

SUBJECT: BIOLOGY
TOPIC: TRANSPORTATION IN ANIMALS AND PLANTS

DIARY- LESSON PLAN

Pre- Content/Content / Post –content	Learning Outcome/Objectives	
	<u>General</u>	<u>Specific</u>
Pre Content: Brainstorming session and interactive discussion will be taken up after a garden visit to school and the previous knowledge of students will be tested by asking the following questions: a) What do organisms need for survival? How do they transport wastes to parts and from where they can be removed • Content: Blood • Heart • Blood vessels • Heart beat • Excretion in animals • Transport of substances in plants Post Content: The student at the end of the chapter should be able to comprehend the following concepts. • Stay healthy and fit	Students will be able to: • conceptualize circulatory system and understand the transport of water and food in animals • explore the composition of blood • correlate the changes in number of cells with diseases like anemia leukemia, polycythemia • correlate structure and functions of arteries, veins and the chambers of the heart • observe change in rate of heartbeat under different situations • evolve the definition of excretion • discover the mechanism of transport • application of the concept in our daily life	Students will be able to: • deduce the significance of circulatory system • classify blood into four components • construct a cycle showing circulation of blood • draw and label the section of human heart • analyze and conclude the effects of exercise or any stimulatory action on our heartbeat through activity • analyze the diagram of human excretory system • explore how temperature is regulated by sweating? • investigate the effect of transpiration in plants through activities • correlate and apply in daily life situations like eating healthy food to maintain hemoglobin etc.

Home Work / Assignments

- Worksheets and assignments.
- Question answers from text-book.

AND PROGRESS**MONTH: NOVEMBER****CLASS: VII**

Teacher's Activity	Student's Activity	Teacher's Observation and Remedial action taken
Teacher will: Introduce the topic by arranging a biology lab visit and different organs of the body will be shown to students. Interactive discussion will be taken up. explain the components of blood and their functions arrange a lab visit and inside structure of heart will be shown to students and explained <u>Annexure 11(A):</u> guide the students to make a model of stethoscope and count the number of heartbeats occurring in one minute and after physical exercise for five minutes. explain the human excretory system and explain its functions <u>Annexure 11(B):</u> demonstrate an activity to show that the transportation of water from the roots to the other parts of the plants take place through cells. explain that eating balanced diet and healthy food rich in all essential nutrients is very important.	Students will: visit the lab and participate in the discussion and the brainstorming session .They will be given a chance to speak about their observations. define blood and its components and note down the functions of each comprehend the structure and functions of its various parts <u>Annexure 11(a):</u> perform the activity by making a model of stethoscope and will record the heartbeats. comprehend and list the functions of the various parts <u>Annexure 11(b):</u> observe carefully and share their views by asking their own questions relate it to real life situations and understand the importance of healthy food too	

Teaching Aids – Active Inspire boards, ICR, Materials required for activities, worksheets and textbook, Activity Kits

Methodology / Innovative Methods: Activity based teaching, Know to Unknown, Discussions, Activity method, brainstorming sessions.

Interdisciplinary Links –

- Linked with real life
- **English-** Improves expression and vocabulary

HOD**Coordinator****Vice-Principal****Principal**

ANNEXURE 11(A) & (a)-LANNAEC'S DISCOVERY

Subject	Science
Class	VII
Chapter/Unit	Transportation in plants and animals
Topic	Heartbeat
Time	30 minutes
Nature of Activity	Pair Work

What will I learn (Learning Outcome)?

- To count the number of heartbeats occurring in one minute.

Skills:

- Observing, Understanding, Applying

What I have to do?

- To make a model of a stethoscope and count the number of heartbeats occurring in one minute.

What do I require?

- A glass funnel, rubber tube, a thin rubber sheet or a balloon.

What do I need to know?

- The heart pumps blood into arteries by contracting. When the heart contracts, it becomes smaller in size and pushes blood into main artery with a great force. Then the heart relaxes (comes back to its original size) and gets filled up with blood from pulmonary vein. In this way, the heart keeps on contracting and relaxing again and again to pump blood into the body continuously.
- One complete contraction and relaxation of the heart is called a heartbeat and the doctor listens to our heartbeats with the help of an instrument called stethoscope.

➤ Teacher's Activity

Teacher will

1. explain that one complete contraction and relaxation of the heart is called a heartbeat and the doctor listens to our heartbeats with the help of an instrument called stethoscope.
2. arrange the materials for the individual.
3. make pairs and explain the role of each member of the pair.
4. give instructions regarding the activity.

How will I proceed?

➤ Student's Activity

1. Student A will take a glass funnel of about 6-7 cm diameter.
2. Student B will fix a 50 cm long rubber tube tightly on the stem (narrow end) of the funnel.

3. Student A will stretch a thin rubber sheet (or a balloon) and fix this stretched rubber sheet on the mouth of the funnel tightly with the help of a rubber band and adhesive tape, etc. and our stethoscope is ready.
4. Student B will put the open end of rubber tube in her ears and place the mouth of funnel the chest of Student A, just above the heart and listen carefully.
5. Student B will hear regular 'thumping sounds'. These thumping sounds are called heartbeats.
6. Student B will take a watch and count the number of heartbeats of Student A occurring in one minute.
7. Student A will do any physical exercise for 5 minutes and Student B will again measure the heartbeat for one minute.
8. The steps 4 - 7 mentioned above will now be repeated by Student A and she will now measure the heartbeat of Student B.

What have I observed?

Number of heart beat	Student A	Student B
In one minute		
After 5 minutes of physical exercise		

What have I learnt?

- The number of heartbeats occurring in one minute gives us heart rate and the heart beat varies between ____ to ____ times in a minute. The number of heart beat _____ after a physical exercise.

What am I curious to learn?

- Let us find the pulse and find the pulse rate to show that the pulse rate is equal to the number of heart beats per minute.

Let me evaluate myself

1. What is the difference between a heartbeat and a pulse rate?
Ans. _____.
2. What is a stethoscope? Name its various parts.
Ans. _____.

3. What is the average number of heart beats per minute of an adult person while resting?

Ans._____.

4. Explain, why the heart beats faster during and after an exercise.

Ans._____.

5. If the pulse rate of an athlete is 95 per minute, what is the number of heart beats in the same time?

Ans_____.

ANNEXURE-11(B) & (b)

TRANSPORTATION IN ANIMALS AND PLANTS

Class: VII

Duration-30 minutes

Nature of activity: Individual

Learning Outcome: Students will be able to explain that the plants takes up water and minerals up from the soil with the help of root hairs. The water and minerals are transported from the soil to the leaf through a tissue called xylem by a process called osmosis.

What we have to do?

To prove that the transportation of water from the roots to the other parts of the plants take place through cells.

What do we require?

Water, sugar solution, knife, potato and pins.

What do I need to know?

Water is absorbed by the roots from the soil by a process called osmosis.

Teacher's Activity: Teacher will arrange the materials for the individual and give instructions regarding the activity.

How will you proceed?

Student's Activity:

1. Take a large potato and peel off its outer skin.
2. Cut one end of its end to make the base flat.
3. Now, make a deep and narrow cavity on the inner side.
4. Fill half of the cavity with sugar solution and mark the level by inserting a pin on the wall of the potato.
5. Put the potato in a dish containing some water.
6. Make sure the level of water is below the level of pin.

What have you observed?

We will see that the level of the sugar solution inside the potato cavity has _____ up.

What have you learned?

- Water enters the potato from an area where there are _____ water molecules to an area where there are _____ and the process is known as _____. Water is transported by the cells in the same way from the roots to other parts of the plants.

What more can we do?

- We can repeat this activity by varying the strength of the sugar solution.
- We can also use solutions using different types of solutes for eg, salt.

Extended learning worksheet

A. Match the following:

- | | |
|------------------|---------------------------------|
| 1. Osmosis | (a) ascent of sap |
| 2. Translocation | (b) semi-permeable membrane |
| 3. Transpiration | (c) transport of food in plants |
| 4. Suction pull | (d) stomata |

B. Answer the following questions:

1. What is the direction of movement of water in the above experiment? Give reasons.

2. How does water move from the soil to the xylem of root?

3. How does water reach from the roots of a plant to the leaves?

4. What would happen in the above experiment, if-

(a) the level of water is higher than that of sugar solution?

(b) wall of the potato is quite thick?

© skin of the potato is not peeled off?