

# BIOTECHNO ACTIVITY BOOK

*Compiled by :*





# EDUHEAL FOUNDATION

• LEARNING FOR LIFE •

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## Preface

**Biotechno Activities book** is a small step towards encouraging school students to take up biotechnology. We at EduHeal Foundation still need lot of help and encouragement from school teachers and Principal in accomplishment of our goal. It is you who form the vital link between EduHeal Foundation and students as you can further encourage students to know about biotechnology on a day to day basics. We would also not sit idle but make efforts to increase interest :

- By publishing books like Biotechno Activities Books.
- Create awareness by conducting Nationwide Biotechnology Olympiad.
- Teacher Training Programme in basics of genetics and Biotechnology.
- Career Development Workshop for Students.
- Virtual Genetic Lab.
- Networking to enhance school/Govt./ Industry Interface.

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|---|---|
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With best wishes

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# CLASS - V

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# Living World



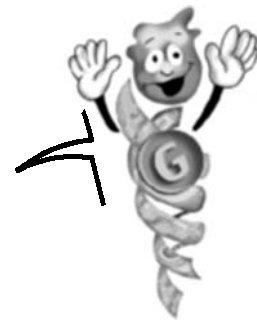
Hello! kids. Let me first of all introduce myself. I am Ginnie. Your new friend. I have come to tell you about some interesting things. Would you like to join me for a wonderful trip in the world of living science?



But ginnie please tell us what is this living science. We have not heard of this.



**Living** - One which can breath, eat food and can survive. **Science** - Study. So living science is the study of living things. You must have studied about living and non living things in your junior classes.



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## Activity :

List three characteristics of living & three characteristics of non living things.

### Living Things

1. \_\_\_\_\_  
\_\_\_\_\_
2. \_\_\_\_\_  
\_\_\_\_\_

### Non Living Things

1. \_\_\_\_\_  
\_\_\_\_\_
2. \_\_\_\_\_  
\_\_\_\_\_

3. \_\_\_\_\_  
\_\_\_\_\_

3. \_\_\_\_\_  
\_\_\_\_\_

### Activity :

Name five living and five non living things from your surroundings.

#### Living Things

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_

#### Non Living Things

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_



Do you know that a proper term is used for living science. So biology is the science of living things. Living things includes plants, animals and micro organisms (Microbes). Let me tell you about these one by one.

### Plants

Plants are a major group of living things (about 300,000 species), including familiar organisms such as trees, flowers, herbs, and ferns. Plants generally do not move. They can prepare their own food and support other animals.



Do not cut us!  
We give you everything  
cereals, vegetables,  
fruits, cotton etc. Also  
now we can run your  
vehicles  
too!

We are your pet  
animals. We take care  
of your house, load  
your items and  
entertain you. We are  
your friends!

## Animals

Animals are that group of living organisms which can move, have sensory organs. They can not make their food and depend on plants for it.



## Micro organism (Microbes)

You better know these as germs. Germs are "micro-organisms" - living things that are too small to see with the naked eye. Most micro-organisms are harmless, but some micro-organisms can make us ill. We tend to call these microorganisms "germs". A germ can either be a bacteria, a virus, a fungi or a parasite. When certain bacteria get into your food and proper cooking does not destroy them, they can give you an upset tummy. Some viruses will cause the common cold.

Certain fungi can give you a skin infection. Several parasites can cause diarrhoea.

We are not always harmful. Do you know that the curd, the cheese and the bread you eat are made only when we help!



**Activity :**

Name three plants and the product you use from them.

Plant Name	Products
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____

**Activity :**

Name three animals which helps you to get your work done.

Animal Name	Used For
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____

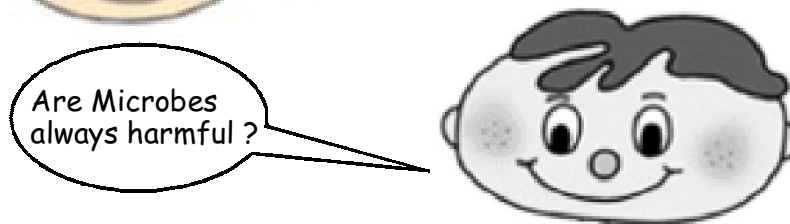
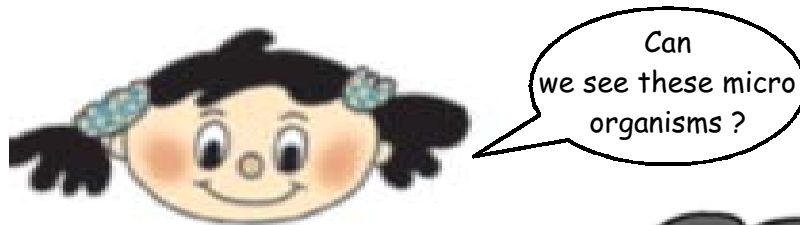
**Activity :**

Name three advertisement you see in television where germs are shown.

A \_\_\_\_\_ B \_\_\_\_\_ C \_\_\_\_\_



# Microbial world - The Unseen Life on Earth



Micro organisms are too small so you cannot see them with your eyes. But you can see them with a special instrument called microscope.



Do you know that this instrument is very useful in the study of biology. I will tell you later that some of our body components can only be seen with microscope.

Microbes are everywhere, but we can't see them. They make us sick, but we can't live without them. Microbes are an integral ingredient in this planet's ecosystem, but we understand so little about them.

Most of us think of microbes as disease-causing germs if we think about them at all. Yet those who study this mysterious, silent, invisible world know that the creatures that populate it do far more good than harm.

Microbes were the first life forms on Earth. They form the basis of the food web and are responsible for the production of most of the Earth's oxygen. Ultimately, all life relies on these tiny, invisible creatures.

### Dangerous Friends and Friendly Enemies

Microbes are everywhere humans are. We can never completely escape their presence. From the minute we are born, they are our constant companions, surrounding us and living inside our bodies. Although many microbes can cause disease, most are harmless or actually beneficial to us.

However, disease is a constant threat to our health and life. Everyone has been affected by disease sometime in his or her life. Infectious bacteria, viruses, fungi, and protozoa have existed longer than the human species.

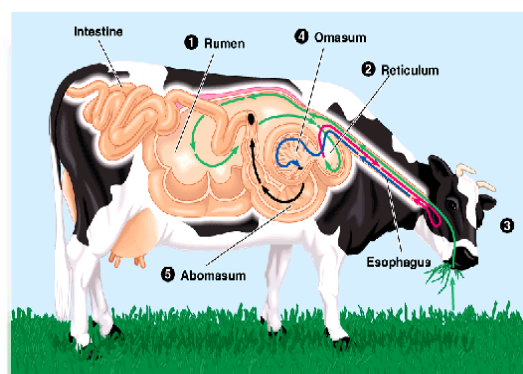
Let me tell you some of their usefulness,

(i) **Make nitrogen available to plants.**

You cannot eat flour, so you convert it into chappati similarly plant need nitrogen for their growth but they cannot take it from atmosphere. So these bacteria, living in the roots of plants, actually help them absorb nitrogen from the surrounding soil.

(ii) **Help cow to eat grass**

Cows eat grasses/plants only. Plants /grasses contain some fibers which are hard to digest. So some bacteria living in the stomach of the cow help them to digest these fibers.



Cow has four stomach and she is able to eat grass because of the microbes in its stomach.