



Illustration 2.1

Did you read the conversation? What could be the reason for fever? What should be done to prevent the spreading of the disease to others? Write the names of diseases you know in your science diary. Are they all communicable?

Complete the table by adding more diseases.

<i>Communicable diseases</i>	<i>Non communicable diseases</i>
Dengue fever	Cancer
Jaundice	Diabetes

Table 2.1



*Communicable diseases are those which spread from one person to others.*



## Pandemics

*When communicable diseases spread to other countries or continents, and affect a large number of people, it is called a pandemic. Smallpox, tuberculosis, plague, Covid-19 etc. are some of the pandemics that we have survived.*

Aren't we more likely to get affected when we come into contact with someone who is sick?

What cause communicable diseases?

Can we see them?

## Pathogens

Most communicable diseases are caused by microorganisms like bacteria, viruses, and fungi that cannot be seen with the naked eyes. They are called pathogens because they cause diseases.



Microscopic view of Bacteria



Microscopic view of Virus

Figure 2.1

## Living with the microorganisms

Not all microorganisms are pathogens. There are many beneficial bacteria in our body. They help in the digestion and absorption of our food.

There are many instances where microorganisms can be useful to us. Dosa batter is fermented by certain bacteria. Bacteria and fungi break down organic matter and add it to the soil. Find more instances where microorganisms are beneficial and write them in your science diary.





## The world of fungi

We are familiar with bread mold and black mold found on clothes. They are all fungi. *Candida*, *Cryptococcus*, and *Histoplasma* are some of the fungi that cause disease to humans. The world of fungi includes everything from edible mushrooms to those that cannot be seen with the naked eyes.



Figure 2.2

## How diseases spread

Observe the illustration and find out the situations in which diseases spread.



Illustration 2.2

- Why do we cover our nose and mouth with a handkerchief when we cough or sneeze?
- Why do we keep food items covered?

In what ways do disease causing microorganisms enter the human body?

Discuss and complete the idea chart.

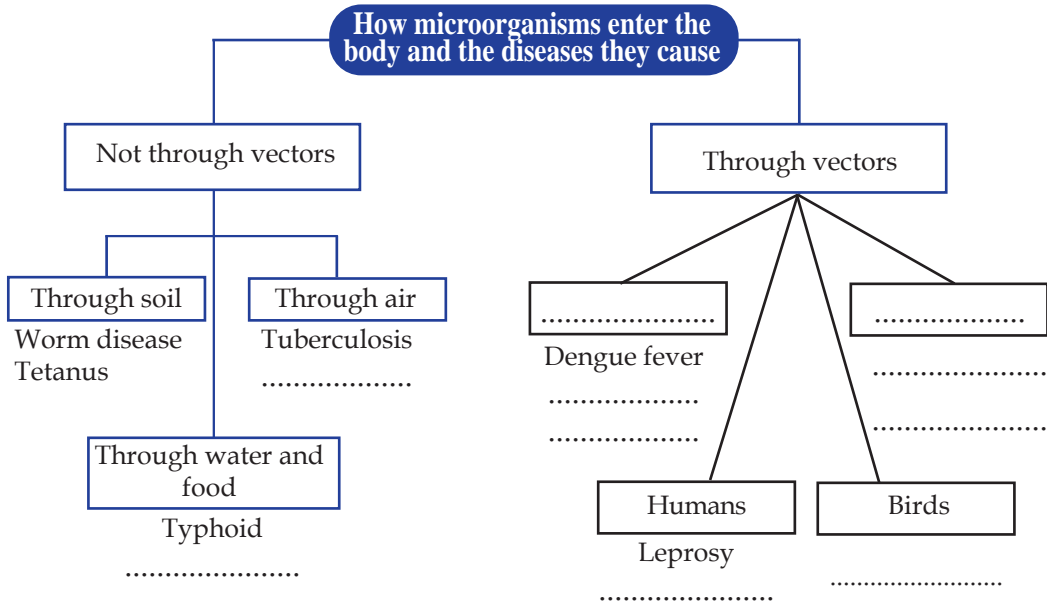


Illustration 2.3

Now you know that diseases spread through various ways. How many disease-carrying organisms were you able to identify?

## Vectors

*Vectors are organisms that bring disease-carrying microorganisms into our body. Housefly, rat flea, mosquito, bats, etc. are some of the vector organisms.*

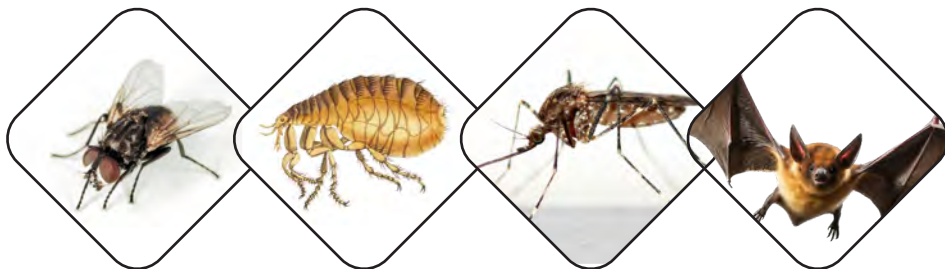


Figure 2.3



## When the surroundings become polluted

Observe the illustration 2.4.

Do similar conditions exist in your surroundings?



Illustration 2.4

Write down the conditions in which vectors multiply.

Vectors	Conditions in which they multiply
Housefly	
Mosquito	Mosquitoes breed in discarded plastic bags, bottles, coconut shells and stagnant water.
Rat	

Table 2.2

What can we do to control vectors?

Discuss in the class and write down in the science diary.

### Let us control mosquitoes

We can prevent many diseases by controlling mosquitoes. Is it enough to eliminate mosquito breeding conditions only in our home?

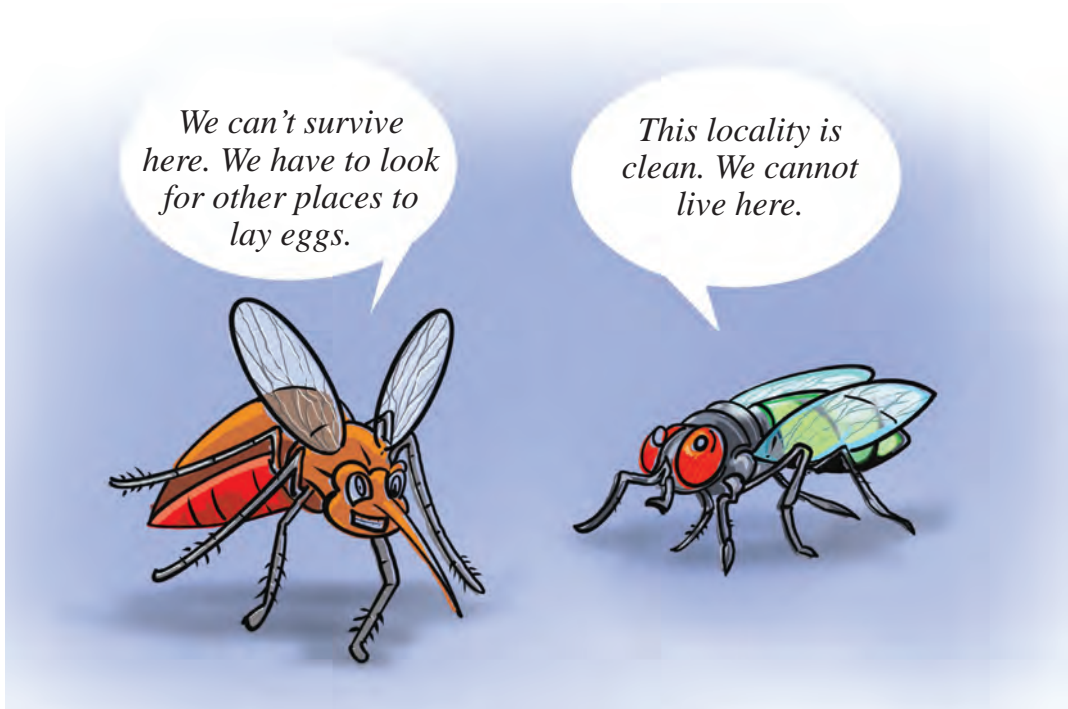


Illustration 2.5

Avoiding water logging, removing grass and weeds around residences, and cleaning drains are a few ways to prevent mosquito breeding. Observe the illustration.

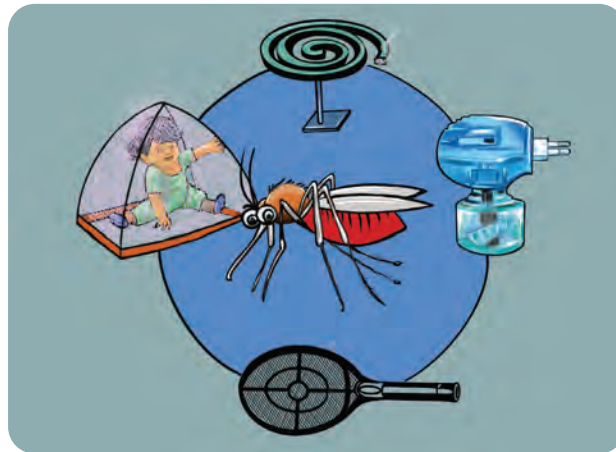


Illustration 2.6

What are the precautions to avoid mosquito bites?

- Keep doors and windows closed in the evening.
- 
- 
- 
- 



Will the hygiene of our surroundings be enough to prevent the spread of disease?

Let us see some other things to keep in mind.

Diseases	Things to keep in mind to prevent diseases
Diseases that spread through food and water	Use fruits and vegetables after washing. Keep food items covered. Drink boiled water.
Diseases that spread through air and contact	Avoid contact with the sick person. Don't use the sick person's handkerchief, clothes, etc. Use mask. Maintain personal hygiene.
Diseases that spread through soil and sewage	Use footwear. Prevent wounds in the body from getting into contact with sewage. Wash hands and legs with soap if get dirty.

Table 2.3

What can you do to ensure that your home, school, and washrooms are clean to prevent disease?

## Communicable diseases in animals and plants

Do communicable diseases affect only humans?

See the newspaper reports.



Illustration 2.7

Have you observed the plants that have communicable diseases?  
See the pictures



Brown leaf spot disease in rice

Mosaic disease in pea plants

Bud rot of coconut

*Figure 2.4*

Enquire about other diseases that affect plants and organisms. Write them in the science diary.

## Hygiene habits

Isn't personal hygiene as important as environmental hygiene for a healthy life? Look at some habits.



*Illustration 2.8*

Which of these are good health habits? Tick them.

- Wash hands only after meals.
- Brush teeth every night after meals.
- Do not trim the nails of feet and hands.
- Use footwear when walking outside.
- Eat fruits that are gnawed by birds.
- Do not consume snacks and drinks kept open.
- Spit in public places.
- Bathe daily.

Prepare and display posters related to personal hygiene and environmental hygiene.





## Immunity

Our bodies naturally have the ability to control and fight pathogens once they enter the body. This is called natural immunity. This ability varies from person to person.

The body is unable to develop natural immunity against some communicable diseases such as polio and hepatitis-B. We need to take vaccinations to avoid such diseases. Through this, it will be possible to gain immunity. This is called acquired immunity. It is through vaccines that we have survived many epidemics, such as smallpox, plague and polio, which have threatened the very existence of the human race.



Illustration 2.9

Which diseases should be vaccinated against?

Which are the mandatory vaccines to be taken by the age of 16?

Discuss in class. Collect more information from interviews with health workers. Do you need to prepare a questionnaire to interview the healthcare professionals? Which questions can be included?

## Vaccination chart

<b>BCG</b>	Bacillus Calmette-Guerin
<b>OPV</b>	Oral Polio Vaccine
<b>Hep B</b>	Hepatitis B
<b>FIPV</b>	Polio Vaccine - Fractional Dose
<b>RVV</b>	Rotavirus Vaccine

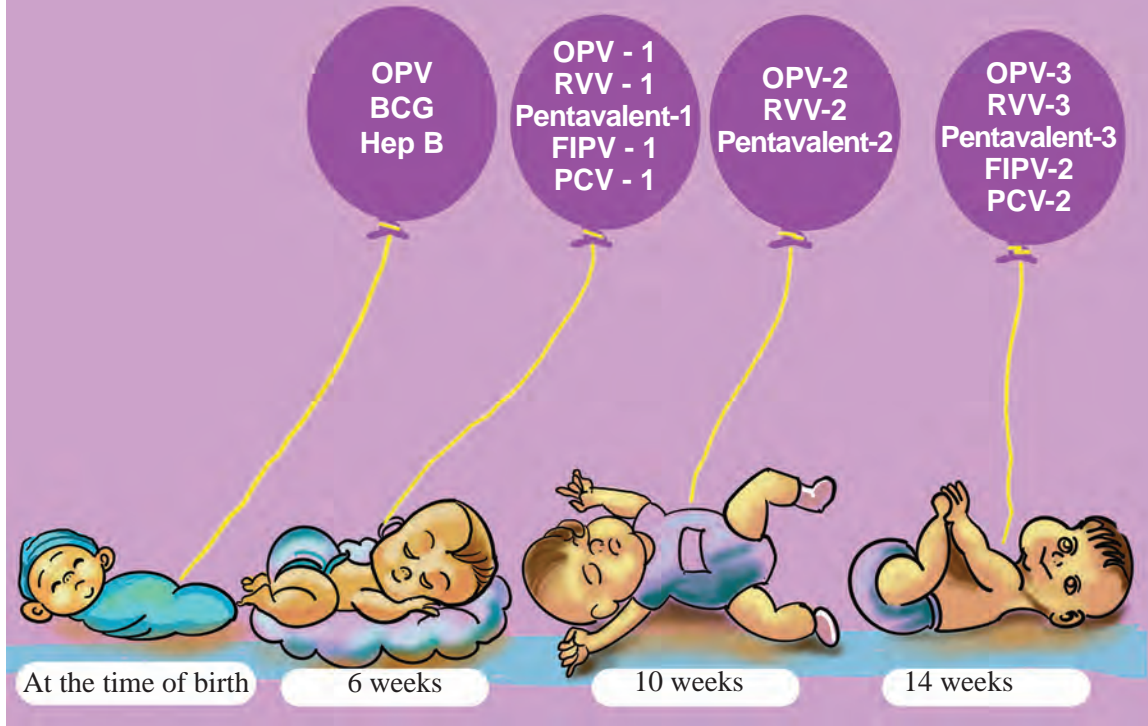


Illustration 2.10

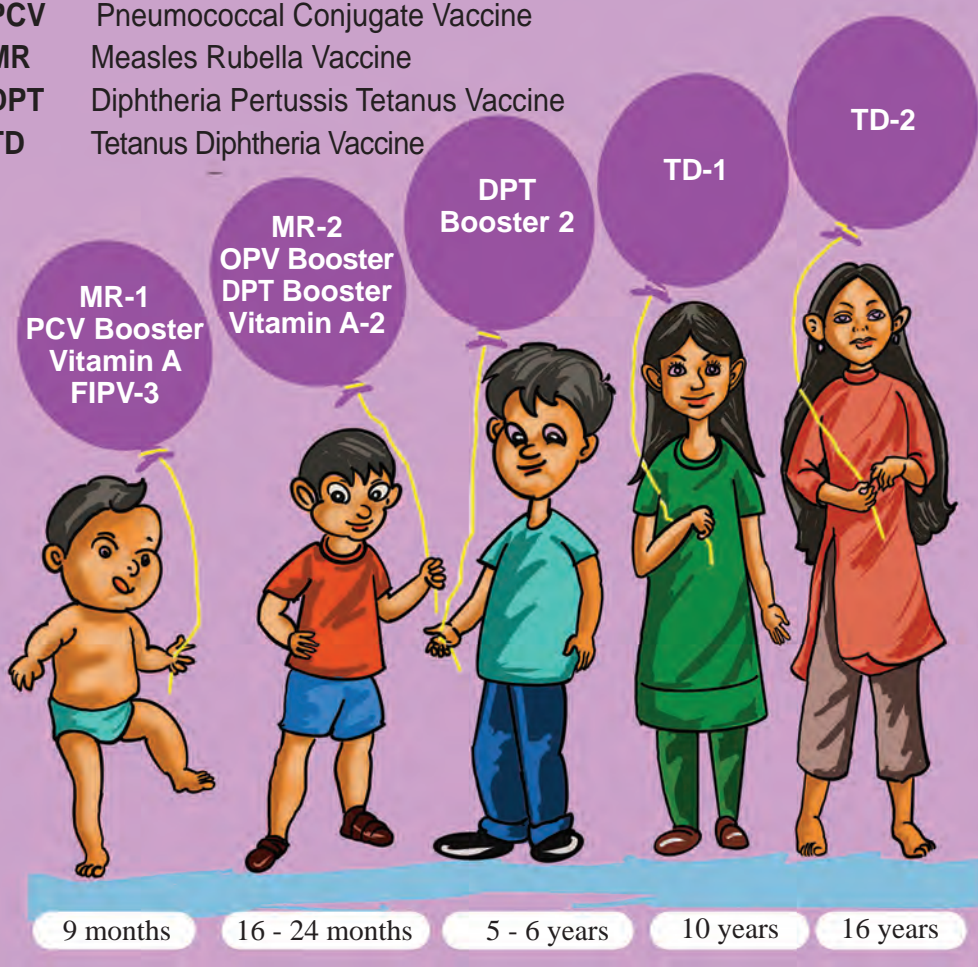
Complete the chart by adding your findings.

Preventive vaccines		
Name of the vaccine	Age	Disease
Polio vaccine		Polio
Tetanus - Diphtheria vaccine	10 years 16 years	

Table 2.4



**PCV** Pneumococcal Conjugate Vaccine  
**MR** Measles Rubella Vaccine  
**DPT** Diphtheria Pertussis Tetanus Vaccine  
**TD** Tetanus Diphtheria Vaccine



Proper awareness is to be given to the people regarding the mode of transmission of diseases and the methods of prevention. What can we do for this?

- Drama
- Puppetry
- Cartoon
- Poster
- 
- 

*Diseases can be kept away with proper awareness and preventive measures. Healthy people are the wealth of a nation.*



## Let us assess .....

1. Write down five decisions you have taken to maintain personal hygiene.
2. Personal and social hygiene are important in preventing communicable diseases. Do you agree with this statement? Please elaborate.
3. Do you agree with the following precautions that we should take to control vector-borne diseases?
  - Eliminate conditions that cause sewage accumulation.
  - Disposal of garbage in public places.
  - If water retention is unavoidable, breed fish such as Guppy and Gambusia in it.
  - Food items need not be kept covered.
  - Use food items only after washing.
  - Drink boiled water.
  - Keep the house and surroundings clean.
  - Practise proper waste disposal at source.



## Extended activities .....

1. Prepare and present a play to educate the public about the circumstances in which communicable diseases spread and the precautions we need to take against them.
2. Prepare a 'Waste Map' of the school premises. Prepare guidelines for making the school environment litter-free on the basis of the information on the map.

