trackers for assessment are provided at the end of the book. Encourage children to use them to assess their eating habits before and after using the book.

Panel of Experts and Contributors

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Information provided in this book is for educational purposes only. Please consult a medical professional for specific health and nutritional advice.

TEAM SEHAT

Hi !

**Did you ever think
food and health could be fun?**

**MISS
SEHAT**



**MASTER
SEHAT**

Let Team Sehat show you how. They will teach you a fun way of safe and healthy eating. Let's play games and do lots of enjoyable activities that will give us tips on health and nutrition.

Master and Miss Sehat are keen to become partners on a journey into a world of safe and nutritious food, so that, you can enjoy your life to the fullest !

Turn the pages and let the fun with food, nutrition and hygiene begin.



ROHAN



**Dr.
SARA**



RIYA



FOOD SAFETY AND STANDARDS
AUTHORITY OF INDIA

Inspiring Trust, Assuring Safe & Nutritious Food

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Module

1

I EAT SAFE FOOD

FOOD SAFETY

EFFORTS TOWARDS
FOOD SAFETY

MICROORGANISMS
IN FOOD

HOW DO
MICROORGANISMS
GET TRANSFERRED ?

TEAM SEHAT KA

F  **D**
FUNDA



Did You Know?

- More than 3 billion years ago, microorganisms were the first living things to inhabit the Earth.
- Microorganisms are found everywhere – air, water, sewage, soil, plants, animals, humans and their food.
- Antoni van Leeuwenhoek discovered bacteria and invented the microscope!
- Microorganisms are so small that it takes 1 million of them to cover the head of a pin!
- On an average, 1 bacterium (plural–bacteria) can multiply to over 2.5 lakhs in 6 hours!
- More than 200 known diseases spread through microorganisms.
- Most microorganisms are beneficial. They are used in the preparation of bread, cake, cheese and pickles. They are also used in large scale production of acetic acid (vinegar), wine and alcohol. Microorganisms are used in the preparation of medicines (antibiotics such as penicillin). Microorganisms also help in cleaning the environment (decomposers) and in nitrogen fixation (increasing soil fertility).



EFFORTS TOWARDS FOOD SAFETY

All of us enjoy eating! Food provides the necessary nutrients for our well-being and day-to-day activities. We eat food both at home and at places away from home.

At times we fall sick from what we eat. These food-borne diseases are caused by harmful microorganisms.

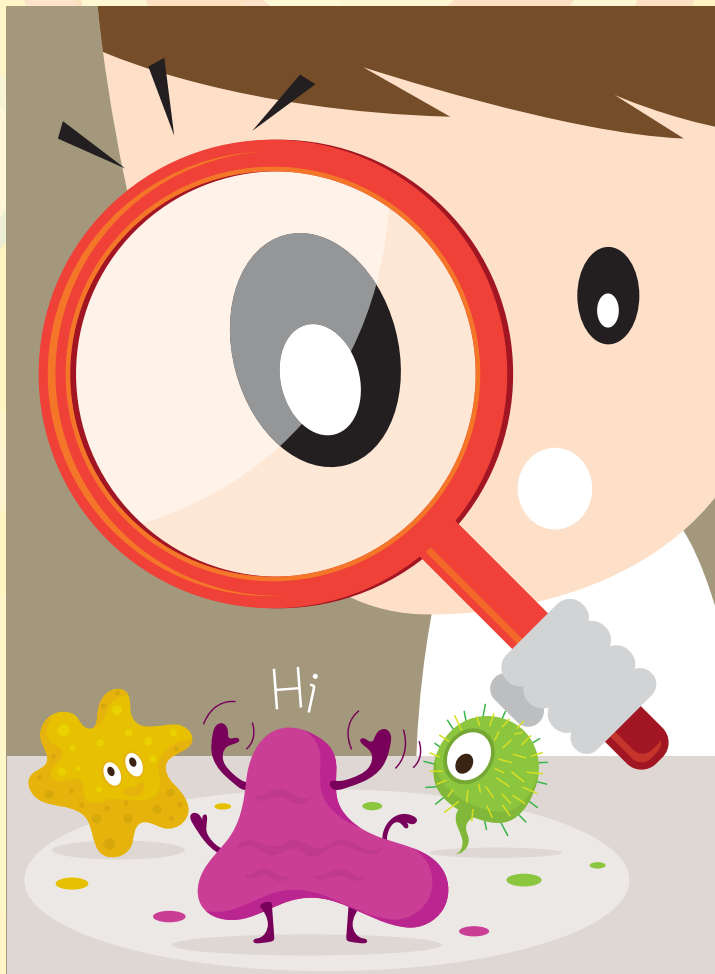
Food safety provides an assurance that food will not cause harm, if prepared or eaten according to its proposed use. Hence, ensuring food safety is essential for prevention of food-borne diseases.



Did you know that before a meal is served on your table, many dedicated people work to ensure that the food is nutritious and safe? Even before the food is grown, tests are done on soil, seeds and water. Farmers grow safe and wholesome foods and raise healthy animals. Food producers do everything they can to prevent food-related illnesses. People who process food take many steps to keep food safe such as washing hands and wearing aprons. Scientists examine samples to ensure that the environment where food is produced is safe and clean. The grocery store works to deliver safe products to our family. But microorganisms are present everywhere and are constantly on the move. It is now your turn to ensure safe consumption and storage of food. Let us read more to understand the concept of Food Safety and Nutrition.



MICROORGANISMS IN FOOD



Bacteria

Bacteria are found everywhere. They are unicellular and are of different shapes and sizes.

Some bacteria are capable of forming spores, which is a resistant form of the bacteria. Spores remain dormant till conditions for growth become favourable.

When bacteria come in contact with a favourable medium at a suitable temperature, they multiply very fast.



FUNGI

Yeasts: Yeasts are unicellular microorganisms which are larger in size than bacteria. They ferment sugar and starch to form alcohol and carbon dioxide. This property is made use of in bread-making and for fermenting alcohol.

Food yeasts enrich the fermented products making them rich in vitamin B complex.

Some yeasts also spoil food products such as jam and pickles.

Molds

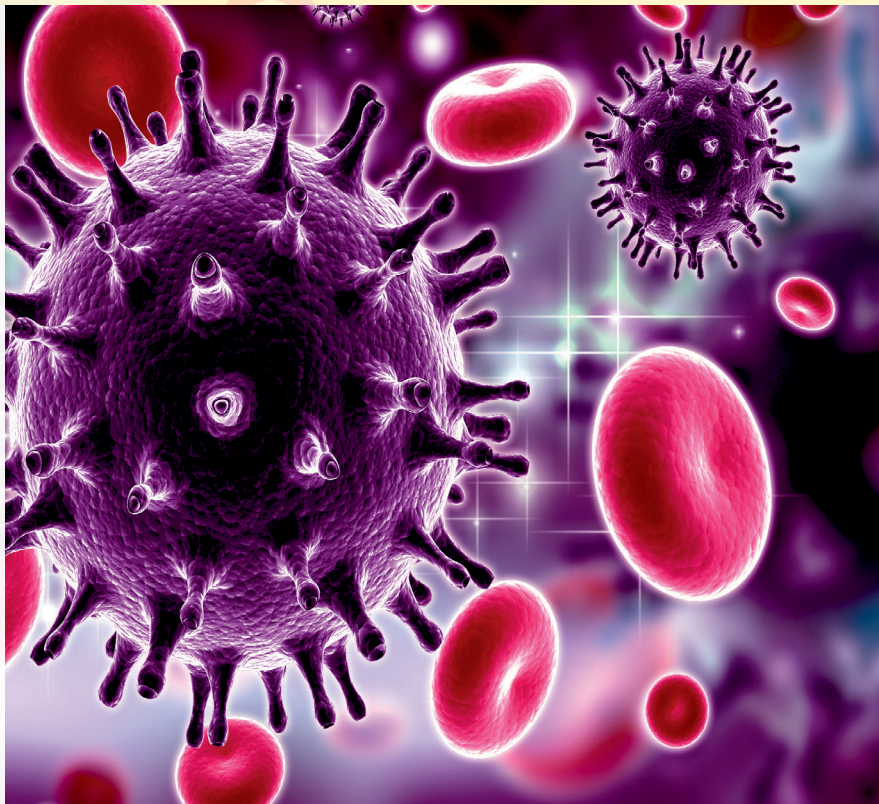
Molds are microscopic fungi. They live on plant and animal matter. Unlike bacteria that are unicellular, molds are multi-cellular and can be sometimes seen by the naked eye as cottony, dry, powdery, velvety or shiny with colours ranging from white, yellow, blue, green or black.

Molds are found everywhere. They thrive in warm and humid conditions. Some molds can also grow in refrigerated jams, jelly and pickles. Some molds cause allergic reactions and respiratory diseases.



Viruses

Viruses are the smallest of all microorganisms. They are total parasites and grow only in living cells. They fall in the twilight zone—they are non-living when they are in contact with non-living objects and living when they find a host to grow in. They are found everywhere and can cause diseases such as hepatitis, common cold and influenza.



“**WATCH OUT FOR CONTAMINATION!**”



SNF FUNDA!

Eggs of roundworms, threadworms, taenia and giardia are transmitted through sewage, contaminated soil, water and food, and through the faecal-oral route (improperly washed hands after visiting the toilet).

- Practise correct hygiene practices!
- Wash hands with soap and water after visiting the toilet.

FUN TIME 1

Growth of microorganisms!

Leave a piece of bread / roti / a spoon of jam / an orange peel in a box for a few days.

Observe the changes and discuss in class.



HOW DO MICROORGANISMS GET TRANSFERRED ?

Microorganisms get transmitted through the 5 Fs



FINGERS: Unwashed hands and dirty fingernails contain germs that cause diseases.



FOOD: Water and food get contaminated by improper handling.

01

FAECES: Food contaminated by sewage or dirty water carry disease-causing germs. Not washing hands with soap and water after using the toilet!



03

FOMITES: Touching objects that carry germs such as unclean utensils, door knobs, taps, towels and others.



04

FLIES and PESTS: Houseflies, cockroaches, rats carry germs that spread diseases.



05

HOW DO MICROORGANISMS GROW?

Most microorganisms 'grow' by multiplication.

To grow, they need the following:

1

FOOD: Microorganisms need nutrients such as carbohydrates, proteins, fats, minerals and vitamins for their growth. They grow rapidly in protein-rich foods such as milk, meat, poultry, and leftover, moist cooked food, if other conditions for growth are favourable.

2

WATER: Water is essential for the existence of all living organisms. Microorganisms thrive in foods that have water content. When water is removed from food by drying, the chances of spoilage are reduced.

3

TIME: Microorganisms need time to grow to numbers large enough to spoil food. During favourable conditions, bacteria multiply by dividing into 2 every 20 minutes.

4

TEMPERATURE: Microorganisms grow fastest between 5°C and 63°C. This temperature range is called the 'danger zone' because it poses danger to our health. The temperature in our classroom, in the kitchen and in our body lies in the danger zone. The time and temperature for which food remains in this zone should be controlled.

5

pH: pH (potential of hydrogen) is a measure of whether or not a solution is acidic, alkaline or neutral in reaction. Most microorganisms grow best at a neutral pH of 7. Molds and yeast grow in foods with an acidic pH of 4, while bacteria do not grow in acidic foods.

6

OXYGEN: Most microorganisms need oxygen for growth. Microbes which need oxygen are called aerobes, while those which do not need oxygen are called anaerobes.

“WATCH THEM GROW”

FUN TIME 2

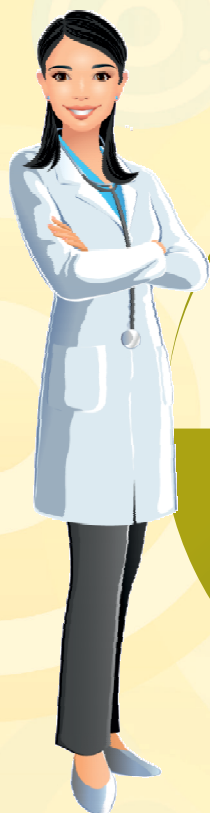
Doubling of Microorganisms!

Demonstrate microbial growth by using dried beans, pebbles or other objects. As an example of quick growth, start with one object, divide it into two objects in 20 seconds, in another 20 seconds divide it into 4 objects and in another 20 seconds divide it into 8 objects and so on (double the number of objects you have every 20 seconds). This will show how rapidly bacteria grow.



FUN TIME 3

Discuss foods (lunch box meals, street foods) that do and do not provide ideal conditions for the growth of microorganisms. You may use the following foods as example—salads, soaked rice, pasta, paneer roll, *aloo tikki*, fruit juice and sprouts.

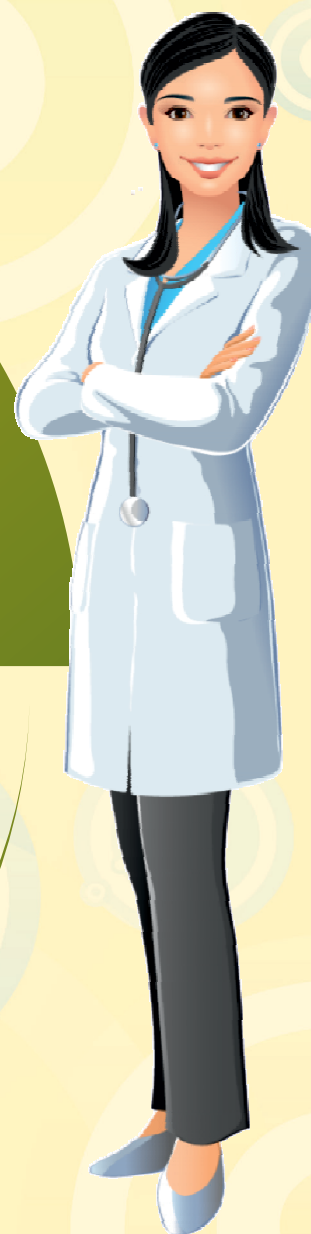


FUN TIME 4

infections wastage two
microorganisms reheat

Fill in the blanks with the correct words from the box:

1. Bacteria multiply by dividing into _____ every 20 minutes.
2. _____ leftover food well.
3. Microorganisms spoil our food and cause _____ of food.
4. Disease-causing _____ are spread through food, dirty hands, faeces, fomites and flies.
5. Frequent _____ affect our health and appetite.



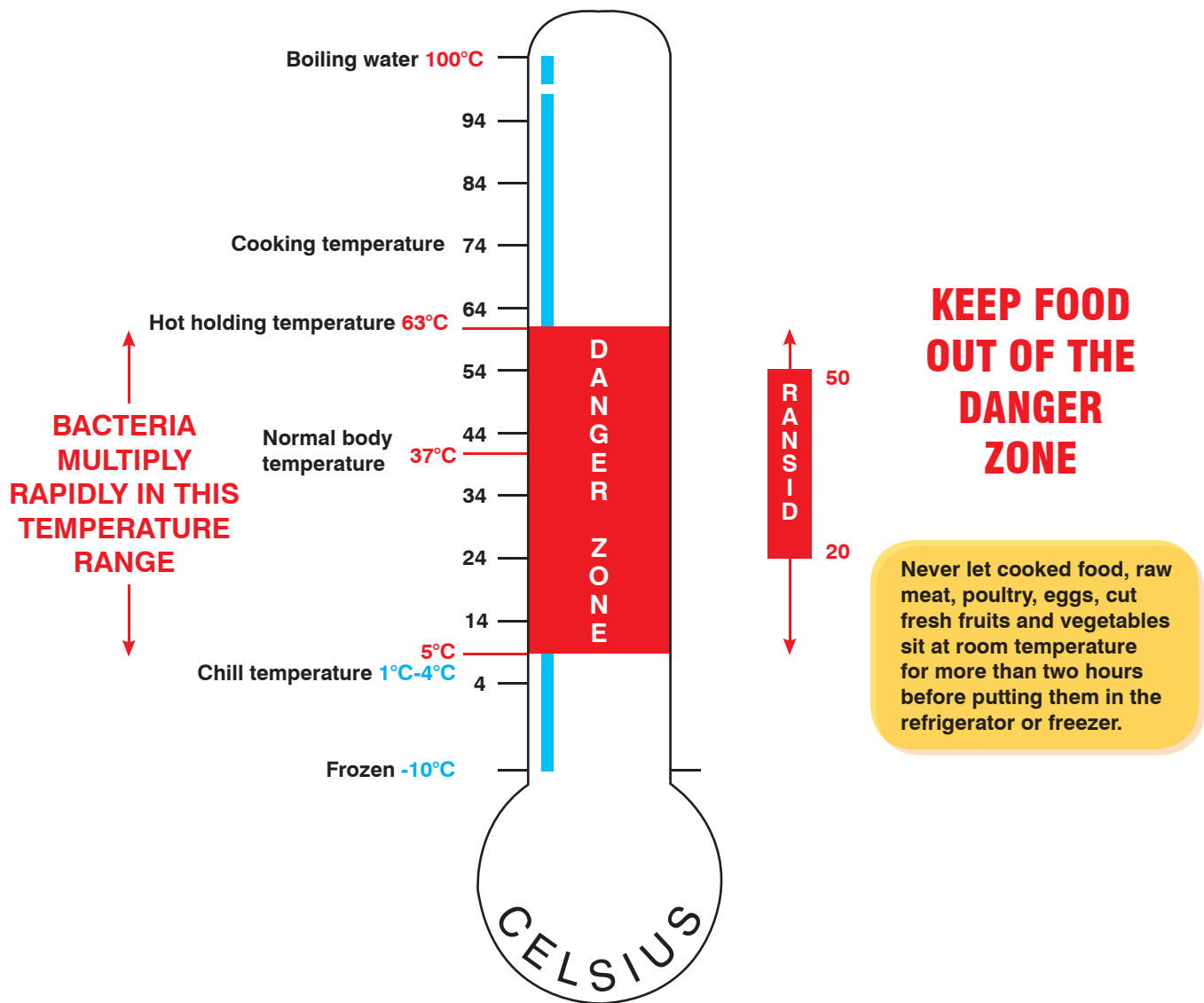
Answers

1. two 2. reheat 3. wastage 4. microorganisms 5. infections

HOW TO CONTROL GROWTH OF MICROORGANISMS?

Most microorganisms are useful whereas some are harmful because they can cause food spoilage and food-borne diseases. To reduce their numbers or completely remove them from food, it is important to control temperature.

Temperature Control



KEEP HOT FOOD HOT

KEEP COLD FOOD COLD

WAYS TO CONTROL BACTERIA

- **Controlling temperature:** Bacteria grow (multiply) fastest in the danger zone i.e. temperatures between 5°C and 63°C. Bacterial growth can be controlled by controlling temperature.
- **Low temperatures:** In a refrigerator or freezer, bacterial growth slows down and most bacteria become dormant. They do not die.
- **High temperatures:** When food is heated to high temperatures, most bacteria are destroyed. However, spores may survive normal cooking temperatures.
 - Removing oxygen—Aerobic bacteria die when oxygen is removed i.e. when food is vacuum-packed and canned. Anaerobic bacteria if present, can grow in tinned foods.
 - Adding chemical preservatives—Preservatives are added in permitted amounts to sauces and ketchups and fruit-based squashes to extend their shelf life and prevent microbial spoilage.
 - Reducing the moisture content—The moisture content of foods like milk is reduced by evaporation and dehydration to increase the shelf life. Sugar and salt are added to jams and pickles to preserve them.
 - Exposure to ultraviolet rays—Sunlight has ultraviolet rays which are lethal to bacteria. Ultraviolet rays are useful in sterilising the surface of food and equipment.

NOW YOU KNOW!

Ensuring food safety is essential for preventing food-borne diseases.

Bacteria, viruses, yeasts and molds are all microorganisms.

Microbes are present everywhere and need to be kept in check.

Microbial growth in food can be controlled by controlling temperature.



Module

2

I Stay Clean

PERSONAL
HYGIENE

7 KEY
HYGIENE HABITS

SLEEP,
RECREATION
AND RELAXATION

TEAM SEHAT KA

F  **D**
FUNDA



PERSONAL HYGIENE

Personal hygiene refers to practices of keeping oneself and one's surroundings clean in order to prevent illness and diseases.

“ NEED FOR PERSONAL HYGIENE ”

Microorganisms that cause food-borne illnesses are found in our body. They spread to food mainly through the hands and nails of the person or by coughing or sneezing. If we maintain good personal hygiene, the chances of microorganisms entering our body are reduced.

Good personal hygiene should therefore become a habit. It is important to have a bath everyday, trim finger and toenails regularly and brush teeth twice a day. Brushing reduces the number of bacteria in the mouth. Washing hands before preparing or eating food, after visiting the toilet, after coughing or sneezing and after handling garbage or playing outdoors help in reducing the microorganisms entering the body.



FUN TIME 5

Need for Personal Hygiene

- * Collect different water samples and observe them under a microscope.





Did You Know?

- Microorganisms can spread up to a radius of 1 metre or more.
- An average of 1,00,000 bacteria can be found on each square centimetre of human skin!
- When moisture from water droplets evaporates, microorganisms like bacteria or viruses remain suspended in the air.
- 'Clean' means free from visible dirt whereas 'hygienic' means free from disease-causing organisms!



SNF FUNDA!

Germes are everywhere...

- Germs accumulate around cuts, wounds and sores.
- Minor cuts and wounds should be washed properly with soap and water.
- Stay at home in case you are sick and suffer from contagious diseases such as viral fever, common cold, measles and chicken pox.



HOW TO MAINTAIN PERSONAL HYGIENE?

Personal hygiene includes all personal practices which need to be followed to keep our body clean and healthy. The following practices should be followed every day:

GOOD HYGIENE HABITS (SCORE CARD)



Tick Y for Yes and N for No.

	Y	N
• I bathe everyday.		
• I take a bath even when I have a cold.		
• I brush my teeth twice daily.		
• I clean my tongue with a tongue cleaner.		
• I visit the toilet daily.		
• I wash my hands with soap and water after every visit to the toilet.		
• I wear clean, washed and ironed clothes.		
• I wash my hair regularly and comb my hair daily.		
• I clean my nose daily while bathing and do not pick my nose.		
• I clip my nails regularly and keep them dirt free.		

GOOD TOILET HABITS

Visit the toilet regularly to remove waste from the body. Make it a habit to clear your bowels preferably every morning. Flush the toilet after use and wash hands with soap and water.



GOOD HYGIENE HABITS (SCORE CARD)



FUN TIME 7

Let's check
your score

Tick Y for Yes and N for No.

- I clear my bowels every morning.
- I flush the toilet after use and keep the toilet clean.
- I wash my hands with soap and water after using the toilet.
- I dry my hands well using a clean hand towel or disposable paper tissue.
- I follow the 20/20 rule for washing and drying hands (20 seconds washing / 20 seconds drying).

Y

N



HAND WASHING

Our hands are the main vehicles by which germs get transferred to food. Washing hands prevents reduction and transfer of germs / microorganisms, saving us from food-borne diseases such as typhoid fever, diarrhoea, dysentery and viral infections.

Don't forget to wash hands....



Before and after eating.



After combing or touching hair.



After using the toilet.



After handling garbage
and waste.



After blowing your nose,
coughing and sneezing.



After playing with pets.

NOTE
TEACHER for

Identify 5 Germi-Check Marshalls from your class.
 Their responsibility will be to:

1. identify hand washing related issues.
2. take corrective action.
3. maintain hand washing records.

Record who follows good hand washing practices!

Student's Name	
Hand Washing Time	Before lunch
	After lunch
	After visiting the toilet
	After games or PE class

Weekly Checklist of School Facilities

NOTE
TEACHER for

Tick Y for Yes and N for No.

- Are adequate hand washing facilities provided in your school?
- Are these facilities well-maintained?
- Is soap used for washing hands?
- Are hygienic hand-drying facilities provided in the hand-wash area?
- If towels are used, are they changed frequently?
- Do children wash hands well with soap before having meals?
- Are finger nails of children clean, trimmed and unvarnished?
- Are washbasins provided in wash rooms and dining area?
- Are hands washed in sinks used for food preparation?
- Do children pick their nose, scratch their head or face?
- Are children encouraged to wash hands after blowing their nose?

Y	N





FUN TIME 8

Score your
hand wash

Materials required:



Apron



Stop watch



Sink



Blindfold



1 tube of
washable colours



Towels



Soap



Score card

PROCEDURE

1. Choose 8 student volunteers to participate in this activity. One volunteer should be the hand washer and the second one, the timekeeper. The washer should be blindfolded and asked to put about a teaspoon of washable paint on the palm of one hand and spread it evenly over both hands. Allow hands to dry completely for about a minute or two.
2. Have the washer wash for 5 seconds. After 5 seconds, have the timekeeper blot dry the washer's hands by very lightly touching the towel to the skin (don't rub!).
3. Don't let the hand washer see his/her hands or give away any hints about how clean they are.
4. Have another set of volunteers to do the same and then wash for 10 seconds with just water, the third set to wash for 15 seconds with only water and the fourth to wash with soap and water scrubbing for 20 seconds and more.
5. Using the scoring guide, record the cleanliness on a scoring chart.



Result: Paint washes off completely from hands that were washed for 20 seconds with soap and water.

HOW TO KEEP TEETH AND GUMS HEALTHY?

Bacteria present in the mouth breakdown sugars to acid causing dental caries (cavities). The acid corrodes the enamel, destroys hard tooth tissue and causes tooth decay. Dental caries (cavities) cause discomfort and pain leading to infection and tooth loss.



To prevent dental caries:

- Brush your teeth at least twice a day for two minutes.
- Brush preferably after each meal.
- Use a soft toothbrush with a small head to reach all teeth.
- Rinse your toothbrush in water and let it air dry.
- Replace your toothbrush when the bristles spew in different directions or every three months.
- Use a tongue cleaner to remove bacterial build-up on the tongue.
- Enjoy a balanced diet. An adequate supply of nutrients is essential for healthy teeth and gums.
- Visit a dentist every six months for a check-up or if there is pain, or discomfort.



BATHE DAILY

Bathe daily to wash away sweat, dirt and body odour. Body odour is caused by bacteria breeding on our body and in unwashed clothes. Change and wash undergarments every day.

Feet should be washed and cleaned properly especially between the toes. Toe nails should be kept trimmed.

Hair can be a breeding ground for bacteria, if not washed and kept clean.



DOES YOUR SCHOOL PROVIDE THIS?

- Maintenance of health record
- Annual medical check-up
- Dental check-up
- Adequate well-maintained washrooms, separate for girls and boys



FUN TIME 9

Tick or Cross!

Place a tick (✓) beside the correct statements and place a cross (x) beside the wrong statements.

1. You can stop the spread of germs by using a handkerchief or a tissue when you cough or sneeze. ()
2. To prevent painful cavities and bad breath, brush your teeth twice a day and gargle after every meal. ()
3. If your hands look clean, you need not wash them before a meal. ()
4. To avoid body odour and smell clean, bathe daily, use soap and change your clothes. ()
5. Regular exercise, rest and some recreation are essential for good health. ()

7 KEY HYGIENE HABITS

1. Wash hands well after every visit to the toilet.
2. Have a daily bath to wash away sweat, dirt and secretions from the skin, wash eyes and ears properly.
3. Wear clean clothes and clean/footwear.
4. Wash and comb hair and keep long hair tied.
5. Brush teeth twice a day to remove food particles lodged between teeth, to avoid tooth decay and bad breath.
6. Clean tongue with a tongue cleaner and rinse mouth well. Keep nails dirt free and neatly trimmed.
7. Clean and apply antiseptic medicine on all cuts, sores and wounds and cover with a waterproof dressing.



SLEEP, RECREATION AND RELAXATION

Did You Know?



- Rest and relaxation revives a person, lessens psychological and physical tiredness and makes them active and alert throughout the day.
- 8 to 10 hours of undisturbed sleep to feel refreshed on waking up.
- Fatigue or tiredness reduces the capacity to concentrate in school.
- Some form of recreation is necessary for a healthy mind. It refreshes the mind just like exercise refreshes the body.
- Pursue a hobby, listen to music, dance, paint or play a game or sport.

Module

3

I Handle Food Hygienically

ENSURING
FOOD
SAFETY

WHAT IS
FOOD SPOILAGE?

FOOD-BORNE
ILLNESS

WHAT IS FOOD
CONTAMINATION?

READING FOOD
LABELS

TEAM SEHAT KA

F  **D**
FUNDA



ENSURING FOOD SAFETY

‘Food safety’ means an assurance that food will not cause harm to the consumer when it is prepared and/or eaten according to its intended use.

‘Food safety’ means the characteristics of food such as appearance, flavour, texture, nutritive value and safety of the food that is acceptable to all consumers.

When food is handled hygienically from the farm to the plate, it retains its quality, nutritive value and is safe to eat. If farm fresh perishable fruits and vegetables are not refrigerated, they will lose their quality and nutritive value. Hygienic handling of food is essential to ensure food quality and food safety.

GOOD HANDLING PRACTICES FOR ACHIEVING FOOD SAFETY

1. Select wholesome foods from reliable sources and discard contaminated or spoiled food.
2. Protect food from contamination, including harmful microorganisms, toxins and foreign bodies.
3. Store food items properly in the refrigerator and/or in covered utensils/containers.
4. Discard /remove unsafe/ unfit or contaminated foods.

5 Keys to Safe Food



KEEP CLEAN



SEPARATE RAW AND COOKED FOOD



COOK THOROUGHLY



KEEP FOOD AT SAFE TEMPERATURE



USE SAFE WATER AND RAW MATERIAL



WHAT IS FOOD SPOILAGE?

‘**Food spoilage**’ is the decomposition and damage caused to food by various agents, making it unsuitable for consumption. Spoiled food is not edible due to changes in smell, taste, appearance and texture.



HOW DOES FOOD SPOILAGE OCCUR?

- **Microbial action** – Growth of microorganisms is the most important and common cause of food spoilage, for example, souring of milk and moldy bread.
- **Chemical reactions** – Chemical oxidation of fats leading to rancidity, for example, butter turning bad.
- **Physical damage** – Foods are improperly handled and stored, for example, bruising of fruits and vegetables
- **Presence of contaminants** – for example, stones, grit, pieces of glass.
- **Natural enzymatic changes** – Fruits and vegetables undergo chemical changes, for example, over-ripening of fruits.
- **Action of insects** – Food grains, fruits and vegetables damaged by weevils, insects and rodents.



CLASSIFICATION OF FOODS BASED ON THEIR SHELF LIFE

- **NON-PERISHABLE FOODS**
 - Longer shelf life upto 1 year when stored in a cool, dry place.
 - Sugar, legumes, whole grains, oil, flour, rice etc.
- **SEMI-PERISHABLE FOODS**
 - Stay fresh up to a few weeks or few months when stored in well-ventilated, cool rooms or refrigerator.
 - Dry fruits, gram flour, vegetables such as onions and potatoes, and frozen foods
- **PERISHABLE FOODS**
 - Spoil within a day
 - Milk, meat, fish, poultry and most fruits and vegetables especially green leafy vegetables

WHAT IS CONTAMINATION?

Contamination is the presence of an unwanted constituent, contaminant or impurity or a physical body in the food. Anything added to a product during different stages of a food chain from a farm to the table which may cause harm to the consumer is termed a contaminant. Contaminants are classified into three main categories.

1. Biological contaminants

Biological contaminants include both visible and invisible contaminants in food such as rat droppings, beetles and weevils, insect body parts, flies and worms and invisible contaminants such as bacteria.

For foods of animal origin, contamination by disease-causing bacteria may occur at the time of slaughter or shortly thereafter. Food can also be contaminated by microorganisms from food handlers, equipment or from the environment.



2. Chemical contaminants

Chemical contaminants include any form of chemical compounds, which contaminate food products and result in illness or harm to consumers. These may include non-permissible food additives, adulterants, cleaning chemicals, packaging adhesives, inks and refrigerants or chemicals accumulated in food like heavy metals (lead, mercury, cadmium), pesticide residues and veterinary drugs. Food crops can also contain chemical contaminants if they are irrigated with water contaminated with lead.



3. Physical contaminants

Physical contaminants can include a wide variety of contaminants such as pieces of glass, metal, bone, shell and hair. These cause harm to the consumers when they eat the food product.

Food can also get contaminated with hair or jewellery of the person handling a packaging machine.



Did You Know?



Our food can get contaminated in many ways during its journey from a farm to a consumer. However, most contamination falls into three categories—

- During growing / pre harvest
- During production / post harvest
- During handling while food is eaten / sold

‘Cross-contamination’ is the transfer of germs from a contaminated food or place to another by hands, equipment, or other foods.

FUN TIME 10

Classify the given contaminants as biological, chemical, physical.

Moldy peanuts	Pesticide	<i>Staphylococci</i>	Washing soda
Stapler pins	Rat droppings	Glass	Hair

- Biological**
- Moldy peanuts
 - *Staphylococci*
 - Rat droppings

- Chemical**
- Pesticide
 - Washing soda

- Physical**
- Stapler pin
 - Glass
 - Hair

FOOD-BORNE ILLNESS

A food-borne illness is a general term applied to all types of illnesses caused by contaminants of all kinds present in the food that we have eaten.

It includes food poisoning, food infections and food allergies.



Food poisoning

Food-poisoning is caused by toxins present in contaminated food. Toxins are produced by the growth of microorganisms in food. When such foods are consumed, the toxins irritate the lining of the gastrointestinal tract causing symptoms such as vomiting, abdominal pain and diarrhoea.

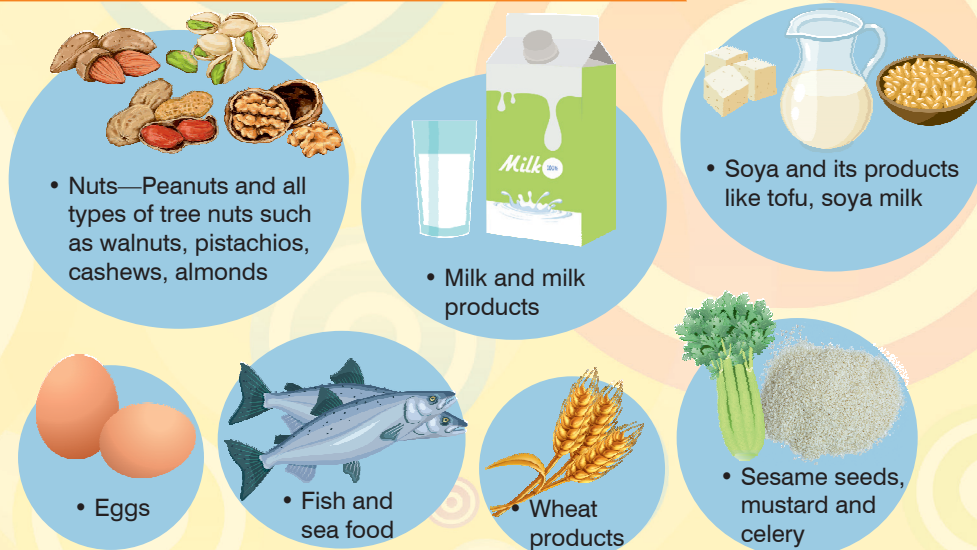
Food infection

Food infection is caused by microorganisms. It occurs when we consume food which contains living bacteria. The bacteria multiply in our body and cause infection. Symptoms of infection such as vomiting, abdominal pain, diarrhoea and fever occur when our body reacts to the presence of a large number of bacteria.

Food allergy

An allergy is defined as a reaction of an individual to a specific ingredient in food. Some people show abnormal sensitivity to certain foods which are otherwise harmless to most people. Substances which cause allergies are called 'allergens'.

Foods which commonly contain allergens



Some people are also allergic to

• Chillies • Tomatoes • Brinjals • Barley • Oats



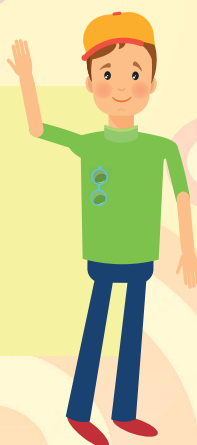
SNF FUNDA!

Symptoms of food allergy

- Redness of the skin
- Swelling of throat and mouth
- Severe breathing problems
- Sudden feeling of weakness
- Fall in blood pressure
- Rashes on the body
- Difficulty in swallowing and speaking
- Abdominal pain, nausea and vomiting

Friends of Team Sehat have something to share about food allergies.

I am allergic to nuts.
My friends and
classmates do not
give me food that
contains peanuts.



I can't have cow's milk,
so I have soy-milk.



If I have seafood, my
body gets swollen
and I am not able to
breathe properly.



I am allergic to eggs,
I avoid eating foods that
contain eggs.



To ensure an allergen free meal or snack while eating out, check the following:

- Are the food handlers using different and clean utensils (including knives and spatulas), containers, cutting boards, and serving utensils for preparing and serving foods?
- Are they using fresh and different cooking oils to fry allergenic and non-allergenic foods? Deep-frying does not destroy allergens.
For example, to control seafood allergy, fresh cooking oil in a clean frying pan should be used to deep fry shrimps rather than what was used to make French fries or other foods.
- Is the food being served on a separate plate with a different serving spoon?
- Do you know all the 'hidden', allergenic ingredients in a dish? For example, to control peanut allergy, peanuts added to a dish may go unnoticed by an allergy sufferer.



Did You Know?



- Proper food handling is the key to prevent food-borne diseases!
- Food-borne illness is the primary concern for food safety!
- For infants, the sick, pregnant women and the elderly, the consequences of food-borne diseases are usually more severe.



A Story—Chicken got left out!



On Saturday, frozen chicken from the freezer was used to cook chicken curry for lunch.



We quickly ate the chicken curry and roti and went to the mall to buy a birthday gift for Daddy.

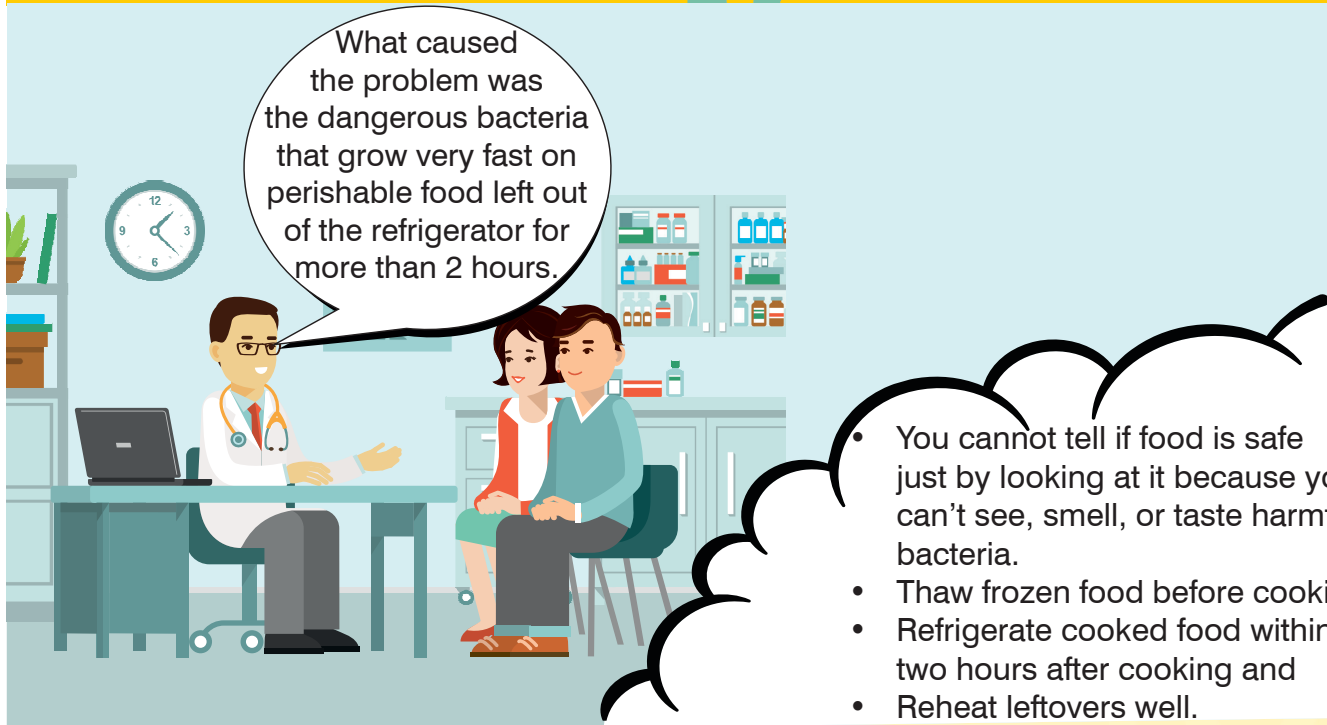


The chicken curry was left out on the table.



When daddy came home at night, the food was still out on the kitchen table. Daddy ate the leftover chicken curry without heating it.

About an hour after eating the food, Daddy started feeling queasy. He decided to sleep early and thought he would feel better. During the night, he woke up with a bad stomach cramps, and starting throwing up and went frequently to the bathroom. The next day, we took him to a doctor.



What caused the problem was the dangerous bacteria that grow very fast on perishable food left out of the refrigerator for more than 2 hours.

- You cannot tell if food is safe just by looking at it because you can't see, smell, or taste harmful bacteria.
- Thaw frozen food before cooking.
- Refrigerate cooked food within two hours after cooking and
- Reheat leftovers well.

FIGURE THIS OUT!

1. What made Daddy sick?
2. Was it food allergy, food poisoning or food infection?
3. What should have been done after the food was cooked?
4. What should have been done before consuming the food?

The doctor gave some information to the family on how to handle food at home and prevent food-borne diseases. Read further to find out.



How to prevent food-borne illness and make food safe?

Improper handling or storage temperatures rank as major factors contributing to the outbreak of food-borne illness. Food-borne illnesses can be prevented by practising the 7 Cs :

1 CHECK

2 CLEAN

3 COVER

4 COOK

5 COOL/
CHILL

6 CONSUME

7 CURB
CROSS
CONTAMINATION

Answer key for Figure This Out : 1. Infected food 2. Food Infection 3. Store in refrigerator 4. Proper heating

PROJECT : Visit To The School Cafeteria!

You are the Food Quality Inspector of your school. Now rate the cafeteria for the 7 **Cs**.

7 Cs	Parameters	Star Rating
C heck	<ul style="list-style-type: none"> • Raw material quality • Packaged food quality • Temperature of frozen food 	☆☆☆☆☆
C lean	<ul style="list-style-type: none"> • Packages, tins, bottles • Fruits and vegetables • Plates, glasses and spoons 	☆☆☆☆☆
C over	<ul style="list-style-type: none"> • Food in preparation area • Food in refrigerator • Food during service 	☆☆☆☆☆
C ook	<ul style="list-style-type: none"> • Thaw frozen foods before cooking • Food is cooked well • Taste, aroma and colour of food 	☆☆☆☆☆
C ool/Chill	<ul style="list-style-type: none"> • Perishable food is cooled within 1.5 to 2 hours • Food is refrigerated/frozen within 1.5 to 2 hours 	☆☆☆☆☆
C onsume	<ul style="list-style-type: none"> • Food is served in a clean environment. • Crockery and cutlery is clean Hot food is above 63°C. • Single service items are not reused • Food waste and plastic waste are segregated • Potable water is available 	☆☆☆☆☆
C urb C ross C ontamination	<ul style="list-style-type: none"> • Handlers wash hands well. • Separate chopping boards, knives, spoons and forks • Store raw food below cooked food. 	☆☆☆☆☆



FUN TIME 11

Match the following:

Items in Column B may be used more than once.

Column A	Column B
Food poisoning	<i>Trichinella</i>
Food infection	Botulism
Allergy	Tree nuts
Worm infestation	Hepatitis A
Food spoilage	Curdled milk

Column A	Column B
Food poisoning	<i>Trichinella</i>
Food infection	Botulism
Allergy	Tree nuts
Worm infestation	Hepatitis A
Food spoilage	Curdled milk

KEY



SNF FUNDA!

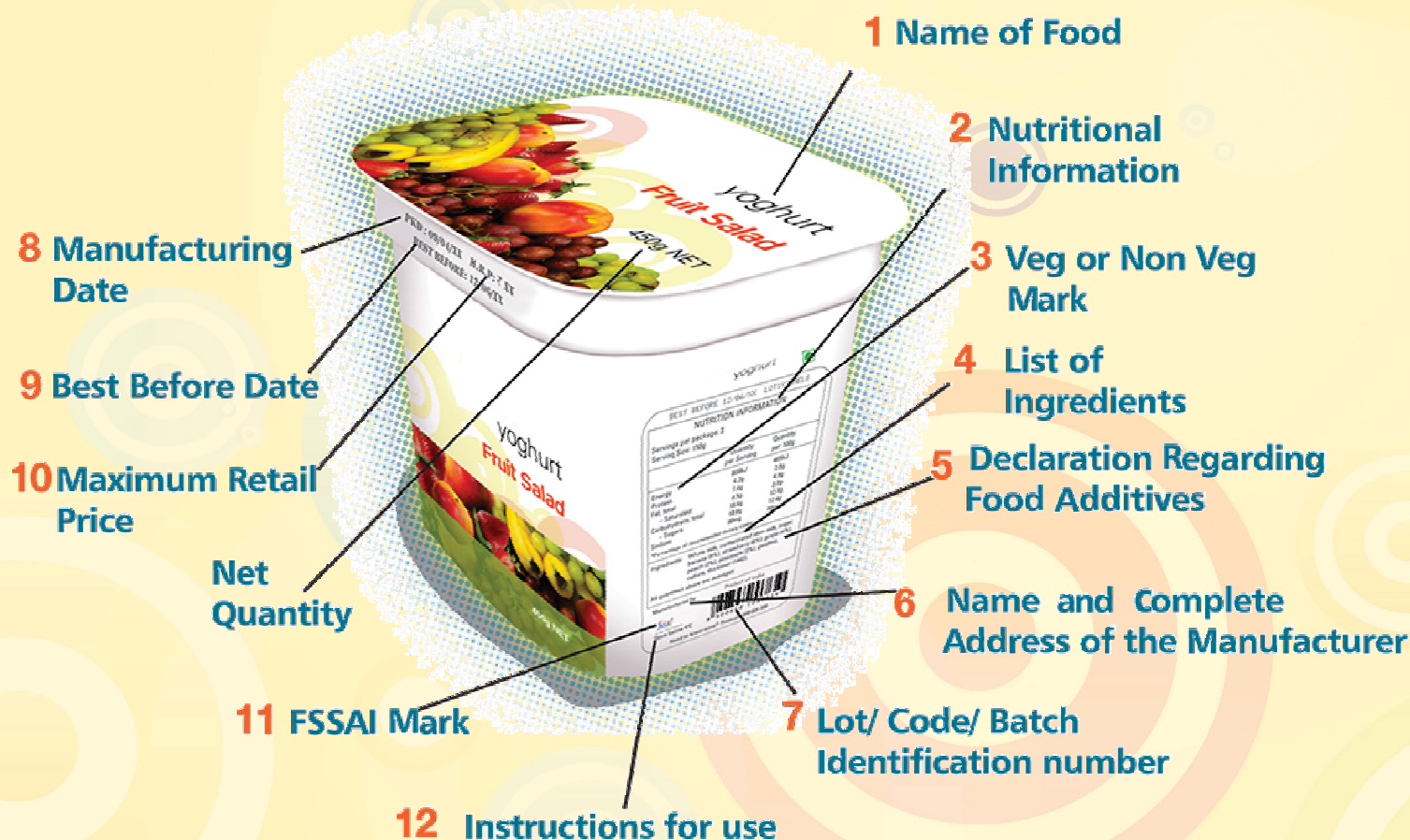
Take extra precautions to avoid the risk of food-borne illness.

- Do not eat raw sprouts, unpasteurised milk, and products made with unpasteurised milk.
- Do not eat raw or undercooked meat, eggs, fish and shellfish.

READING FOOD LABELS

Reading food labels is important because it tells us what we are purchasing in terms of nutritive value, safety and cost. It helps us make an informed selection.

Information to be displayed on the label



Nutritional facts need to be displayed on the label. In India, it is mandatory that the label should mention the total carbohydrates, sugars, fats, proteins and energy contained in the food item.

“KNOW WHAT YOU BUY”

FUN TIME 12

Visit the nearest supermarket and check labels of at least 6 of your favourite foods!

- Are the number of servings mentioned on the label?
- How many grams of sugar are present in one serving?
- How many grams of fat does the food contain/serving?
- How much saturated fat is present in one serving?
- How many grams of salt does the food contain per serving?
- Does the food make any special nutritional claims?



SNF FUNDA!

Store food in the right container, in the right place, at the right temperature, for the right length of time. Foods maintain their quality, safety, and nutrients when they are stored properly and consumed within a certain time.

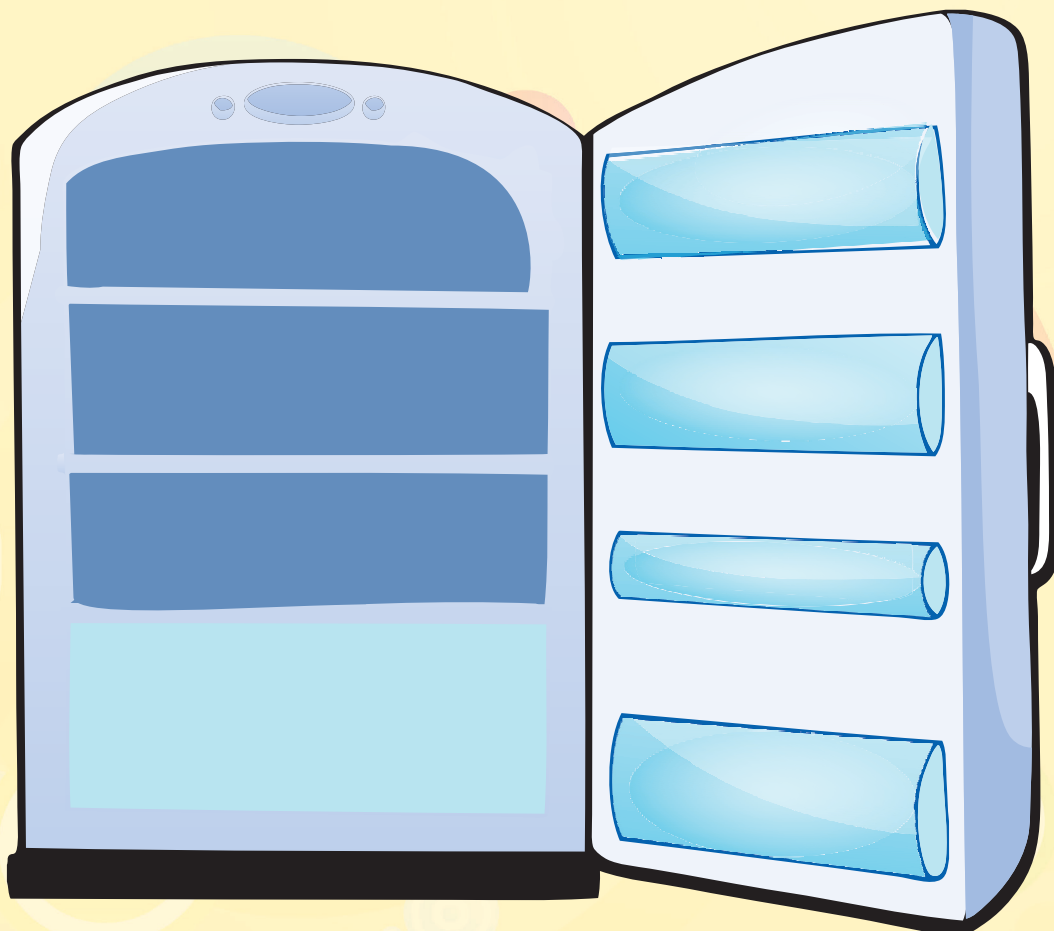
“**STORE IT RIGHT**”

FUN TIME 13

Write the names or draw
the food items in the
correct place in the
refrigerator given
below.



cooked food, yoghurt, milk, fish, vegetables, bread, eggs, fruits



Module

4

I KEEP MY SURROUNDINGS CLEAN

NEED FOR
HYGIENIC
SURROUNDINGS

PEST
CONTROL

STREET FOODS

WASTE DISPOSAL
AND
MANAGEMENT

TEAM SEHAT KA

F  **D**
FUNDA



NEED FOR HYGIENIC SURROUNDINGS

Poorly maintained or dirty surroundings can provide hiding places for pathogens that contaminate food products. Remember, safe food products cannot be made in unsafe surroundings.

Cleanliness and personal hygiene provide a clean school environment to keep students safe and in good health.

- Keep classrooms, playgrounds, canteen and school premises clean.
- Do not throw paper, chalk, pencil shavings, leftover food or any other waste material in the classroom and playground.
- Throw all waste material in the appropriate dustbin in order to dispose the waste properly.
- Do not use non-recyclable plastic packets and plastic cups.
- Maintain cleanliness in toilets.

Complete the checklist to understand the requirements of healthy eating outlets.

S.No.	PARAMETERS	YES / NO
1.	Location of eating outlet Is the design and layout conducive to good hygiene practices? Is it located away from environmentally-polluted areas and industrial activities?	
2.	Utensils used for cooking and serving Are the utensils made of non-corrosive/ non-toxic material such as stainless steel?	
3.	Internal structures and fittings Do the floors allow adequate cleaning? Are the windows fitted with detachable and easily cleanable insect-proof screens?	
4.	Air quality and ventilation Does the eating outlet have adequate means of natural or mechanical ventilation? Is the air free from food odours, cooking fumes and smoke?	
5.	Lighting Does the eating outlet have adequate natural or artificial lighting? Are the lighting fixtures well-protected?	

Remember, if we want India to be a clean and healthy place to live in, we should first keep our houses and surroundings clean.

KEEP IT CLEAN

We like our homes to be neat and clean, but what about our surroundings?

How many of us actually make an effort to clean our community or have stopped someone from littering?

1. Stop littering and sort garbage properly

Do not litter streets, apartment complexes, garden/parks, water bodies, or your surroundings. Dispose waste in dustbins only. Sort waste into **Green**-biodegradable and **Blue**-non-biodegradable.

2. Maintain hygiene

Maintain hygiene both inside and outside your home, to stop the breeding of pests that spread diseases.

3. Reuse and recycle

Reuse and recycle is the mantra in creating cleaner surroundings. If there is something that you don't need anymore; find another way of using it, or find someone who might need it. If it's broken, then try to fix it before disposing it off.

4. Reduce air pollution

Maintain motor vehicles in good condition. Use public transport/car pool to travel long distances. Do not burn garbage, dry leaves, clothes. Do not light fire crackers.



FUN TIME 14

Tick ✓ the correct statements.

1.	Floors and walls in kitchens need not be tiled.	✓/✗
2.	All windows in a kitchen should have detachable and easy to clean insect-proof screens.	
3.	There should be no cracks and crevices in equipment and work surfaces.	
4.	Work tabletops in a kitchen should be made of aluminium.	
5.	Food preparation area should be away from garbage dumps.	

1. Floors and walls in kitchens need not be tiled. (✗)
2. All windows in a kitchen should have removable and easy to clean insect-proof screens. (✓)
3. There should be no cracks and crevices in equipment and work surfaces. (✓)
4. Work table tops in a kitchen should be made of aluminium. (✗)
5. Food preparation area should be away from garbage dumps. (✓)



SNF FUNDA

- The space for eating should be clean. Avoid carpets and *durries* in the eating area.
- Wash hands with soap and water before eating (school should provide soap). Keep fingernails short and clean.
- Drink clean water (school should provide safe drinking water).



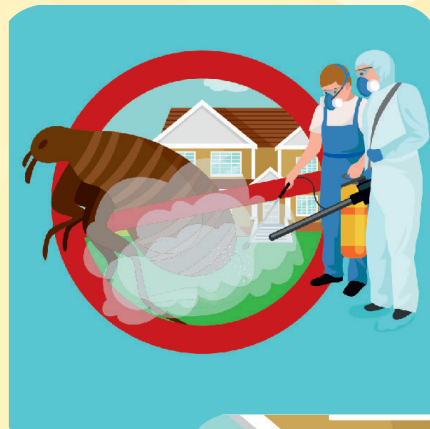
PEST CONTROL

Any animal, plant or microorganism that causes harm or damage to people or their food, animals, or destroys their crops is called a pest. Insects, mites, ticks (and other arthropods), mice, rats, and other rodents, slugs, snails, nematodes, cestodes/tapeworms are examples of pests.

The presence of pests in a food premises is a potential food safety issue because they can cause microbial or physical contamination of food products.

Common pests which need to be controlled are houseflies, cockroaches, rats, lizards, stored grain pests like weevils and beetles, dogs, cats and birds.

Pests can be controlled by following hygienic practices and good sanitation.



HOW FLIES SPREAD GERMS?

Flies cannot chew solid foods, so they vomit on food to liquefy it. They suck up the liquid vomit containing harmful microbes. While feeding, they also drop excreta that contains pathogens. Fly specks include light drops of vomit and dark particles of excreta. The sticky hair on the legs of flies helps them carry bacteria from one place to another.

Did You Know?



Dengue is a mosquito-borne disease, causing nearly 400 million infections and an estimated 20,000 deaths every year. In the past 50 years, dengue has spread from a small number of countries to being endemic in 128 countries, affecting both the poor and the rich.



STREET FOODS

In India, street foods form a significant part of the daily diet and have a major influence on health and well-being of youngsters, especially workers and students. Nutritive value and hygiene of these foods is usually neglected or compromised.



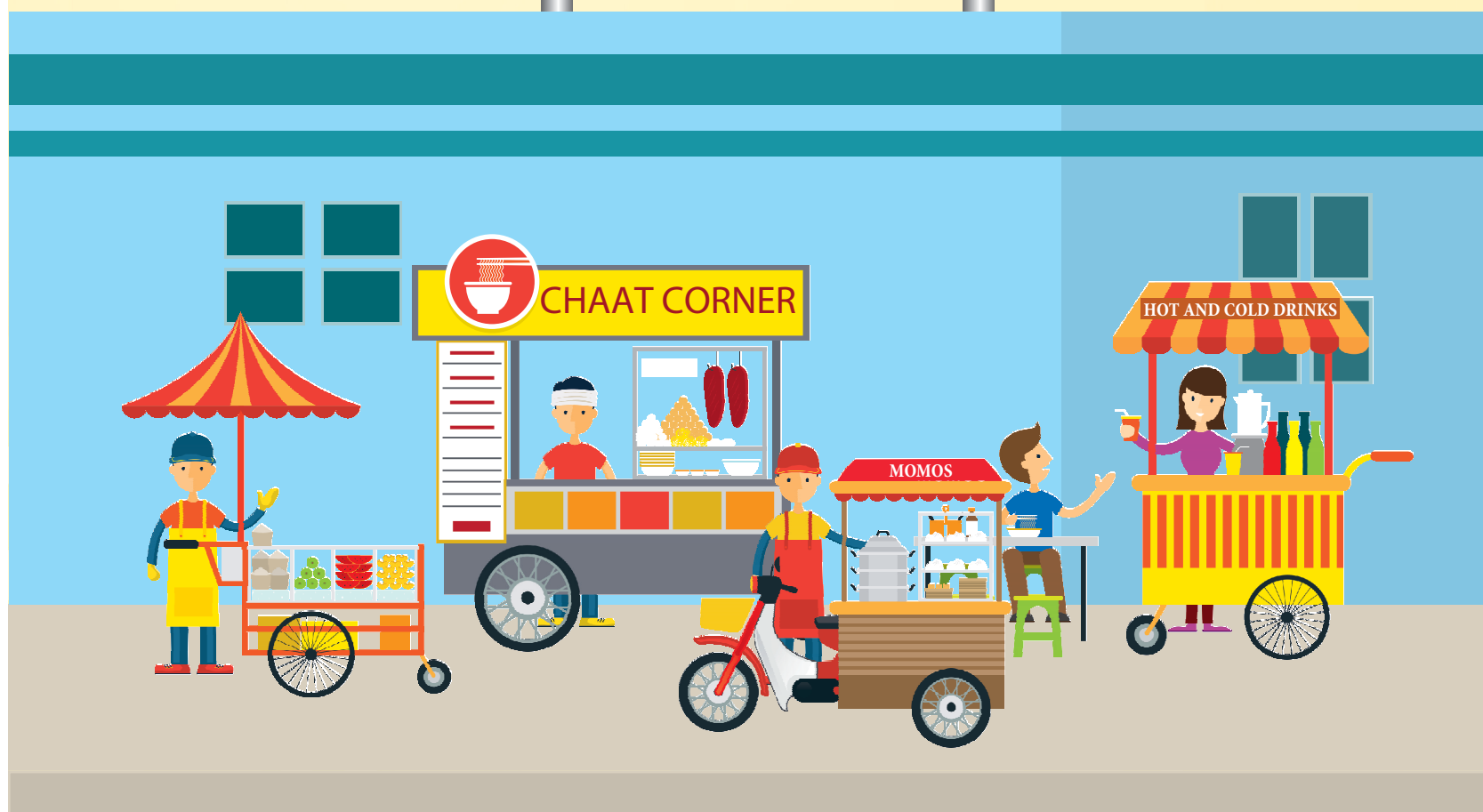
SNF FUNDA

A survey on street foods of Delhi revealed...

- Most people are unaware about the health hazards of street foods but find them a convenient and tasty option.
- 18% consume street food on a daily basis.
- 50% of the students surveyed, prefer street food over other kinds of food.
- 38-45% students consume street food weekly or monthly.
- 74% buy street food for taste.
- 31% students buy it for convenience and low cost.

6 Key Concerns about Street Foods

- Unhygienic cooking practices and serving utensils.
- Raw ingredients are not washed well, especially coriander, mint and salad vegetables.
- Food displayed is open to contamination from dust, dirt, flies and customers.
- Food is prepared in bulk, many hours in advance and remains in the Danger Zone (5°C–63°C) for long hours.
- Lack of basic infrastructure and services, such as potable water.
- Personal hygiene is poor and vendors do not understand the value of hygiene. Vendors do not wash hands before handling food. They serve food with bare hands.



SNF STREET FOOD PATROL CHIEFS

FUN TIME 15

SNF STREET FOOD PATROL CHIEFS.
You are the SNF Food Patrol Chief,
check the street food vendors
around your home and grade them
on the basis of the parameters
given below.



PARAMETERS	REMARKS
1. Location of the food stall (far from source of contamination like open drains, toilets, garbage, waste water.).	
2. Food service personnel's hygiene (nails, hair, clothes.).	
3. Clean cooking and serving utensils.	
4. Quality of raw material.	
5. Food displayed is open to contamination from dust, dirt, flies and customers.	
6. Time and temperature of food, preparation and storage of cooked food is appropriate.	
7. Cold storage facilities.	
8. Maintaining food service standards, for example, wearing gloves while serving <i>panipuri</i> .	
9. Quality of water used not only for cooking but also to wash utensils.	
10. Best practices followed while using raw materials, authorised food colours and cooking medium (fat/oil).	

What are single service items / disposables?

- Single service items or disposables are made of plastic, paper, thermocol, aluminium foil. They are designed to be used only once and then crushed, discarded and recycled.
- Single service items include glasses, plates, cups, bowls, straws, containers and utensils.
- Single service items are convenient to use especially when cleaning and sanitising facilities are not available. These should be made from food grade items only.





FUN TIME 16

How should you ideally dispose off the following single service items?

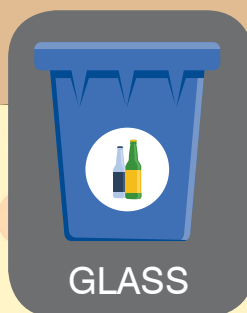
1. Plastic water glasses
2. Thermocol glasses
3. Plastic spoons
4. Aluminium disposable cartons

KEY

- Plastic water glasses - (Crush/Recycle)
- Leaf plates - (Vermi-compost/Biogas)
- Plastic spoons - (Recycle/Aluminium disposable cartons - (Collect separately/ Crush/Recycle)

WASTE DISPOSAL AND MANAGEMENT

Waste can be almost anything, including food waste, leaves, newspapers, bottles, construction debris, and chemicals from factories, wrappers or radioactive materials. Waste management is the collection, transportation, disposal or recycling and monitoring of waste. Primary objective of waste management is to protect the public and the environment from potentially harmful effects of waste.



Significance of waste disposal

- Waste must not be allowed to accumulate in and around food handling, food storage and other working areas.
- Suitable provision must be made for the removal and storage of waste.
- Waste should be disposed off regularly and efficiently to prevent contamination of food products.
- Waste should be segregated before being disposed.

The three preferred options for disposal of food waste

- Vermicomposting
- Recycling
- Installation of biogas plants

“VERMICOMPOSTING”



Fruit and vegetable peel, stalks, seeds and food waste can ferment, attract flies and give off a foul odour, if not disposed off immediately. This organic waste or biomass is bio-degradable and nutrients in the waste can be returned to nature by a simple process called vermicomposting.

How is vermicomposting done?

- A special breed of earthworms feed on garbage and break it down into simple substances which can be easily assimilated by plants.
- Vermicomposting conserves the humus of the soil. The excreta of the earthworms is a highly-enriched manure containing hundreds of earthworm cocoons to continue the process.
- The burrowing action of the earthworms helps in tilling the soil ten times deeper than the traditional plough.
- Fruits and vegetables grown on such soils are healthier, tastier and more nutritious than those grown on farms fertilised by chemical fertilisers.
- Foods grown in farms that use organic manure are called ‘organic foods’. They fetch a higher market price.

FUN TIME 17

Make your own vermicompost at school/home.

Materials required: a pit or a medium sized bin, a handful of vermi-castings, brickbat soil, garden waste, food waste



Vermicomposting

- Take a small wooden box or dig a small pit.
- Spread a net on the box/pit.
- Spread 1 or 2 cm thick layer of sand.
- Use green leaves to cover the sand.
- Put kitchen waste (fruit peel, vegetable waste, used tea leaves etc) to cover the sand.
- Sprinkle some water to make this layer wet.
- Add the worms.
- Loose soil-like material will be formed in the pit after 3-4 weeks.
- Remove the material from the box and dry it in the sun.
- Organic manure is ready.

Module

5

I AM NOURISHED

NEED FOR
NUTRIENTS

MACRO
NUTRIENTS

MICRO
NUTRIENTS

TEAM SEHAT KA

F^{OOD}
FUNDA



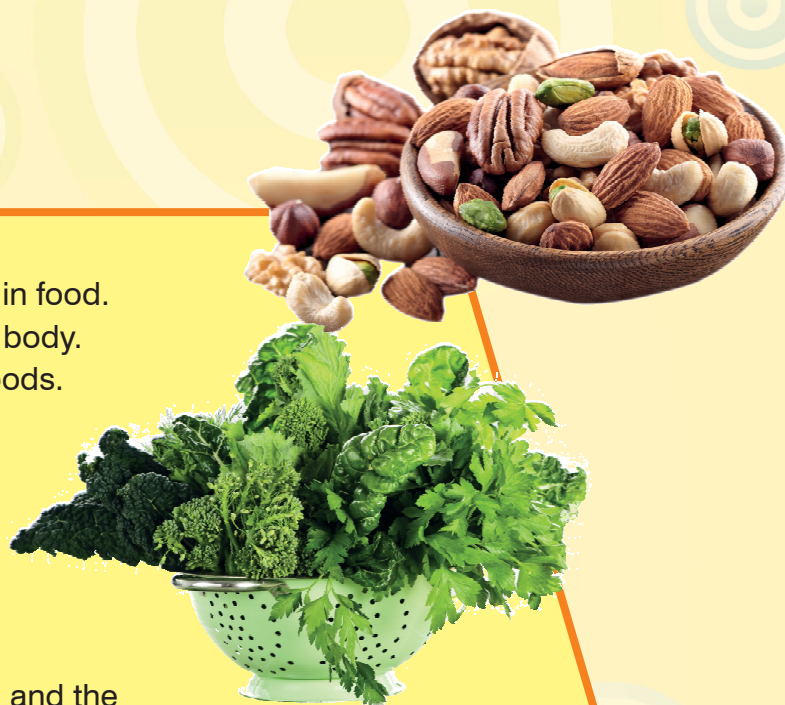
NEED FOR NUTRIENTS

To stay healthy our body needs food that contains a variety of nutrients.

Nutrients are chemical substances found in food. They perform a variety of functions in our body. Different nutrients are found in different foods. Our body needs nutrients for:

- energy
- growth and repair of worn out tissues
- protection against infections
- regulating body functions

Good health is based on the combination and the proportion of nutrients that we get from food.



MACRONUTRIENTS

Carbohydrates, proteins and fats are macronutrients (macro means large). These nutrients are needed in relatively large amounts in the diet as they provide our body with energy. These are the building blocks for growth and maintenance of the body.

Vitamins and minerals are micronutrients. These are essential nutrients that our body needs in small amounts to work properly.

Although water is not always included in the strict definition of a nutrient, it is essential for health and life.

Energy in Foods

Do you have enough energy?

When we eat and drink, we are putting energy measured in kilojoules (kJ) or in kilocalories(kcal), into our bodies. The amount of energy we need depends on the amount of physical activity we do. To maintain a stable weight, the energy we consume through food must be the same as the energy we use for body functions and physical activity.



What are the energy sources in the diet?

1. Carbohydrates are an essential source of energy in our diet.
2. Fats provide more than double the amount of energy than carbohydrates. Fats should be eaten in small amounts. Fats include: butter, ghee, cooking oil, cheese and meat.
3. Protein is also a source of energy. Its main function is to build and repair body tissues.

Macronutrients: Carbohydrates, Proteins and Fats

A CARBOHYDRATES

In a healthy, balanced diet, carbohydrates are the main source of energy. When they are digested, glucose is formed, which is the main fuel for the body, especially for the brain and muscles.

Starchy foods (carbohydrates) include foods such as wheat, bread, rice, potatoes, breakfast cereals, oats and other grains. These foods also provide fibre, which is important for digestive health. Carbohydrates also contain small amounts of vitamin B, iron, calcium and folate.



FUN TIME 18

Let's check your sweet food choices. Are they packed with nutrients? Or do they contain empty calories and very few nutrients?



Do You.....	Always (4 points)	Usually (3 points)	Some times (2 points)	Never (1 points)
• reach for fruit as a snack, rather than chocolate/methai?				
• drink juice or milk , rather than aerated soft drinks?				
• top your cereal with fruit instead of or along with sugar?				
• sweeten or toast with fruit, rather than just jam or syrup?				
• top ice cream with fruit, not just chocolate syrup?				
• order juice or milk with a fast-food meal or snacks, such as a burger meal?				
• choose fruit for dessert, not a rich, high-calorie dessert?				
• go for the smaller rather than the bigger slice of cake?				
• snack on two or three cookies/biscuits with milk, rather than simply eat five or six cookies/biscuits?				
• make hot cocoa with milk, not just water?				

If you scored...

30 or above. Your ‘sweet’ choices are mostly high in nutrients, in fact, enjoy a bit of sugar now and then to add pleasure to eating.

20 to 29. Your overall diet is balanced and you’re not overspending your calorie budget, your preference for sweets is probably okay.

10 to 19. Your ‘sweet tooth’ may prove to be expensive in terms of fitness and dental health.

EVER WONDERED?

How do we use our energy?

Any physical activity, such as walking, running or playing sport, requires energy. Different activities use up different amounts of energy. If you are physically active, follow the healthy eating guidelines below.

- Eat plenty of starchy foods such as roti, bread, rice, pasta and cereals, choosing whole grain versions whenever possible.
- Eat lots of fruits and vegetables.
- Eat plenty of dairy and protein-rich foods such as milk, paneer, curd, lean meat, fish, poultry, nuts, eggs and pulses.
- Limit intake of food and drinks that are high in fat, sugar and salt.
- Drink plenty of fluids.

B PROTEINS

Proteins are essential for growth and repair of worn-out tissues. Proteins also provide energy: 1 gram of protein provides 4 kcal (17 kJ). Proteins are made up of building blocks called amino acids. Different foods contain different amounts and combinations of amino acids. Proteins from animal sources (meat, fish, eggs and dairy products) contain the full range of essential amino acids needed by the body. Proteins from plant sources (pulses and cereals) typically contain fewer essential amino acids.



FUN TIME 19

Nutrients and their sources!

- Name two sources of protein in your breakfast.
- Name two sources of carbohydrates in your lunch.



C FATS

Everyone needs a certain amount of fat each day to stay healthy. When you think of fat, it's important to think of the right type and the right amount. Healthy fats are found in foods such as vegetable oils, oily fish, nuts and oils seeds. Foods containing less-healthy fats include chips, pastries and fried foods. Limit their intake.



How to cut down on unhealthy fats?

- Choose low fat varieties of milk, curd and cheese.
- Use butter and high fat spreads sparingly.
- Eat less of unhealthy fats used in sweets, pastries, cakes and biscuits.



Did You Know?



Certain fats are considered essential, specifically two fatty acids— linoleic and alpha-linolenic acid—which our body can't make. (Fatty acids are the building blocks of fat.) For children to grow normally and to stay healthy, food must contain both these fatty acids.



MICRONUTRIENTS

“WHAT ARE VITAMINS?”

- Vitamins are nutrients required by the body in small amounts, for a variety of essential processes.
- Most vitamins cannot be made by the body, so they need to be provided in the diet.
- Vitamins are grouped into fat-soluble vitamins and water-soluble vitamins.
- Requirements for vitamins change across different stages of life.

Fat soluble vitamins – A, D, E and K

Vitamin A is found as retinol in liver and whole milk. Beta-carotene present in dark green leafy vegetables and orange coloured fruits and vegetables, is converted into retinol by our body for its use.

Vitamin D is made by the body in the skin when exposed to sunlight.

Vitamin K is found in green leafy vegetables. This vitamin helps in blood coagulation.

Vitamin E is an antioxidant and is required to protect cells against damage. Good sources of vitamin E are nuts, seeds, wheat germ and oils.



Water-soluble vitamins – B and C

Regular intake of vitamin B and C is essential as each has a specific function in the body. They are:

Vitamin C, Vitamin B1 (Thiamin) ; Vitamin B2 (Riboflavin); Vitamin B3 (Niacin); Vitamin B6 (Pyridoxine); Vitamin B12 (Cyanocobalamin); folate; pantothenic acid and biotin are water-soluble vitamins.

Vitamin C is needed for:

- The normal functioning of the immune system.
- The protection of cells from damage.
- The formation of a protein called collagen which is important for maintaining blood vessels, bones, cartilage, gums, skin and teeth.





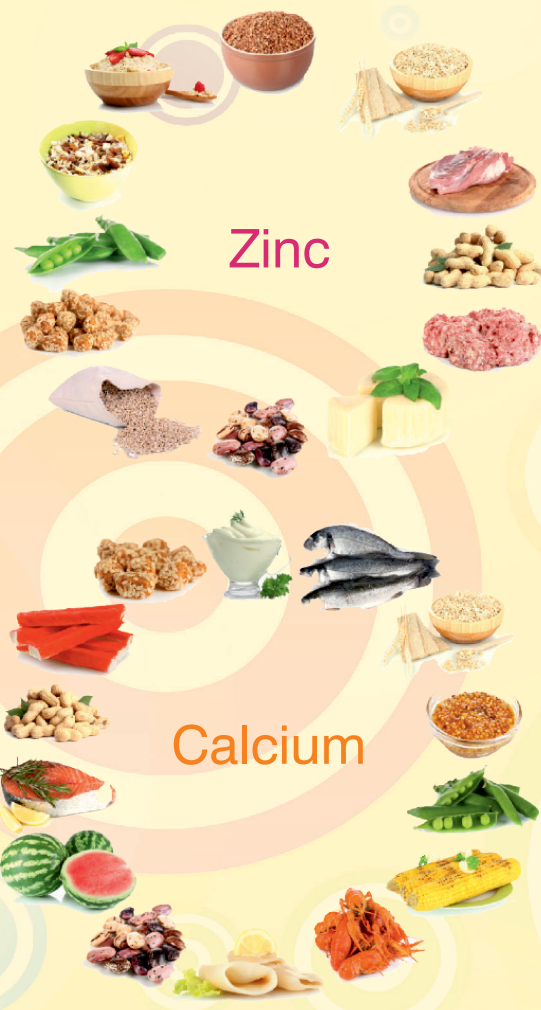
Did You Know?



Vitamin C can help in the absorption of iron especially from green leafy vegetables if it is consumed at the same meal.

WHAT ARE MINERALS?

- Minerals are inorganic substances required by the body in small amounts for a variety of functions—formation of bones and teeth; as essential constituents of body fluids and tissues; as components of enzyme systems and for normal nerve function.
- Minerals like calcium, phosphorus, magnesium, sodium, potassium and chloride are required by the body in larger amounts than other minerals. Some minerals are required in smaller quantities and are sometimes called trace minerals, for example, iron, zinc, iodine, fluoride, selenium and copper.
- Eating a varied diet will help ensure adequate supply of most minerals for good health.



“**LOOK AFTER YOUR BONES!**”

The strength and density of bones is decided by one's diet and physical activity. Calcium and vitamin D are nutrients that help the bones develop. There are many good sources of calcium to choose from, with milk and dairy foods being the best source. Eggs, fish like tuna, mackerel, salmon, dark green leafy vegetables, dried beans, nuts and ragi are good sources too.

Get dairy products into your diet

- Drink a glass of milk or lassi with cereal or breakfast.
- Include a slice of cheese in your sandwiches.
- Have yoghurt/ curd with your lunch.
- Have a milk-based dessert such as rice kheer and custard.



Other ways to keep your bones strong

- Do not smoke.
- Exercise regularly or play an outdoor sport.



Did You Know?



Toned and skimmed milk, cheese and curd contain just as much protein, vitamins, calcium and other minerals as the full fat versions.

“DRINK PLENTY OF WATER!”

We all need between six to eight glasses of water or other fluids each day to keep us alert and properly hydrated.

When you're dehydrated, you feel tired or sluggish, not a good idea when you're expected to concentrate in class for hours at a time! Tea and coffee can count as fluids too, but they contain caffeine which can dehydrate the body. Water and milk are the healthier options.



To increase your water intake:

- Take frequent water breaks during the day.
- Complement food with water or beverages such as lemonade and juice.
- Before, during, and after any physical activity, drink water, especially in hot weather.
- Always carry a water bottle with you.
- Drink water every fifteen to twenty minutes while you exercise. Don't wait until you feel thirsty!



Did You Know?



If you feel thirsty, then you're a little bit dehydrated. Stay ahead of the game—fill up a bottle of water to take to school with you each day. Remember to drink extra fluids before and after sports.

“SODIUM IS ESSENTIAL TO HEALTH!”

Sodium is an essential mineral for good health. It helps in transmitting nerve impulses and helping muscles, including the heart muscle, relax.



Did You Know?



Most sodium that we consume comes from processed or prepared food, not from the salt shaker at the kitchen table. Eating too much sodium is not good for health. High sodium intake has been linked to high blood pressure.

“IRON MAKES RED BLOOD CELLS”

The body needs iron to make red blood cells, take oxygen to all parts of the body—making iron one of the most important minerals in our diet. Lean red meat and organ meats (liver) are the best sources of iron. Other good sources are eggs, green leafy vegetables, nuts, pulses (like peas, beans or lentils) and fortified breads and breakfast cereals (check the labels). Iron from animal foods is absorbed much better than plant food sources.





Did You Know?



When your body has enough iron, you feel energetic and well. People with low iron in their bodies feel tired, are short of breath and look pale.



Did You Know?



Girls – you need more iron than boys! This is because of your monthly period and because you're still growing. So be sure to pack in those iron-rich foods every day.

Tip 1: Having some vitamin C rich food with your meal helps your body to absorb iron. So try to include some fresh fruit, salad vegetables (like tomatoes) or unsweetened fruit juice with your meals.

Tip 2: Tea and coffee contain polyphenols that make it harder for our bodies to absorb iron.

You don't need to cut them out completely, but try not to have them within 30 minutes of eating your meals.

Ever wondered?

Will spinach make us strong, as the famous cartoon character Popeye believed? It's true that spinach contains iron. But another food component in spinach, called oxalic acid, binds with iron, impairing its absorption, so it's not the best source.



Does cooking in an iron skillet improve the iron content of food?

It does. Our elders unknowingly supplemented the family's diet with iron by cooking in iron pots and pans. Acidic foods such as tomato, lemon and vinegar help dissolve small amounts of iron from the pot into the food being cooked. However, this form of iron may not get absorbed very well by our body.

“**ZINC IS ANOTHER ESSENTIAL MINERAL!**”

Zinc is essential for growth and sexual maturation. Zinc can be obtained from foods like meat, poultry, beans, nuts, whole grains and sea food.

Other Dietary Needs

Vegetarian diets

Around a quarter of the world's population consumes a vegetarian diet. For a balanced vegetarian diet, include rich sources of three vital nutrients namely, protein, iron and vitamin B12. Good quality protein can be obtained from milk and milk products or by a combination of cereals and pulses (roti/rice with dal, khichri). Iron from plant sources should be eaten with foods rich in Vitamin C for increased absorption.

Vegetarians can get B12 from milk and milk products and fermented foods such as *idli-dosa* and *dhokla*.



SHAKER TEST

FUN TIME 20

How much salt do you add to food?
Let's find out!

Take the 'shaker test' to find out. Cover a plate or a bowl with foil or plastic wrap. Now pretend your dinner is on the plate or that the bowl is filled with popcorn. Salt your 'food' just as you would if the bowl or plate was full of food. Now measure how much salt you added. If you shook as much as 1/4 teaspoon of salt, you added almost 600 milligrams (0.6 g) of sodium to your meal or popcorn.

Note: Sodium intake should not be more than 2g per person per day.



SNF FUNDA

- Our bones take in the most calcium during the teen years and early twenties. Calcium gives our bones strength. The best sources are milk, yoghurt and cheese. Most teens need four servings of dairy foods daily.
- If we don't eat breakfast, our body is like a computer without power.
- Eating cookies, candy, or other sweet foods and beverages is not the best way to get energy.
- Girls, when you have a menstrual period you lose iron. Eat iron-rich foods to replace this loss and feel energetic and happy.

“WHO AM I?”

FUN TIME 21

Nutrients Quiz! Who am I ? Fill in the blanks with appropriate nutrients.

1. I help carry nutrients to the body's cells and I also help regulate body temperature. I am _____.
2. I can be converted into energy. I am also used to build, maintain and repair body tissues. I am a _____.
3. I am the most concentrated source of energy. I am a _____.
4. I am the body's main source of energy. I am a _____.
5. I do not provide energy (calories) but I help regulate many of the chemical processes in the body. I may be soluble in water or fat.
I am a _____.
6. Calcium, iron, zinc and others like me perform important functions in the body.
I am a _____.



1. Water 2. Protein 3. Fat 4. Carbohydrate 5. Vitamin 6. Mineral

Module

6

I AM HEALTHY

HEALTHY DIET
GIVES ENERGY

WHAT ARE HEALTHY
AND
UNHEALTHY FOODS?

TEAM SEHAT KA

F  **D**
FUNDA



EVER WONDERED?

Master and Miss Sehat are a picture of good health. They are friendly, cheerful, helpful and keen sportspersons. They have thick bouncy hair, a glowing complexion, beautiful white teeth, sparkling eyes and a good posture. They have good concentration and never seem irritable or restless. They seem to have time for all their activities.

Have you ever wondered how Master and Miss Sehat get all this charm and energy from?

They eat healthy foods! But that is not all. Apart from meals, studies and recreation, they practise personal hygiene, exercise regularly and sleep well at night. Most of us follow the same routine, but are not particular about when and what we eat and drink. We often skip exercise, make wrong choices or succumb to peer pressure.



ABC OF GOOD HEALTH

SNF FUNDA!

What are the ABCs for good health?

- **A for Aiming for fitness:** Aim for a healthy body weight and be physically active through the day.
- **B for Building a healthy body:** Choose a variety of nutritious, health-promoting foods such as whole grains, fruits and vegetables. Eat safe food.
- **C for Choosing sensibly:** Choose a diet that is low in fat, sugar and salt.



SNF CASE STUDIES

Hi! I am Geeta, I wish my hair had more life in it. In spite of brushing it several times and using different shampoos and conditioners, it is sparse, dull and lifeless, and falls terribly each time I wash or comb it. I wish I had hair like Ria's. I must ask her which hair wash does she use?

Do you think Geeta's problem will be solved by changing her hair wash?



Raju is a shy boy. He avoids swimming classes in school every week as he has a poor physique and is tired most of the time. He thinks of different excuses to avoid playing sports. Secretly, he wants to make friends with Ria and Rohan and enjoy being in the pool with them.

Do you think staying away from the problem will help Raju build his body, gain confidence or feel active and energetic?

Let's help Geeta and Raju.



Geeta and Raju, all cells in our body be it skin, muscle, bone, nails or hair need proteins and zinc for growth, repair and good health.

Eat Cereal + Pulse combinations, include some milk/curd in your meal and processed soya products like Textured Vegetable protein (TVP)—nuggets to overcome proteins and zinc deficiency.





The glare of the incoming traffic momentarily blinds Radha at night. She has difficulty in reading or seeing things in dim light. Does she need spectacles? What should she do?

Vitamin A deficiency harms our eyes affecting our ability to see clearly in less light. Make sure you eat yellow-orange-coloured fruits and vegetables and green leafy vegetables rich in the pigment carotene. Carotene is converted to vitamin A in the body. Butter and ghee and whole milk products will help you as well.

Ram and Sunita are too tired after school. They get breathless after climbing the stairs or playing outdoors. What should they eat?

Ram and Sunita are anaemic. They have low haemoglobin levels, and the oxygen carrying capacity of blood is reduced making them breathless. Deficiency of iron, Vitamin B12 and folic acid can cause these symptoms. Consume meat, eggs, green leafy vegetables, whole grain cereals and pulses, dates and jaggery to overcome this deficiency.



OVERCOME DEFICIENCY

Let us learn more about deficiencies and how to overcome some of the common symptoms of deficiency diseases.

1

Do you suffer from dental caries or painful cavities?

Apart from poor oral hygiene, consumption of foods high in sugars and starches causes tooth decay. Eating candies, chocolates, chips in moderation, preferably with meals is healthy eating. Rinse your mouth thoroughly or brush after eating sticky/sweet food.



2

Are you frequently constipated? Do you drink sufficient water?

Deficiency of fibre causes constipation. Consume whole grain cereals, millets, vegetables and fruits to prevent constipation. Drink ample fluids in the form of beverages, soups, juices and water. Regular exercise may help you too.



3

Do you suffer from pain in the legs and lower back? Are your legs shapely and straight or bowed? Do your bones break/fracture easily?

Vitamin D, calcium and phosphorus are required for strong bones. Strong bones take the weight of our body. Weak bones can bend and get deformed. Drink milk and eat milk products daily. Ragi, green leafy vegetables, drumstick leaves, nuts and oilseeds especially sesame seeds provide calcium.



4

Do you miss school due to frequent colds and fever? Do your gums bleed while brushing your teeth? Do your wounds take time to heal?

A simple remedy is eating sufficient fresh fruits rich in vitamin C, sprouted grains and having salads with meals. Vitamin C is necessary for the synthesis of collagen, which acts as a cement between cells and provides structure to blood vessels, bones and ligaments. Rich food sources include fresh fruit especially citrus fruits like sweet lime, orange, grapefruit, guava, amla, and all berries.



5

Do you keep getting mouth ulcers? Do you get tingling and numbness in your hands and feet?

You could be suffering from vitamin B complex deficiency. Eat plenty of whole grain and enriched breads and cereals, dry beans and peas, peanut butter, nuts, meat, poultry, fish eggs and milk.



Did You Know?



- **Scurvy** is caused due to vitamin C deficiency. Citrus fruits provide vitamin C in abundance. Amla is the richest source of vitamin C!
- **Night blindness** is caused due to of vitamin A deficiency. Milk and its products, dark green leafy vegetables, yellow-and-orange coloured fruits and vegetables provide vitamin A.
- **Rickets** is caused due to vitamin D deficiency. Cod liver oil is rich in vitamin D. Exposure of the body to sunlight is necessary to prevent deficiency of vitamin D.
- **Beriberi** is caused due to a deficiency of thiamin. Eating unrefined or brown rice, whole grain cereals rather than refined cereals helps control beriberi.



Did You Know?



It is important to maintain healthy weight in childhood and teenage. This reduces chances of being an overweight adult.

Active play, fewer sedentary activities (such as being a couch potato, too much screen time—TV and video and computer games), and healthy eating habits are the best strategies to a healthy weight.

Protein quality of
CEREAL+PULSE =
Protein quality of FLESH
FOODS



WHAT ARE UNHEALTHY AND HEALTHY FOODS?

Unhealthy Foods

Unhealthy foods are those containing little or no proteins, vitamins or minerals but have high fat, sugar and salt (HFSS).

Examples of unhealthy foods include: potato chips, French fries, *namkeen*, *bhatura*, *samosa*, *mithai*, candy, soft drinks, cake and chocolates.



Healthy Foods

Healthy foods help in maintaining good health, support growth and body building. They provide us with essential nutrients like vitamins and minerals.

Examples of healthy foods include: protein-rich foods such as milk, *lassi*, smoothies, omelette, fish, *besan chilla*, dal, sprouts and salads and fruits.





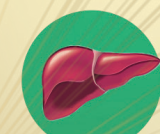
So Dr. Sara does that mean we should not eat HFSS foods at all?

You can have HFSS foods occasionally and in moderation. They cannot replace a balanced meal. Frequent consumption of unhealthy food because of our changing lifestyle can result in NCDs (Non Communicable Diseases).

NON-COMMUNICABLE DISEASES (NCDs)

Non-Communicable Diseases (Lifestyle-related diseases) are not contagious or communicable, but are related to unhealthy lifestyles. They are a cause of concern and often have their roots in our early childhood, although some symptoms may not surface till early adulthood. NCDs can be effectively prevented at no or minimal cost, but prevention needs to be started early in life.

Obesity and its associated NCDs include diabetes or high blood sugar, hypertension or high blood pressure and heart attacks.



Fatty liver



High blood pressure



Osteoarthritis



Type 2 diabetes



Heart disease

PREVENTING NCDs

Prevent NCDs by controlling the key risk factors such as:



UNHEALTHY DIET



PHYSICAL INACTIVITY



LACK OF ORAL HYGIENE



USE OF TOBACCO



USE OF ALCOHOL

School facilitators should focus on importance of personal hygiene, physical activity and healthy eating. Harmful consequences of tobacco and alcohol consumption should be high lighted. Build a strong and healthy foundation.

Keep Non-Communicable Diseases (NCDs) away.

Module

7

I PLAN MY MEALS

NEED FOR
BALANCED DIET

HEALTHY
EATING PLATE

HEALTHY
LUNCH BOX

TEAM SEHAT KA

F  **D**
FUNDA



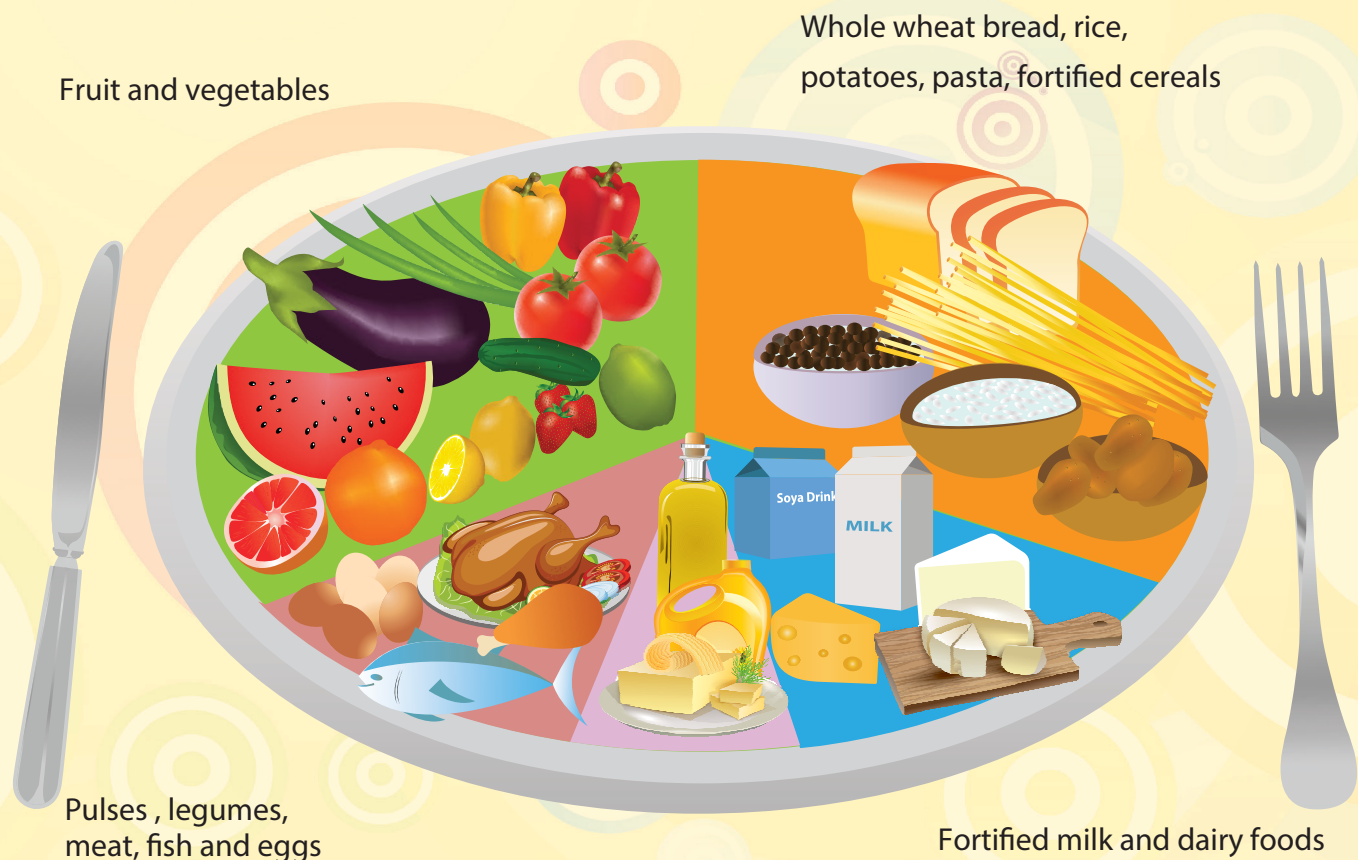
NEED FOR BALANCED DIET

We need to eat a balanced diet as:

- It promotes and preserves good physical and mental health.
- It maintains acceptable body weight with reference to height.
- It includes all nutrients in correct proportions.
- It includes a variety of foods.

What's on the healthy eating plate for teenagers?

Local foods, ethnic foods, our favorite foods, fast foods, snack foods, foods which we grow ourselves or buy from the market—foods of every kind fit somewhere within the healthy plate! Foods are grouped together because their nutrient content is similar. They promote health and well-being. In fact, each of these foods supply our body with some, but not all, nutrients needed for energy, health and growth. No single food supplies all the nutrients. The healthy plate also depicts foods and drinks high in fat, sugar and salt which are part of the diet of teenagers but need to be consumed occasionally.



NEED FOR BALANCED DIET

The healthy eating plate helps you to plan a balanced diet in a simple graphic format.

- The diet should be based on cereal grains, potatoes, other starchy foods and fruits and vegetables (5 a day).
- A variety of foods from cereals, fruit and vegetable groups are needed, with each group making up one-third of the diet.
- Most of the remaining one-third of the diet should be made up of milk and dairy foods and meat, fish, eggs, pulses and legumes.
- Only a small amount of foods and drinks high in fat and/or sugar may be included.

A healthy Eating Plate conveys three main messages about eating: variety, balance and moderation.

- **Variety:** Eat a variety of foods—fruits, vegetables and grains to get the nutrients you need. No single food supplies all the nutrients, fibre and other substances our body needs. Variety also adds flavour, interest and pleasure to meals!
- **Balance:** Eat appropriate amount from each food group every day to get the nutrients that our body needs.
- **Moderation:** Choose foods and beverages to meet your energy needs without too much saturated fat, cholesterol and added sugars. Eating in moderation helps to achieve or maintain a healthy weight and may protect from health problems such as diabetes, heart disease and cancer.

Healthy eating should add pleasure to your life!

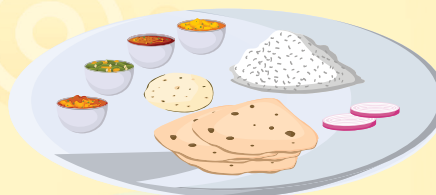


EVER WONDERED!

- Why 'five a day' is advised for eating fruits and vegetables?
Research shows that eating at least five servings of fruits and vegetables a day offers protection from deadly diseases like cancer. By eating more fruits and vegetables you may reduce the risk of obesity leading to NCDs.
- What is portion distortion?
As restaurant portions get bigger, many children are clueless about sensible serving sizes. In fact, Indians tend to underestimate the amount they eat. Today's mega portions promote: 'Eat until you feel stuffed, not just until you are satisfied.' Adults and kids lose their ability to regulate how much they eat, as they listen less to hunger cues. Overeating leads to overnutrition by consuming excess calories, fat, saturated fat leading to obesity.

To overcome portion distortion and to downsize your helpings

- Use smaller dishes, bowls and cups for your meal.



- Remember meat, chicken or fish don't need to take the biggest space on your plate. Let vegetables, fruit fill half of your plate.



- Start with small helpings, eat slowly and take a second helping only if hungry.



- Eat from a plate, not a package, so you know how much you eat.



FUN TIME 22

Let's colour code our meals!

- To paint your plate, toss strawberries in curd.
- Garnish salad with sliced beetroot.
- Add corn, tomatoes, spinach leaves in sandwich.
- Colour offers much more than eye appeal to a wonderful meal! A rainbow of fruits and vegetables creates a palette of nutrients on your plate, each with different benefits.



FUN TIME 23

Does your diet pass these tests?

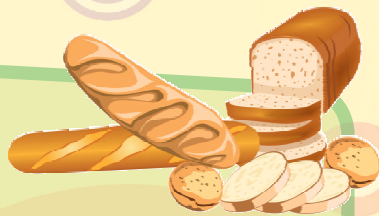
- **The 'Colour Crunch' Test**
Try to choose foods with a variety of colours and textures at each meal.
- **The 'Pie' Test**
Think of your plate as a pie and make sure that 50% of the pie is made of fruits and vegetables, 25 % grains and 25% of protein foods like dal / meat / egg with a separate bowl of dairy products in a day's diet.
- **The 'Five-a-Day' Test**
Five servings of vegetables and fruits each day are important for your good health. Count them as you go along.

HEALTHY LUNCH BOX

A healthy lunch every day will provide you with the energy and nutrients required to grow, develop and learn. The key to a balanced, nutritious lunch box is variety of foods from the following three food groups.



1



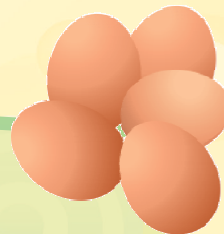
Carbohydrate-rich foods such as any sort of roti, bread, rice preparations or wraps—these foods provide us energy.

2



Fruits and vegetables provide vitamins and minerals to help protect against diseases.

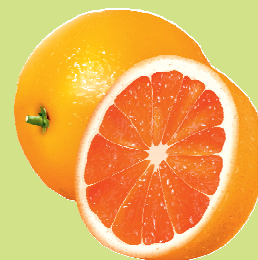
3



Protein-rich foods such as dal, sprouts, paneer, cheese, tofu, egg, chicken, fish or peanut butter, milk and milk products.

SNF Funda

- Skipping breakfast is linked to low achievement and performance. Conversely, a morning meal helps children succeed with learning as they get the required energy. They concentrate better, solve problems more easily, and have better muscle coordination. Children who eat breakfast are less likely to be overweight and more likely to get enough calcium too. Skipping meals does not make good nutrition sense!
 - For children, teens and adults of any age, a healthy weight is the key to a long, healthy and productive life. Include nutrient-rich foods such as vegetables, fruits, different grain products, lean meats and dairy foods. Choose sensible food portions, and be physically active.
- Both, vegetarian or non-vegetarian foods, can supply enough nutrients to nourish, promote health and help prevent health problems.





Healthy Snack for a healthy Smile

Keep your smile healthy! In fact for everyone, and especially for children, smart snacking can lead to good oral health.

- Overcome the urge to snack frequently. Bacteria in plaque produce acids that can damage teeth in twenty to forty minutes after each exposure to carbohydrates in snacks.
- Choose snacks wisely for a well-balanced eating plan. Eat fresh vegetables, fruits (such as apples), plain yoghurt, cheese, milk and popcorn.
- Even though sugars from hard candy, cough drops, and lollipops may leave your mouth faster than snacks that stick between your teeth, go easy on sugary snacks that dissolve slowly in your mouth.
- Brush as soon as you can after snacking. This removes plaque and stops the cavity-producing action of bacteria. Rinse your mouth with water after every meal to get rid of food particles.



Did You Know?



- A planned snack can help prevent overeating.
- Watching television tends to increase snacking—particularly of high-fat, high-calorie foods.
- Larger snack containers add up to more calories. People eat more when the package is bigger!



Let's Cook!

Try these healthy, no-cook snacks. They are easy and fun to make and require little or no adult supervision.

- **Fruit and vegetable kebabs.** Cut raw vegetables and fruit into chunks. Skewer them onto thin sticks. (Note: To prevent discoloration, dip cut apples, bananas, or pears in orange or lemon juice.)



- **Veggies sticks with curd.** Cut radish, cucumbers or carrots into sticks. Then dip them into curd.

- **Banana pops.** Peel a banana. Dip it in yoghurt, then roll in crushed corn flakes and freeze.



- **Fruit shakes.** Take 1/2 cup low-fat fruit yoghurt and 1/2 cup cold fruit juice in a container with a lid. Make sure the lid is tight. Then shake it up, and pour it into a cup.

- **Sandwich cut outs.** Using cookie cutters with fun shapes like stars and hearts, cut slices of cheese and whole-grain bread. Then put them together to make fun sandwiches.



SNF Funda

- Get Fit with Friends. Are you looking for something to do? Try these active ways to get fit with a friend and have fun, too.
- Wake up thirty minutes earlier, and take a brisk walk to start your day. Schedule your walk with your friends.
- Do something active: play tennis, cricket or enjoy dancing at a school function.
- Instead of talking on the phone, walk and talk with your friends.
- Join your school or community sports team.
- Take the stairs instead of the elevator or escalator. Walking up stairs is a great heart exerciser, calorie burner and muscle builder!
- Walk around your residence—outside or inside—during your lunch break. You'll burn energy rather than being tempted to nibble on a snack.
- Play actively with your pets. Some dogs like to play with a Frisbee as much as kids do!
- Before and after dinner, walk—and talk—with your family.
- Do some gardening (Grow vegetables and herbs.).



Module

8

TOOLS AND TRACKERS

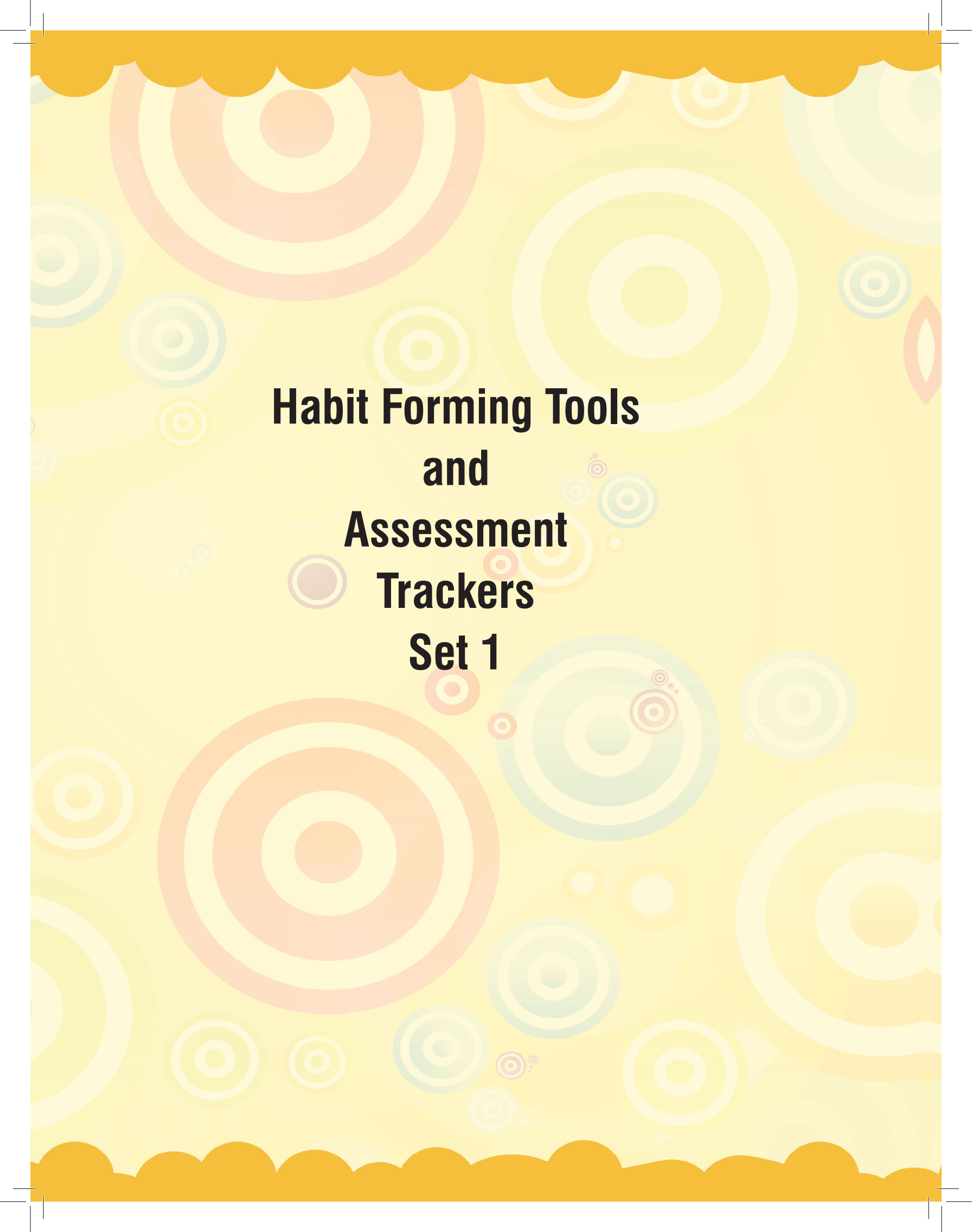
HABIT
FORMING
TOOLS

SELF
ASSESSMENT
TRACKERS

TEAM SEHAT KA

F  **D**
FUNDA



The background is a light yellow color with a pattern of concentric circles in various sizes and colors, including orange, green, and blue. The circles are arranged in a way that they appear to be floating or scattered across the page. At the top and bottom of the page, there is a decorative orange border with a scalloped or wavy edge.

Habit Forming Tools and Assessment Trackers Set 1

“My Dairy—Dot Tracker”

Name _____

Class _____ Section _____

My Dairy Calendar

Draw 1 dot for each dairy serving. Let us see how strong you are.



ice cream



butter



paneer



cheese



yogurt/
curd



milk

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15










My Sugar Tracker

Name _____

Class _____ Section _____

Look at the example. Put a tick against the food item eaten in a day. You can put more than one tick in the same box if the food has been eaten more than once.

FOOD ITEM	EXAMPLE	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7	FOOD TYPE TOTAL
dairy 	✓✓✓								
cold drinks and juices 	✓								
chocolates and candies 	✓✓								
packaged foods jams and syrups 	✗								
cup cakes cookies 	✓								
ice cream and ice lolly 	✓								
Mithai 	✓								
Day's total									

Source: Tools and Trackers-arney's Fitkids-promoting Healthy Child Development



“My Water Tracker”

Name _____

Class _____ Section _____

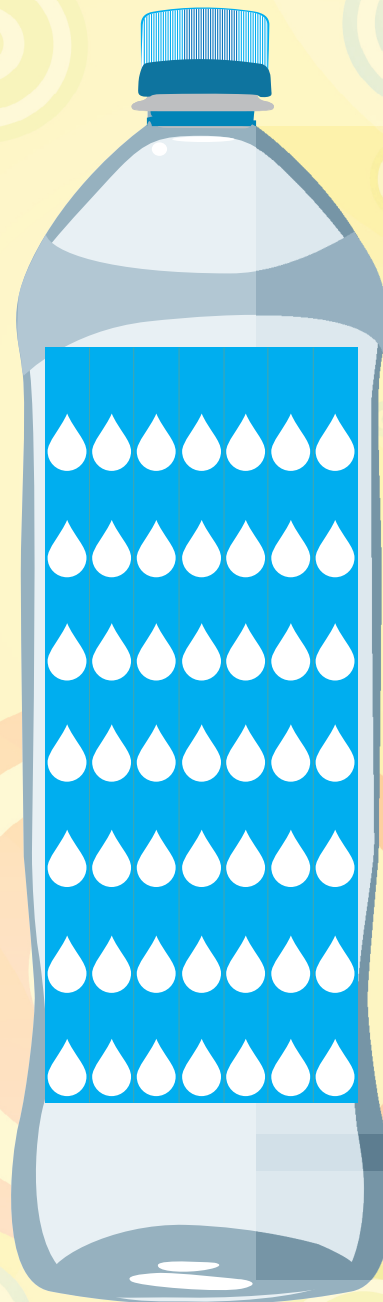
Track your water intake over a week by colouring one drop blue each time you drink a cup of water. (1 cup = 150 ml)

Recommended Daily Amount of total water intake (including other beverages)

5-6 cups for 4 to 8 years

7-8 cups for 9 to 12 years

8 to 10 cups for 13+ years



Source: Tools and Trackers—Arney's Fitkids—promoting Healthy Child Development



“My Healthy Food Tracker”

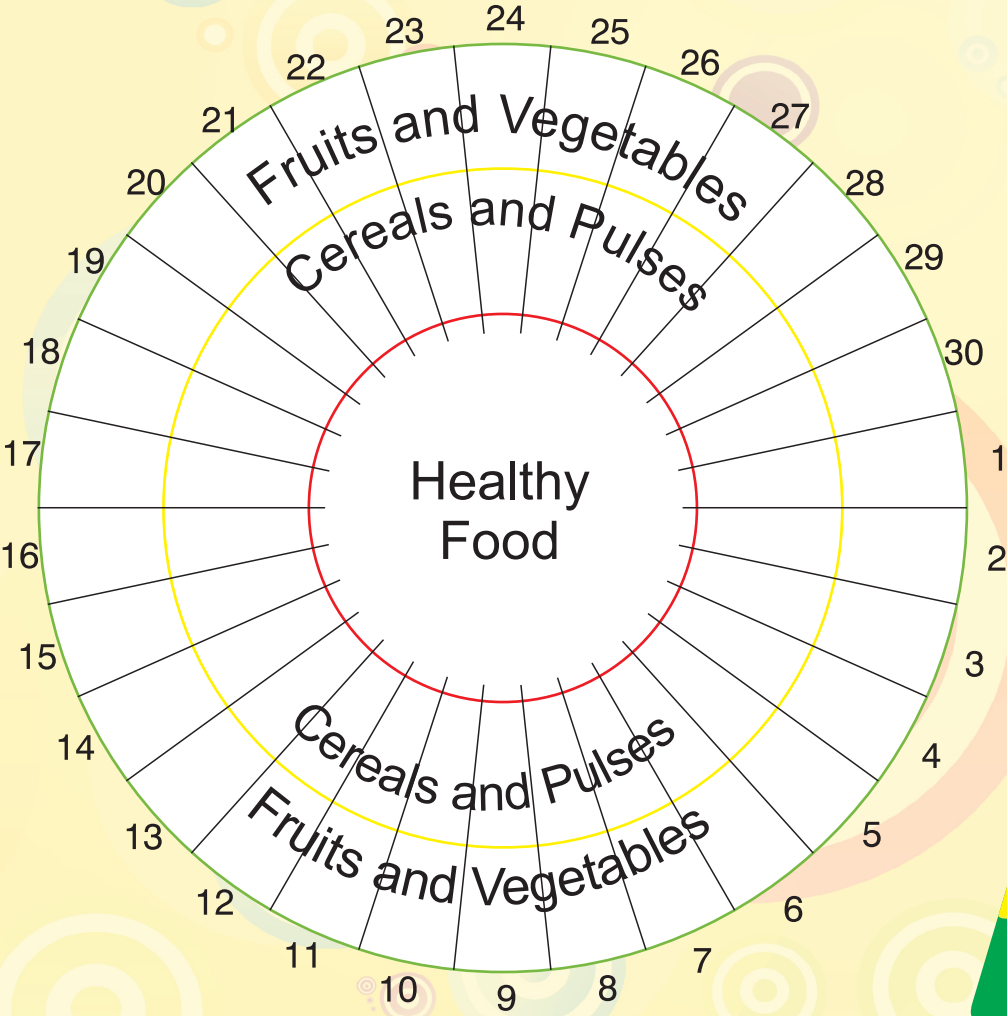
Name _____

Class _____ Section _____

Unhealthy Food Explained

Each numbered band indicates a day of a month. Match and tick the colour of the food group consumed on each day on the tracker. Ensure the consumption of unhealthy food goes down daily.

Unhealthy food is defined as ‘any food, which is low in essential nutrients and high in calories and sodium. These foods contain little or no proteins, vitamins or minerals but are high in salt, sugar and fats’.



Source: Tools and Trackers–arney’s Fitkids–promoting Healthy Child Development




“ MY HYGIENE TRACKER ”

Name _____

Class _____ Section _____


1. Work on your tracker by slaying the germs with your pencil.
2. Kill one germ each time you perform the personal hygiene activity.

I am
A Hygiene
Superstar




BRUSH TEETH

- Morning
- After big meal
- At bedtime




BATHE

- Morning
- After play
- Before bedtime





































































































CHANGE CLOTHES

- After bath
- After school
- Before play
- Before bedtime



WASH HANDS

- Before brushing
- Before any meal
- After any meal
- After play
- After visiting the toilet
- Before bedtime

Activities							
BRUSH TEETH	 	 	 	 	 	 	 
BATHE	 	 	 	 	 	 	 
CHANGE CLOTHES	   	   	   	   	   	   	   
WASH HANDS	     	     	     	     	     	     	     



MY FRUIT TRACKER

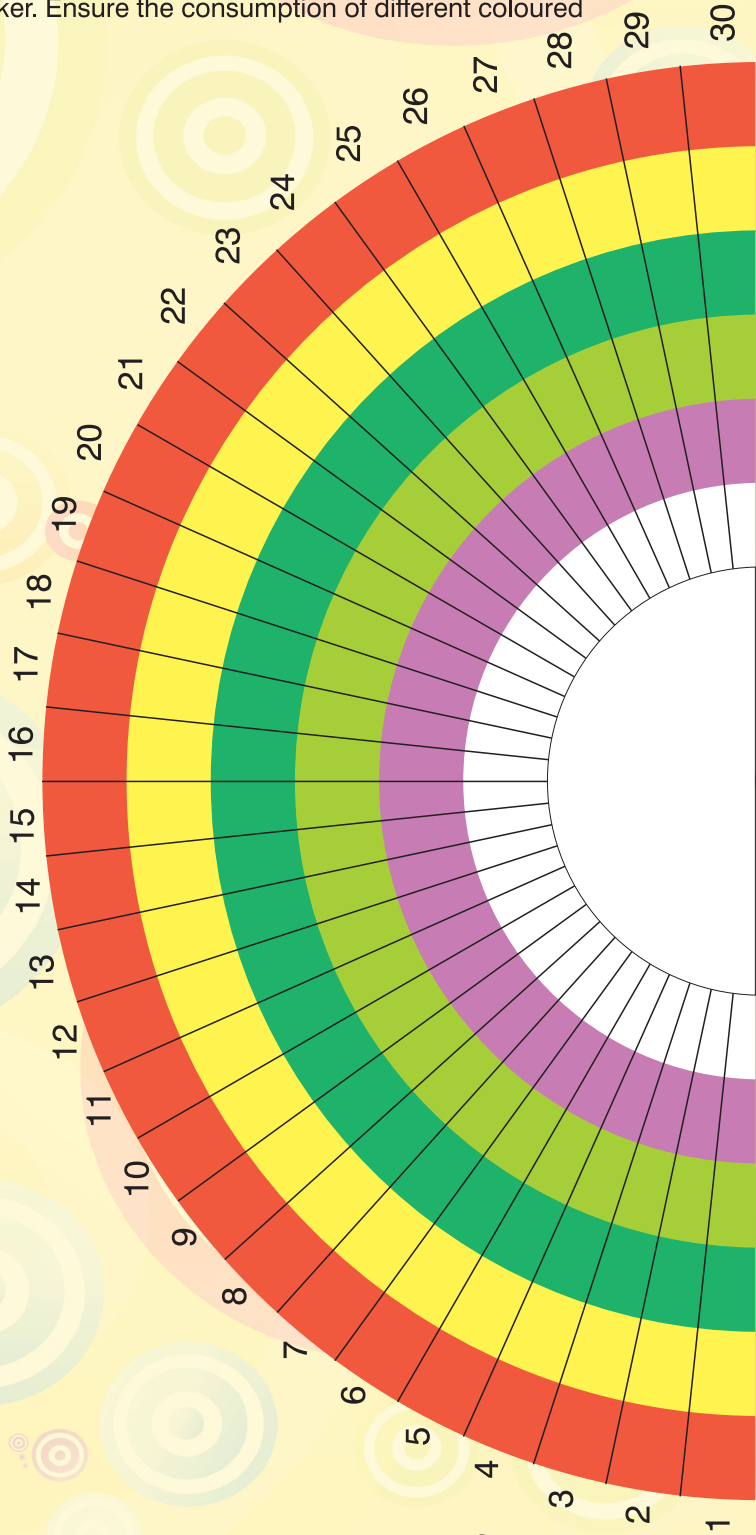
Name _____

Class _____ Section _____

Each numbered band indicates a day of a month . Match and tick the colour of the fruit consumed on each day on the tracker. Ensure the consumption of different coloured fruits goes up daily.

FRUIT COLOUR KEY

- Red : apple with skin, pomegranate, cherries, strawberries, water melon
- Orange : papaya, orange
- Yellow : pineapples, golden apple, mango, Indian ras-bhari
- Green : pears, green apple kiwi
- Purple : jamun, black grapes
- White : banana, litchi, mangosteen, dragon fruit





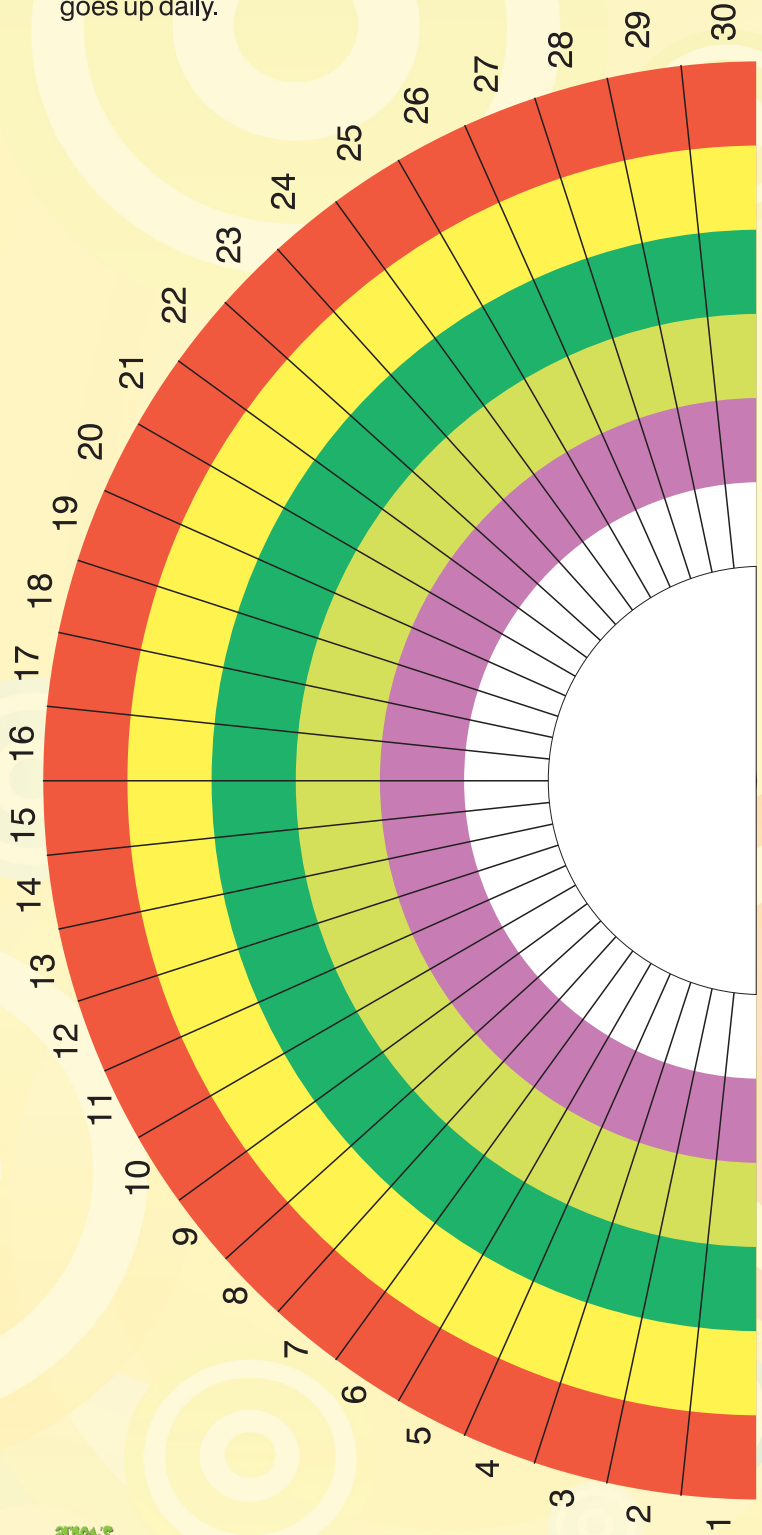
MY VEGGIE TRACKER

Name _____

Class _____ Section _____

INSTRUCTIONS

Each numbered band indicates a day of a month. Match and tick the colour of the vegetable consumed on each day on the tracker. Ensure the consumption of different-coloured vegetables goes up daily.

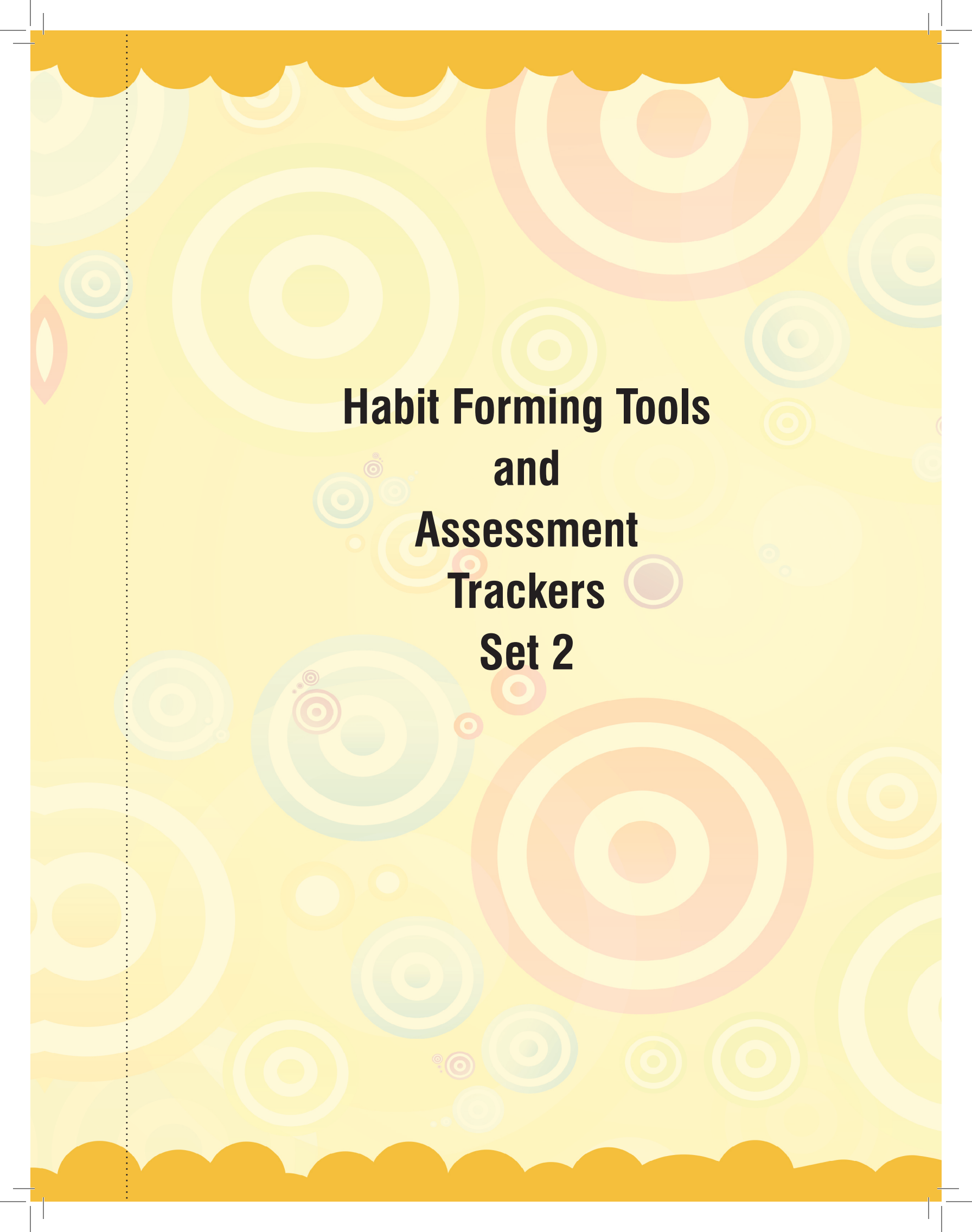


VEGETABLE COLOUR KEY

- Red : tomatoes, carrot, beet, red peppers
- Yellow : bell pepper, yellow squash, sweet corn, yellow tomato, pumpkin, sweet potato
- Dark green : spinach, *methi*, broccoli, green beans, capsicum, spring onions, zucchini, *karela*, *torai*, okra, green pumpkin, *parwal*
- Light green : cabbage, cucumber, peas, *lauki*, *tinda*, lettuce, celery
- Purple : purple cabbage, brinjal, black olives
- White : potato, *arbi*, turnip, lotus stem, cauliflower, radish, onions







Habit Forming Tools and Assessment Trackers Set 2



“My Dairy—Dot Tracker”

Name _____

Class _____ Section _____

My Dairy Calendar

Draw 1 dot for each dairy serving. Let us see how strong you are.



ice cream



butter



paneer



cheese



yogurt/
curd



milk

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15



Source: Tools and Trackers—arney’s Fitkids—promoting Healthy Child Development










My Sugar Tracker

Name _____

Class _____ Section _____

Look at the example. Put a tick against the food item eaten in a day. You can put more than one tick in the same box if the food has been eaten more than once.

FOOD ITEM	EXAMPLE	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7	FOOD TYPE TOTAL
dairy 	✓✓✓								
cold drinks and juices 	✓								
chocolates and candies 	✓✓								
packaged foods jams and syrups 	✗								
cup cakes cookies 	✓								
ice cream and ice lolly 	✓								
Mithai 	✓								
Day's total									

Source: Tools and Trackers-arney's Fitkids-promoting Healthy Child Development



“My Water Tracker”

Name _____

Class _____ Section _____

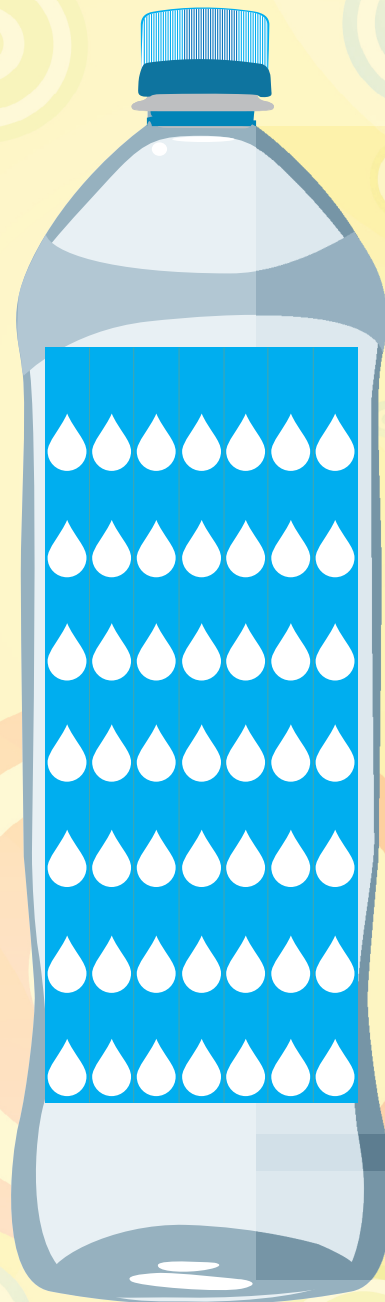
Track your water intake over a week by colouring one drop blue each time you drink a cup of water. (1 cup = 150 ml)

Recommended Daily Amount of total water intake (including other beverages)

5-6 cups for 4 to 8 years

7-8 cups for 9 to 12 years

8 to 10 cups for 13+ years



Source: Tools and Trackers—Arney's Fitkids—promoting Healthy Child Development



“My Healthy Food Tracker”

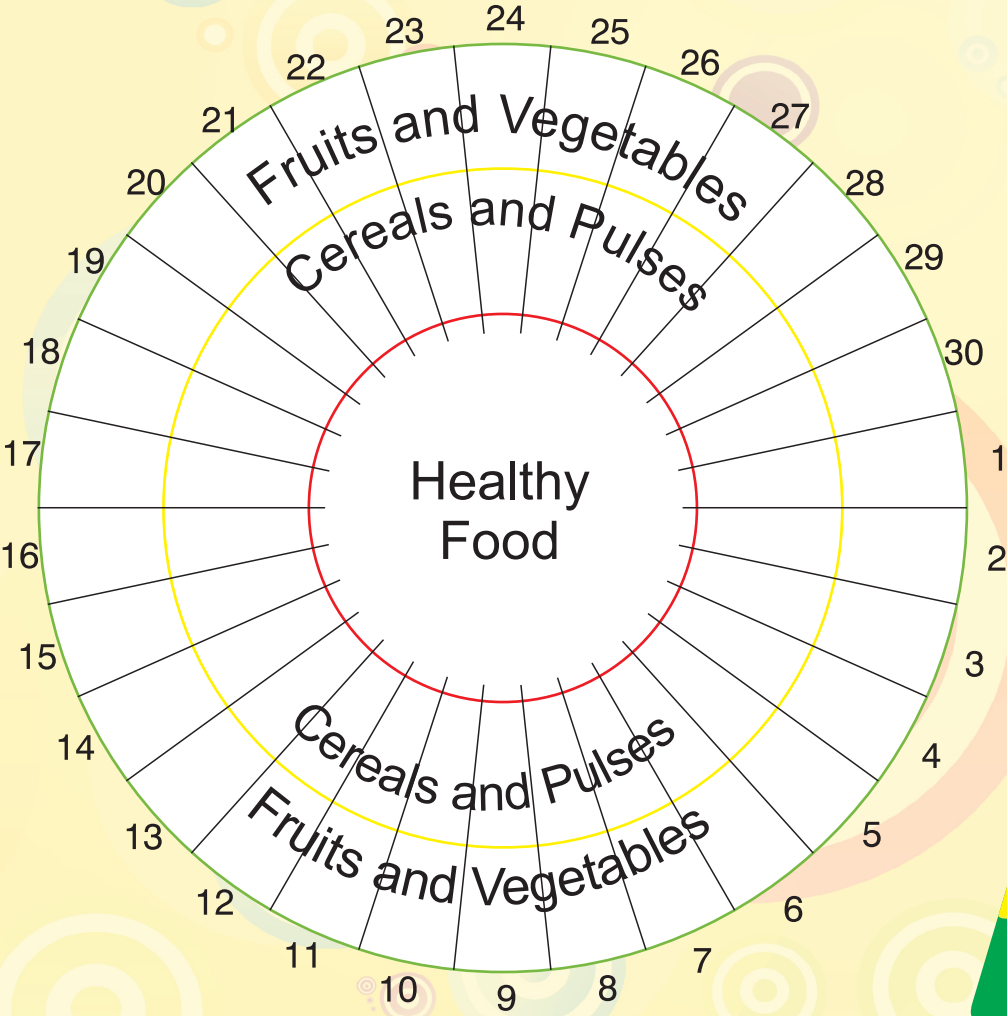
Name _____

Class _____ Section _____

Unhealthy Food Explained

Each numbered band indicates a day of a month. Match and tick the colour of the food group consumed on each day on the tracker. Ensure the consumption of unhealthy food goes down daily.

Unhealthy food is defined as ‘any food, which is low in essential nutrients and high in calories and sodium. These foods contain little or no proteins, vitamins or minerals but are high in salt, sugar and fats’.



Source: Tools and Trackers—arney’s Fitkids—promoting Healthy Child Development




“ MY HYGIENE TRACKER ”

Name _____

Class _____ Section _____


1. Work on your tracker by slaying the germs with your pencil.
2. Kill one germ each time you perform the personal hygiene activity.

I am
A Hygiene
Superstar




BRUSH TEETH

- Morning
- After big meal
- At bedtime




BATHE

- Morning
- After play
- Before bedtime


































































CHANGE CLOTHES

- After bath
- After school
- Before play
- Before bedtime



WASH HANDS

- Before brushing
- Before any meal
- After any meal
- After play
- After visiting the toilet
- Before bedtime

Activities							
BRUSH TEETH	 	 	 	 	 	 	 
BATHE	 	 	 	 	 	 	 
CHANGE CLOTHES	 	 	 	 	 	 	 
WASH HANDS	  	  	  	  	  	  	  



MY FRUIT TRACKER

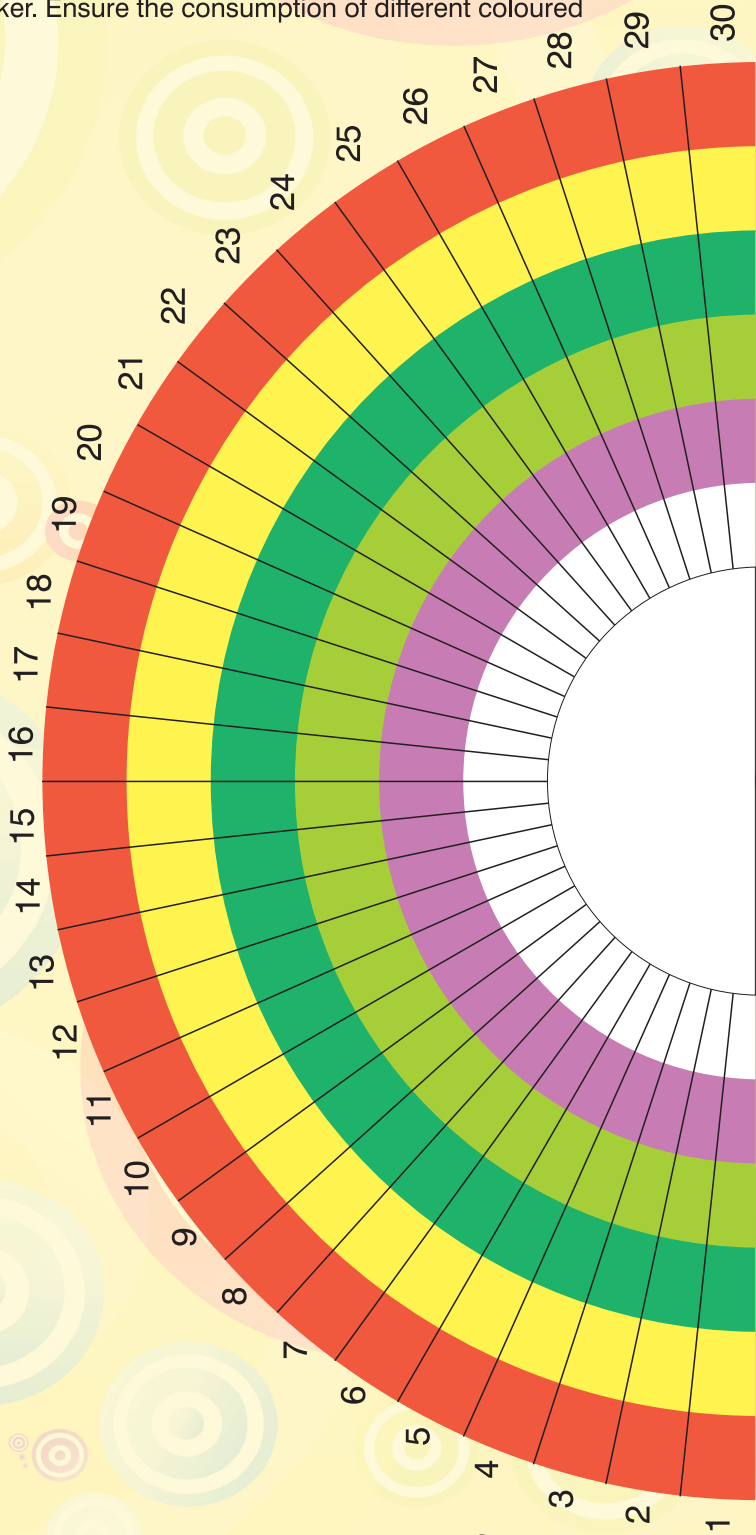
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Class _____ Section _____

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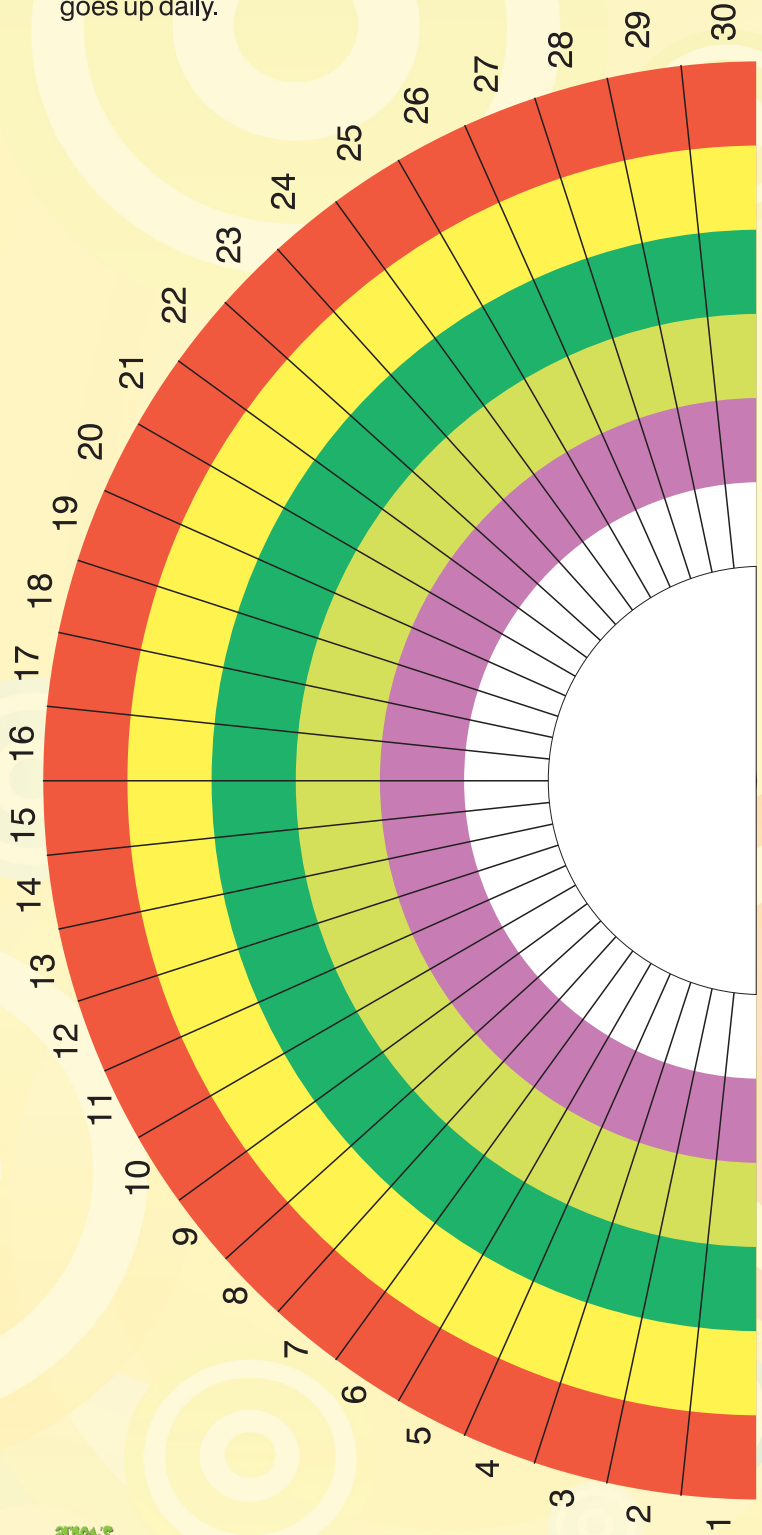
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CERTIFICATE OF ACHIEVEMENT

15th October is
celebrated as
Global Hand
Washing Day

Certificate of
Achievement

THIS IS TO CERTIFY THAT _____ IS THE

HAND WASHING CHAMP

DATE _____

SIGNATURE _____

