

PM SHRI JAWAHAR NAVODAYA VIDYALAYA
PUDUCHERRY 605014



PROJECT WORK



ART & MUSIC INTEGRATED LEARNING

BIOLOGY- THE MUSICAL WAY

PARTS OF A PLANT CELL

PM SHRI JAWAHAR NAVODAYA VIDYALAYA

PUDUCHERRY- 605014



PROJECT SUBMITTED TO JNV PUDUCHERRY IN PARTIAL
FULFILMENT OF REQUIREMENTS FOR THE PROJECT IN
ART AND MUSIC INTEGRATED LEARNING IN THE TOPIC

BIOLOGY – THE MUSICAL WAY

PLANT CELL



SUBMITTED BY

C PERIYANAYAGI (TGT MUSIC)



ACKNOWLEDGEMENTS

1. *I am thankful to the Universe of God, for granting me, the wisdom to successfully complete this project.*
2. *I am thankful to DC Shri T. Gopalakrishna, of NVS RO of Hyderabad, for their best inputs for their best results.*
3. *I am thankful to the Director of NLI RR, Shri. V. Jagadeeshachary, for providing the best resource persons, namely Prof. Vasuki Belavadi, Prof Kumaraswamy, Prof. A. Jalandharacharya, Dr. Pragya Pyasi and Dr. N. Venkateshwarlu, during my 30 hours of training programme, from 11.12.2023 to 15.12.2023.*
4. *My sincere thanks to my Principal Shri P. Kannadasan and my Vice Principal Shri S. Silvanee, who supported and encouraged me to prepare and present my project well.*
5. *My sincere thanks to Mrs. MC Bindya, PGT Biology, who guided me and helped me, where ever I needed her assistance..*
6. *I am thankful to Master Mohamed Fardeen and Master Sivaguru, master Manopraveen of Class 12, who helped me during their leisure in recording and editing the video and in other areas concerning this project.*
7. *I am thankful to all my Colleagues of JNV Puducherry, who take pride in all my efforts.*
8. *I am thankful to all my beloved students of Class 9th A & B Sections Batch of 36, who took great pride in learning the song and presenting it very well.*

PM SHRI JAWAHAR NAVODAYA VIDYALAYA

PUDUCHERRY 605014



ART AND MUSIC INTEGRATED LEARNING

2023 - 24

RECORD OF PROJECT WORK

IN

BIOLOGY PLANT CELL - THE MUSICAL WAY

NAME OF THE TEACHER :

MRS C PERIYANAYAGI (TGT MUSIC)



CERTIFICATE

This is to certify, that this project work entitled Biology -The Musical Way; Parts Of A Plant Cell, is a bonafide record work done by Mrs C Periyayagi, TGT Music, of JNV Puducherry, in fulfilment for the Art and Music Integrated Learning, which is planned and taught to the students of of Class 9th A & B Sections. This song in Biology, on the 'Parts Of A Plant Cell' was recorded on 09.03.2024.


PRINCIPAL
प्राचार्य / PRINCIPAL
पीएम. श्री. ज.न.वि. पुदुच्चेरी
PM SHRI J.N.V. PUDUCHERRY

TITLE: BIOLOGY – THE MUSICAL WAY

PARTS OF A PLANT CELL



AIM : To help the students to learn the cell organelles, with ease, while enjoying the music, making Biology enjoyable.

OBJECTIVES :

1. By learning the parts of a plant cell in Biology through music, the students will never forget this chapter throughout their lives.
2. In the exams, the students will be able to easily draw the diagram of a plant cell and label its organelles.
3. If one or more organelles, with their function is asked in the exams, then also the children will be able to recollect the song and write their functions.
4. Thus this pedagogical practice in this interdisciplinary approach enables a child to learn the parts of a plant cell, while enjoying the music.

THE BACKGROUND OF THE SONG

1. As a child, I loved Biology and enjoyed learning the parts of both plant cell as well as the animal cell
2. In every exam, even if it wasn't asked I would draw and when questioned by my teacher, I would say, that I liked it very much.
3. So in each exam, even if its not a part of the 'Question Paper ' my Biology teacher then Ms Neena Munjal would put a tick, with no marks.
4. Years later, during my interdisciplinary approach towards academic subjects, I thought of taking this subject in my pedagogical practice.
5. So, I collaborated with my Colleague Mrs. MC Bindya, PGT Biology and therefore with her guidance I wrote the lyrics without disturbing the contents.
6. Then I composed the music for the song.
7. Thus the song was ready to be taught.

THE STEPS INVOLVED

1. I discussed my plan to my Colleague Mrs MC Bindya, who was too happy with the idea.
2. I requested Madam Bindya to give me the diagram with the functions of each organelle.
3. I started writing the lyrics without disturbing the contents.
4. I gave a brief talk to the students about the song and also explained, as to how it would help them to learn the functions of the organelles easily.
5. I wrote the function of one organelle at a time and taught them the lyrics, with the meaning.
6. Meanwhile, Madam Bindya, PGT Biology was engaged in the task of preparing the chart works, teaching the children as to how the shapes should be cut and coloured.
7. I used all my substitution classes to teach the students.
8. Then a PPT was created to help them to see and sing better.
9. The students were extremely quick in learning the song.
10. A day was fixed and teachers who were free were invited to observe my class.
11. Mr. Sathyam Kaseera PGT Economics and Mrs Asha, TGT Science were free, who observed my class.
12. On 08.03.2024, after one rehearsal, the song was recorded.
13. I took help from 'Filmora App Free Application' for editing and corrections and I published my song in my YouTube channel.

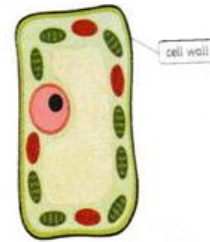


THE LYRICS

Cell is the basic unit of any life, 'Plant Cell' & 'Animal Cell' are the two types.

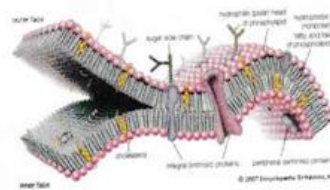
Let us learn the parts of a plant cell my friend, it enriches our knowledge about process of plant life.

CELL WALL – Its outermost covering and protection of plant cell.



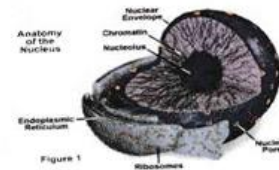
CELL MEMBRANE: It determines what goes in and out of cell.

It also acts in supporting and protecting the cell.



NUCLEUS: Its vital function is to store the DNA for growth.

Its control centre for the reproduction and growth.



VACUOLE: It helps in the maintenance of storage and the shape.

It also helps in digestion and wastage removed.



RIBOSOME: It helps in the process of making the protein.

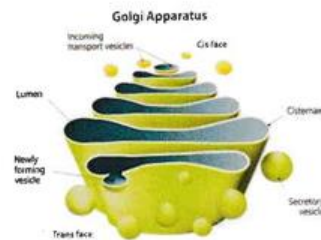
It also helps in the process of 'Photosynthesis



GOLGI APARATUS: It functions in transporting and modifying protein.

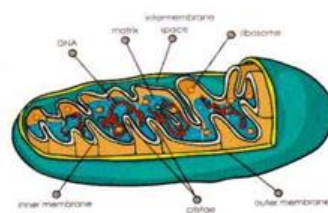
It moves the materials, within and out of cells.

To convert the sunlight into energy for food.

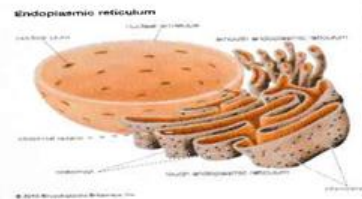


MITOCHONDRIA: Its given a special name called 'Power House' of the cell.

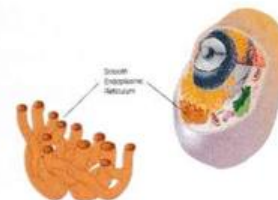
It breaks down food into energy for cells.



ROUGH ENDOPLASMIC RETICULAM: It transports protein to the cell.



SMOOTH ENDOPLASMIC RETICULAM: It transports lipid to the cell.



So, these are the parts of a plant cell my friends, that helps to understand the

'Eukaryotic' cells. The Eukaryotic cell is membrane bound, cell organelles and a

Nuclear membrane. So this was our study on

'PARTS OF A PLANT CELL'

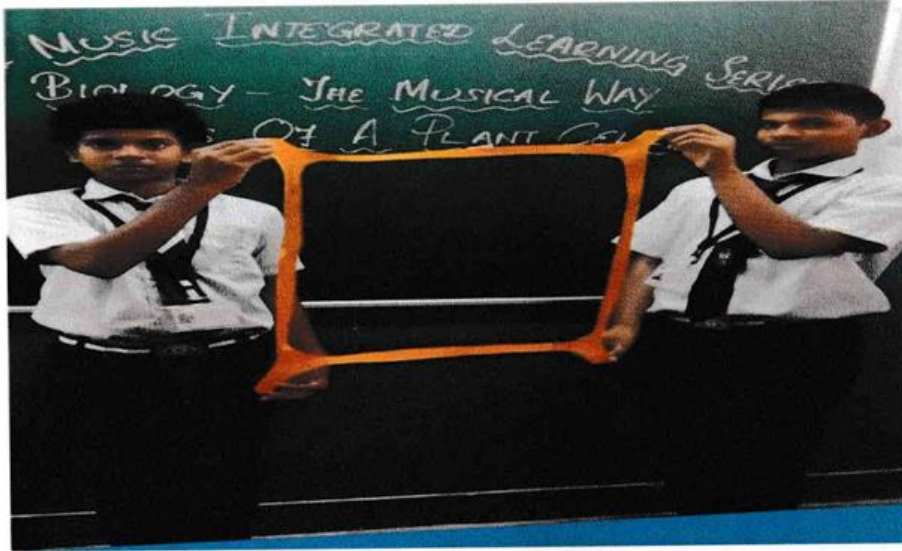
RESULTS

- 1.The students quickly learnt names of the organelles and their functions, of a 'Plant Cell' while enjoying the lyrics with music.
- 2.An important unit in Biology was easily completed using music as a teaching aid.
- 3.Therefore 'Art & Music Integrated Learning', is used as a pedagogical approach for learning Biology.
- 4.Mrs MC Bindya, PGT Biology of Jawahar Navodaya Vidyalaya Puducherry, was extremely happy, because the whole class responded very well and learnt the functions of the parts of a plant cell easily and quickly.
- 5.Children requested me to compose more songs in all the academic subjects, so that the process of learning becomes easy for them.

SUGGESTIONS

1. **ONE UNIT FROM EVERY SUBJECT SHOULD BE CONNECTED TO MUSIC.**
2. **EVERY SUBJECT TEACHER, WHO IS DESIROUS, SHOULD BE ENCOURAGED TO SEEK THE HELP OF MUSIC TEACHER, TO TEACH A TOPIC THAT WILL HELP THE STUDENTS TO UNDERSTAND AND LEARN, THUS HELPING BOTH THE STUDENTS AND THE TAUGHT.**

PHOTOPLATES



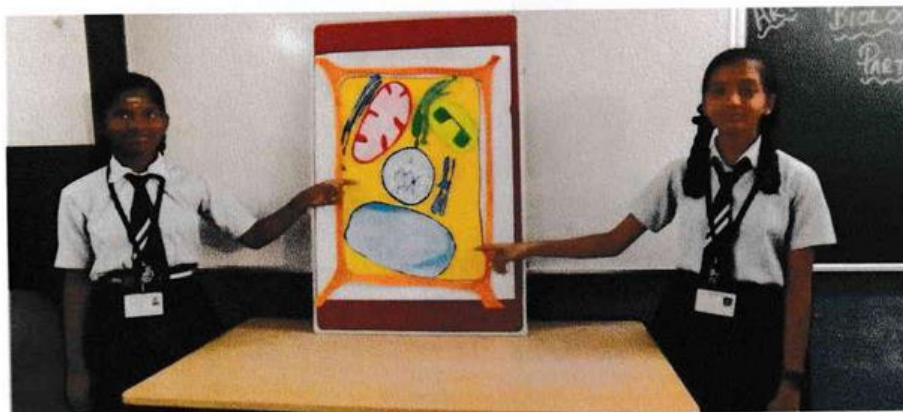
MASTER DINESH KARTHOIC AND KIRUBAKARAN, DISPLAY THE CELL WALL.



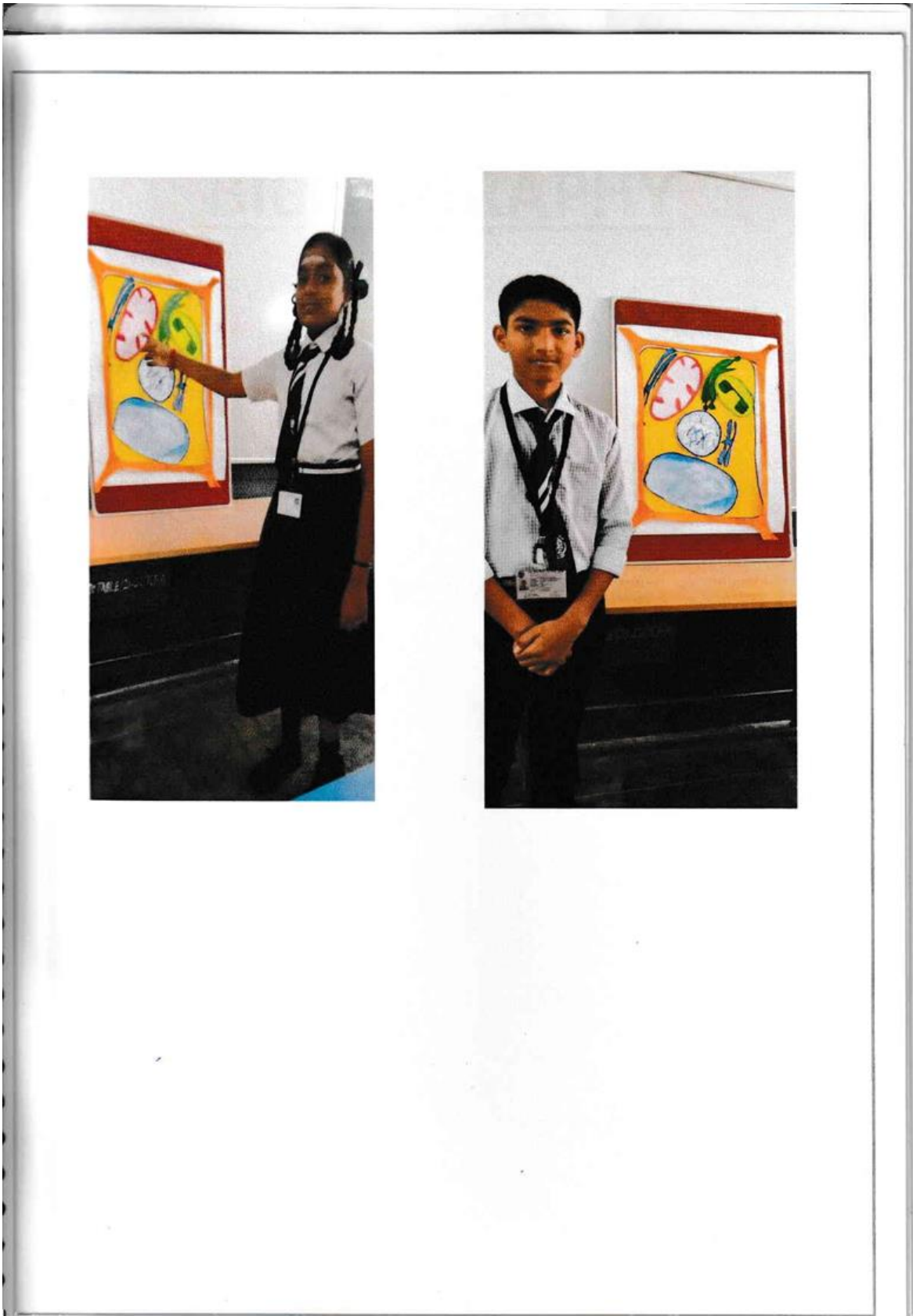
CELL MEMBRANE



MRS.C.PERIYANAYAGI (TGT MUSIC) AND MRS.M.C.BINDHYA(PGT BIOLOGY)



GOPIKA SRI AND BHAVEESHA , DISPLAYING RIBOSOME



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