

BIOTECHNO ACTIVITY BOOK

CLASS - II

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EDUHEAL FOUNDATION
• LEARNING FOR LIFE •

Enhancing awareness & knowledge in children about BIOTECH



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Preface

Biotechno Activity Book is a small step towards encouraging school students to take up Biotechnology. These activity books, meant for free distribution to students enrolled for Nationwide Biotechnology Olympiad (NBtO) will help students generating interest for Biotechnology. We at EduHeal Foundation still need a 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 basis. We will also not sit idle but make all possible efforts to increase interest :

- By publishing books like **Biotechno Activity Book**.
- Create awareness by conducting Nationwide Biotechnology Olympiad.
- Teacher Training Programme in pure and applied sciences.
- Career Development Workshop for Students.
- **Online course management system** so as to provide an affordable platform to schools for online teaching and testing.
- Networking to enhance school/Govt./ Industry Interface.

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With best wishes

Dr. Sandeep Ahlawat
Managing Director

CLASS - II

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SYLLABUS GUIDELINES

(based on National Curriculum frame work issued by NCERT)

CLASS - II

Plants

About Plants, Herbs, Shrubs, Trees, Life of Plants what we get from plants.

Animal

About different types of animals, household/pet animals, wild animals, behaviour of animals, young ones of different animals.

Air Around us

Air, features of air, what moving air can do, simple experiments of air.

Water

How water is useful, how water move in nature - water cycle, work that moving water can do.

Up is the sky

Basic knowledge about Sun, Moon and stars, Indian astronauts.

Our Body

Various parts of our body. What work they do. How to keep clean our body parts, bones and muscles.

Food and Nutrition

What we should eat. Which food is good. Good food habits.

Safety and First-Aid


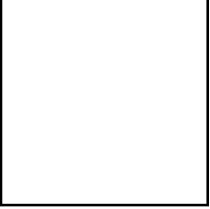
Safety rules to be followed on roads, while playing. What to do when injured. Precaution while playing indoor games.

PLANTS - OUR NECESSITY


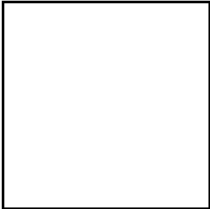
We depend on plants for almost everything. They give us food, vegetables, oils, wood, fibres and lots of other things. Plants are of great importance to us.

Now, look at the figures of the plant products, cut them & paste on the space provided in the sentence which matches it.

1.  gives us  which is sweet in taste.

2.  gives us  which is used to make clothes.

3. From  plant we made , on which we write.

4.  gives us , which mama uses to make chappaties.

5. From  we make .

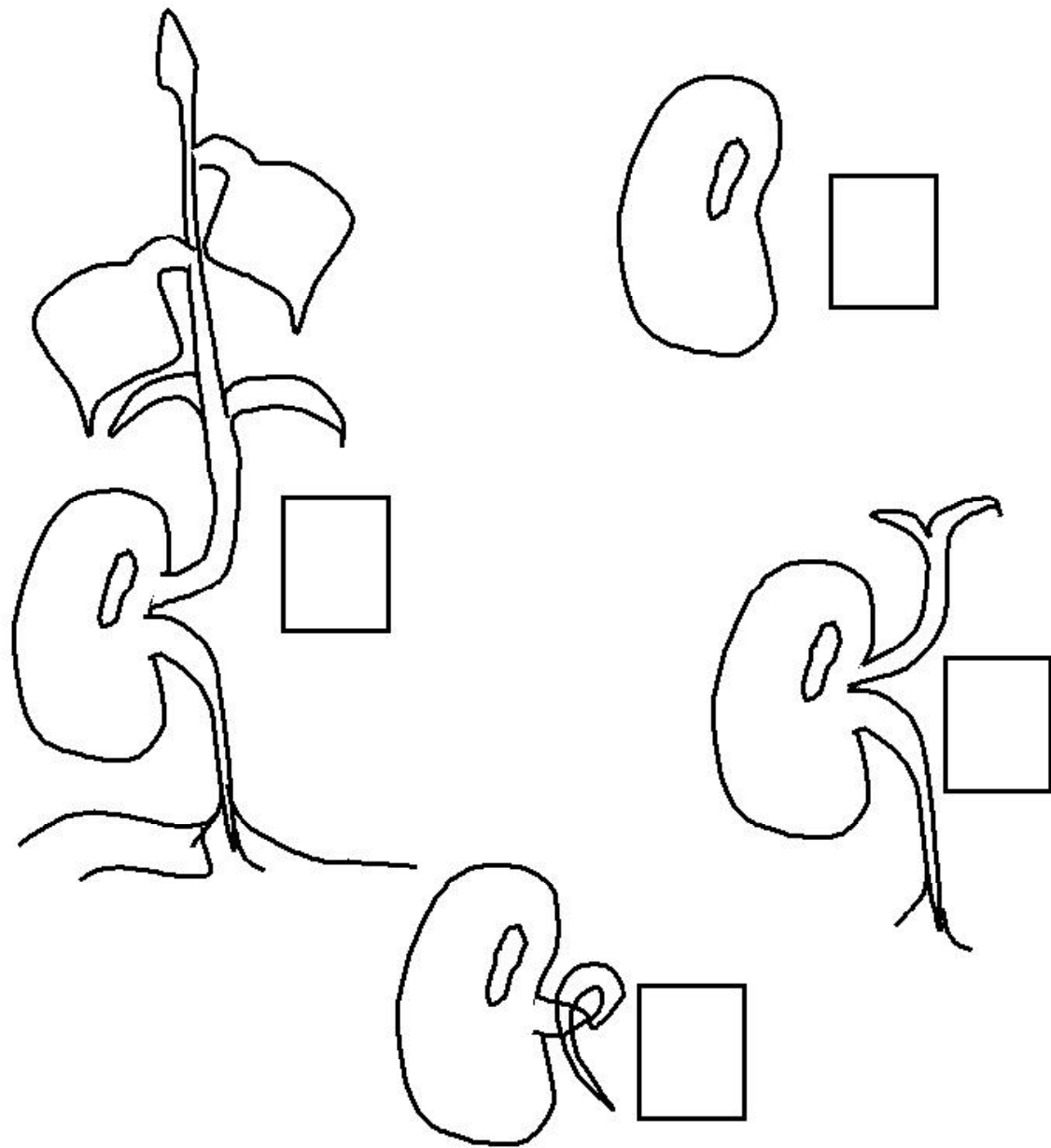
Do you know **Biotechnologist*** can improve plants quality and we can get more of sugar from sugarcane, bigger and good smelling rice from rice plants and obtain variety of beautiful flowers.

* Ask your teacher "who is a Biotechnologist". Can your mother be called an amateur biotechnologist?



COLOUR THE PLANT & SEED

Label the pictures in the order they occur (from 1 to 4) and colour them.



PLANT HALL OF FAME

🌞 Biggest Flower

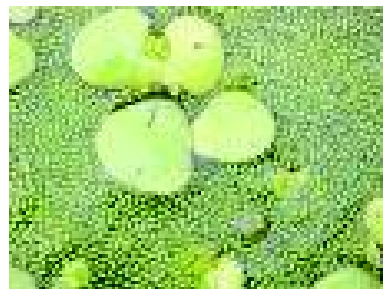
Rafflesia: This flower can be as big as 92 cm wide* and can weigh up to 10 kg**! This is a reddish-brown flower, and gives very bad smell. It is found in South-east Asia. Surprisingly this unusual plant produces no leaves, stems, or roots.



🌞 Smallest Plant

***Wolffia* (Duchweed plant)**

The smallest is *Wolffia* that float on the surface of quiet streams and ponds. An average plant is 0.6 mm long and 0.3 mm wide (Plant can be fit in this space .) and weights about 150 micrograms (approximately the weight of two grains of table salt). It has the smallest flower.



* You may not able to take it out of the door.

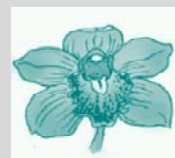
** See a 10 kg '*Atta bori*' in the Super Market. How heavy it is? Can you lift it?

🌞 The Largest Tree

The largest tree is almost 85 meters tall. (You cannot even see its top by standing under it.) The tree has been estimated to weigh nearly 1,400 tons and it contains enough wood to build 120 average-sized houses!



Do you know Biotechnologists have made orchid which glow in dark. Can you imagine what they used to make such orchid.



Yes ! some of you guessed correctly. These are genes of firefly.



Also ! have you ever imagined a rose to be of black colour or blue colour ? Biotechnologist have made such flowers which are naturally not found.

ANIMALS - OUR FRIENDS

Animals are our great friends. They help us in many ways. They give us milk, eggs, meat, leather and many other things. They are our great companions, guard our houses, carry loads & plough fields.

Now, look at the picture of the animal and fill the gaps to know what the animals give us.

1.



I drink this to grow big & healthy.

	I		K
--	---	--	---

2.



My mother uses it to bake yummy cakes!

E		G	
---	--	---	--

3.



Oh! its so cold... clothes made from this keeps us warm.

	O		L			N
--	---	--	---	--	--	---

4.



It is is used to make beautiful clothes.

	I	L	
--	---	---	--

5.



It is sweet to taste & is good for health.

	O		E	
--	---	--	---	--

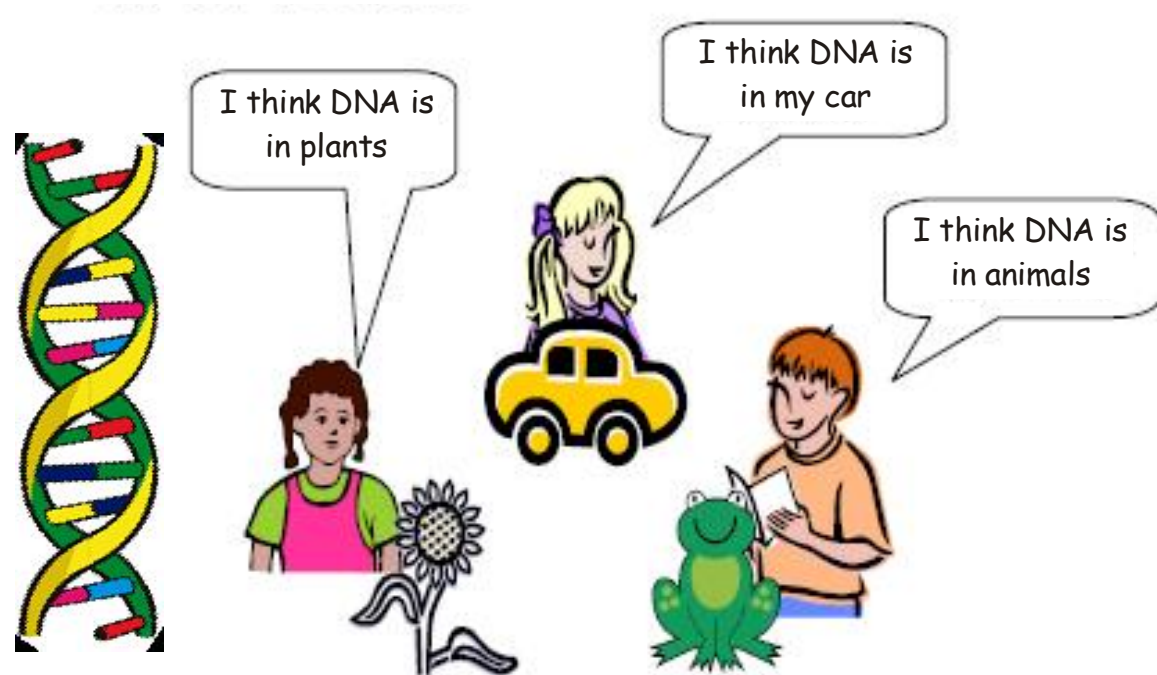
6.



My school shoes are made of this.

L		A		H		R
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WHERE IS DNA FOUND?



Where do you think that DNA is found?

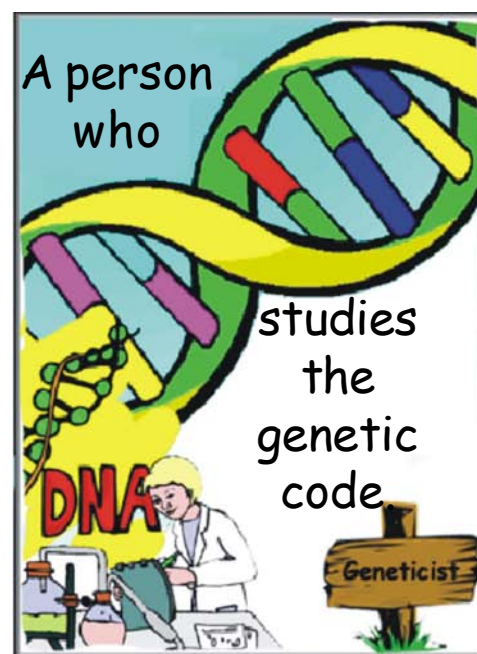
I think that DNA is found

.....

.....

Answer — DNA is found in all things that are living or have lived.

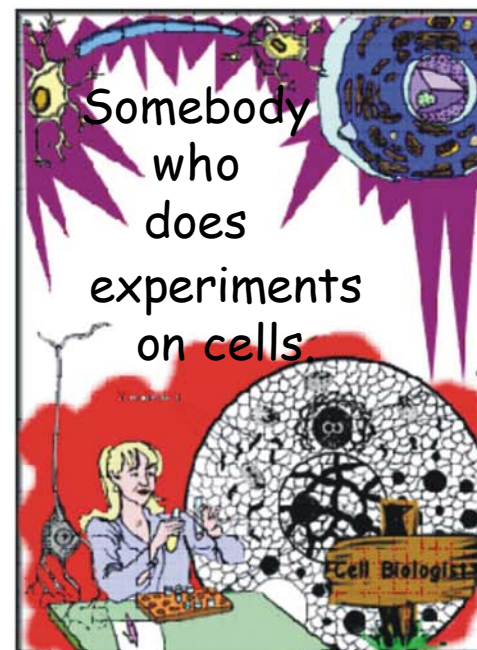
WHO IS WHO?



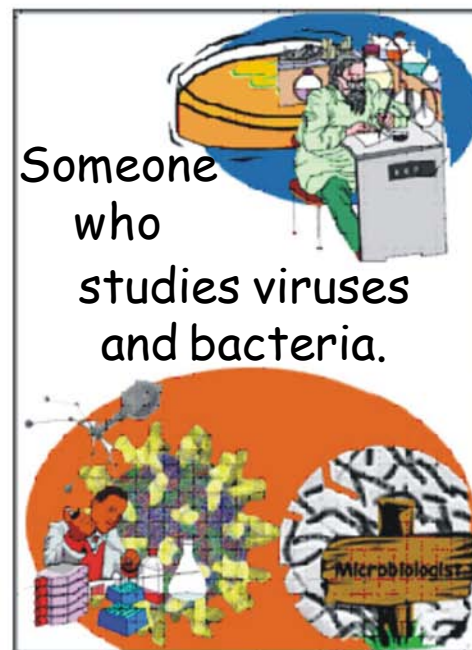
Geneticist



Botanist



Cell Biologist

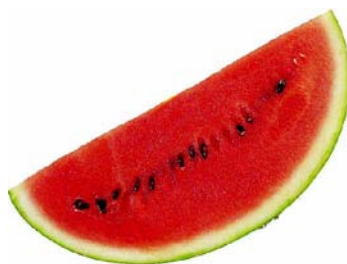


Micro-Biologist


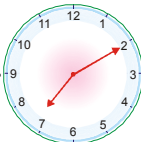
SAMPLE PAPER

MENTAL ABILITY

1. Two apples cost Rs. 10. What is the cost of 1 apple?
(a) Rs 2 (b) Rs 5
(c) Rs 4 (d) none of these
2. If tomorrow is Sunday, what was yesterday ?
(a) friday (b) saturday
(c) monday (d) none of these
3. Write the name of this shape?



- (a) circle (b) triangle
(c) half-circle (d) rectangle

4. You went to park at  and come out at .

What time you spent in the park?

- (a) 80 min (b) 90 min
(c) 1 hr (d) none of these
5. Which match is correct?
- (a) $33 + 5 = 40$ (b) $98 - 67 = 31$
(c) $24 \div 2 = 10$ (d) $4 \times 2 = 12$

SCIENCE

6. Find the odd one?



7. Which type of clothes you should wear in summer.

- (a) cotton
- (b) wool
- (c) silk
- (d) none of these

8. Doctor checks your fever by

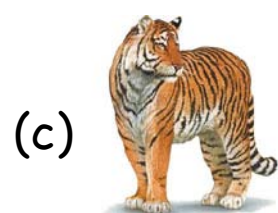
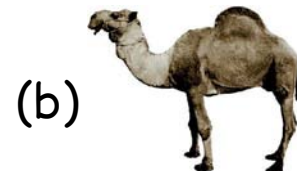
- (a) kilometer
- (b) thermometer
- (c) centimeter
- (d) none of these

9. In the morning you saw an ant on the table. You put a glass tumbler inverted over it. When you came from school you wanted to see what it was doing ? But it is not moving ... Oh! no; it has died. The ant died because

- (a) it did not get food
- (b) you little brother took the tumbler for some time
- (c) of absence of oxygen in the tumbler
- (d) none of these

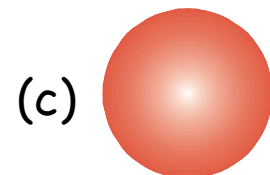


10. The desert animal is



(d) none of these

11. Which of the following give energy to plants to make their food?



(d) none of these

Stars

Moon

Sun

12. In summer people like to take watermelon because

- (a) it is red in colour (b) it is very tasty
(c) it contains more water (d) none of these

13. Which soil has the smallest particles?

- (a) rocky (b) sandy (c) clay (d) none of these

14. The food for a cow is

- (a) ants (b) grass (c) hens (d) none of these



15. Kangaroos are found in

- (a) India (b) America
(c) Australia (d) none of these
16. Bees and butterflies take _____ from flowers.
(a) sugar (b) nectar
(c) colour (d) none of these
17. You got tooth-ache. Mummy took you to a
(a) lawyer (b) dentist
(c) chemist (d) none of these
18. We can not see
(a) sun (b) air
(c) moon (d) none of these
19. Mark the correct order.
(a) ice → water → steam (b) ice → steam → water
(c) water → ice → steam (d) steam → ice → water
20. Which colour is not found in the rainbow ?
(a) blue (b) black (c) yellow (d) red

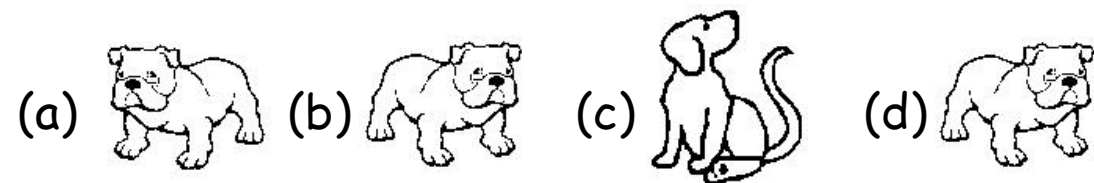
BIOTECHNOLOGY

21. Biotechnology can
(a) improve the quality of food
(b) make more red and tastier tomatoes
(c) make beautiful flowers
(d) all of these

22. Milk kept for long in the sunlight turns to

- (a) water
- (b) sweets
- (c) cheese
- (d) none of these

23. Which of the following is different species.



24. Which of the following is false ?

- (a) Bacteria make curds
- (b) Bacteria makes drugs
- (c) Bacteria causes disease
- (d) None of these

25. Moist bread was kept for three days. Some brown spots appeared on it. What is this ?

- (a) fungus
- (b) bacteria
- (c) food colouring
- (d) none of these

ANSWERS

- | | | | | |
|---------|---------|---------|---------|---------|
| 1. (b) | 2. (a) | 3. (c) | 4. (b) | 5. (b) |
| 6. (c) | 7. (a) | 8. (b) | 9. (c) | 10. (b) |
| 11. (c) | 12. (c) | 13. (c) | 14. (b) | 15. (c) |
| 16. (b) | 17. (b) | 18. (b) | 19. (a) | 20. (b) |
| 21. (d) | 22. (c) | 23. (c) | 24. (d) | 25. (a) |