

K. D. PAWAR SHIKSHAN MAHAVIDYALAYA

AANGEWADA, NAGPUR ROAD, SAONER DIST- NAGPUR-441107 (Recognized by N.C.T.E. & R.T.M. Nagpur University, Nagpur) Mob. No. 9822697899

N.C.T.E. Code: APW03501/1234513 RTM Nagpur University College Code: 348

Ref: NAAC 2024/MLD/Cr-3.1.4

Date-07/05/2024

Criteria: 3.1.4	Institution has created an eco-system for innovations and other initiatives for creation and transfer of knowledge that include 1. Participative efforts (brain storming, think tank,etc.) to identify possible and needed innovations 2. Encouragement to novel ideas 3. Official approval and support for innovative try-outs 4. Material and procedural supports			
Findings of DVV	Documentary evidences in support of the claims. Details of reports highlighting the claims made by the institution. Reports of innovations tried out and ideas incubated Copyrights or patents filed			
Response/ Clarification	1). One page reports are attached in (Appendix I)			

SEAL SEAL SAUNCE

K.D.Pawar Shikshan Mehavidyalaya Sauner, Dist. Nagpus

Appendix I



K. D. PAWAR SHIKSHAN MAHAVIDYALAYA

AANGEWADA, NAGPUR ROAD, SAONER DIST- NAGPUR-441107 (Recognized by N.C.T.E. & R.T.M. Nagpur University)

N.C.T.E. Code: APW03501/1234513 RTM Nagpur University College Code: 348

Academic Year : 2022-23

Participants Count : All students

Place : MULTI PURPOSE HALL.

Objective: To innovations and other initiatives for creation and transfer of knowledge that

include

K D Pawar Shikshan Mahavidyalaya, Saoner, has taken some Projects every year for innovations and other inatiatives for creation and transfer of knowledge that includes participative efforts like Brain storming, Think tank etc. to identify possible and needed innovations, encouragement to novel ideas.



COLECE OF FOLK

K.D.Pawar Shikshan Mehavidyalaya Sauner, Dist. Nagpus

ACTION RESEARCH REPORT

"To Solve the Problem faced by students in Food Sample Test of starch in Biology Practical of std. 9th 'A' in NagarParishad High School, Saoner"

Submitted to the Rashtrasant Tukdoji Maharaj Nagpur
University, in the partial fulfillment for the degree of Back for
of Education (B.Ed.)

NAME OF RESEARCHE

Ms. Palak Chauhan

(B.Ed. 4" Sem.)

NAME OF GUIDE

Dr. Bhavika Jain

SUBM: TTED TO

K. D. Pawar Shikshan Mahavidyalaya, Saoner

SESSION

2022-2023

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SESSION

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DECLARATION

It is hereby declared that the Action Research entitle "To Solve the problem faced by students in Food Sample test of Starch in Biology Practical of Standard 9th 'A' in Nagar Parishad High School, Saoner" is based on my original work and has been submitted by me to any other Institution / University for any other course.

Place: SAONER

Date: 21/06/2023

Researcher

Ms. Palak Chauhan

B.Ed. 4th semester

K.D.Pawar College, Saoner

CERTIFICATE OF GUIDE

It is hereby certified that the Action Research "To Solve the problem faced by students in Food Sample test of Starch in Biology Practical of Standard 9th 'A' in Nagar Parishad High School, Saoner" submitted by Ms. Palak Chauhan for Bachelor of Education of K. D. Pawar Shikshan Mahavidyalaya, Saoner has been duly completed.

The entire study embodies the work of the candidate herself respect of its contents & its literacy presentation the work. She has submitted is satisfactory for the Degree in Teacher's Education from K. D. Pawar Shikshan Mahavidyalaya, Saoner.

Place: SAONER

Date: 21/06/2023

GUIDE

Dr. Bhavika Jain

CERTIFICATE OF PRINCIPAL

This is to certify that Miss. Palak Chauhan is the bonafide student of this institution and this project report submitted by her, the research work carried out under the guidance and supervision Dr. Bhavika Jain.

Further, it is a piece of research of sufficient standard to warrant its submission to the University for the Award of the said Degree Bachelor of Education.

The assistance and help rendered to the researcher during the course of his investigation in the form of basic source material and information have been duly acknowledged.

Place: SAONER

Date: 21/06/23

Principal

Dr. S. A. Ghodeswar

ACKNOWLEDGEMENT

It is my great pleasure to put forward this action research project on the topic "To Solve the problem faced by students in Food Sample test of Starch in Biology Practical of Standard 9th 'A' in Nagar Parishad High School, Saoner" for satisfying the requirement of fulfillment of B.Ed. from K. D. Pawar Shikshan Mahavidyalaya, Saoner.

In the process of preparation of this report, I am indebted to several persons. I wish to acknowledge my heartiest gratitude to *Dr. Bhavika Jain Madam* without their guidance and inspiration it would not have been possible for me to complete my work efficiently. Se has always been a guiding lamp for me with her valuable guidance suggestions and motivation which gave sharpness to my work.

I would also than to all teaching and non-teaching staff of our college **K. D. Pawar Shikshan Mahavidyalaya, Saoner** for their kind assistance. I would also like to thank the student of the *Nagar Parishad High School, Saoner* for their Co-operation.

Last but not least, my grateful thanks to my parents and family members for this Encouragement and inspiration which always lead me towards success and progress.

Special thanks to the images of God and earth i.e. my parents, my family members, my friends without their blessing and good wishes nothing was possible for me.

Place: SAONER

Date: 21/06/23

Researcher

Miss. Palak Chauhan

CHAPTER - 1 INTRODUCTION AND IDENTIFICATION OF THE PROBLEM

Chapter - 1

INTRODUCTION AND IDENTIFICATION OF PROBLEM

1.1. Introduction

Research:-

Research comprises of two words, "Re" and "Search". While "Re" implies a repetitive or iterative process, "Search" denotes making a thorough examination of or looking over carefully in order to find something. Different researchers have defined research in various ways due to its wide scope but, in general, research can be as a scientific process where new facts, ideas, and theories are established and or proved in different areas of knowledge for the betterment of world.

According to John Best, "Research is a systematic activity directed towards discovery and the development of an organized body of knowledge."

According to Waltz and Bausell, "Research is a systematic, formal, rigorous and precise process employed to gain solution to problem or to discover and interpret new facts and relationships."

According to Clifford Woody, "Research comprises defining and redefining problems, formulating hypothesis or suggested solutions, collecting, organizing and evaluating data, making deductions and reaching conclusion to determine they fit the formulating hypothesis."

Action Research :-

The term "Action Research" was coined by Kurt Lewin in the year of 1946. Kurt Lewin is regarded as the founder of action research. But the term action research was introduced to the educational community by Stephen Corey and his associates at Teacher's College of Colombia University in 1949.

According to Carr and Kemmis, "Action research is simply a form of self elective enquiry undertaken by participants in social situation in order to improve the rationality and justice of their own practices, their understanding of these practices, and the situation in which the practices are carried out."

According to McCutcheon and Jung, "Systemic inquiry that is collective, collaborative, self-reflective, critical and undertaken by participants in the enquiry."

1.2. Background of Research Problem :-

According to oxford Advanced Learner Dictionary (2000) define "problems" as a things that is difficult to deal with or to understand effectively. According to the Oxford advanced learner dictionary (2000) define practical as an ideal, on method or a course of action, right or sensible, likely to be successful.

Practical work is very essential to the effective teaching of body in school. Every body citizen will be able to participate more effectively in any life situation, he can speak out on question that involve both biology principle and human welfare, such knowledge will out come from were bookwork, but from practical application of the materials learnt to real life situation

Science is the study of the natural things around us. Biology being a branch of science involved the study of living and non-living things.

Similarly World Book Encyclopedia(2000), define Biology as the scientific study of living thing. Traditionally, Biology is divided into two branches Viz; Botany study of plants and Zoology the study of animals.

Why Practical is Important?

- Illustrates the beauty and complexity of the living world.
- Promotes understanding of how to extract information from complex living systems
- Provides experience of analyzing and evaluating variable data
- Highlights and promotes discussion of ethical issues
- Gives students the skills to tackle global challenges

1.3. Need and Importance:-

There is an increasing demand for science education in the society as we are living in an era of science and technology. Science education is very important for the individual benefits and for the development of the society on the whole. Science is also very important in our day-to-day lives.

Science education not only develops knowledge and competence in the subject but also helps in developing values of life. Knowledge of science prepares the individual to face the challenges of the ever-changing modern world. We can inculcate a number of values in the students through Biological Sciences education.

- Acquire the skills and understand the methods of processes that lead to generation and Validation of scientific knowledge.
- Relate science education to environment (natural environment, artifacts and people), local as well as global and appreciate the issues at the interface of science, technology and society.
- Imbibe the values of honesty, integrity, cooperation, concern for life and preservation of environment.
- Cultivate scientific temper- objectivity, skepticism, critical thinking.

1.4. Statement of Research Problem :-

"To Solve the problem faced by students in Food Sample test of Starch in Biology Practical of Standard 9th 'A' in Nagar Parishad High School, Saoner"

1.5. Defining and Delimiting the Problem :-

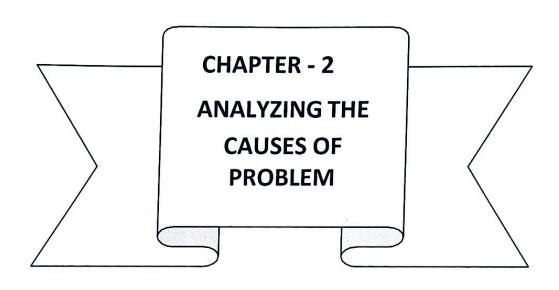
- Operational Definition:
 - **Science:** a process for learning about the natural world that tests ideas using evidence gathered from nature.
 - Biology: A natural science concerned with the study of life and living organisms. Primarily deals with structure, function, growth, evolution, and distribution of organism
 - Student: A person studying in the school.
 - **Experiment:** Scientific procedure undertaken to demonstrate unknown facts.

Scope and Limitation:

- The study of the research work was specifically based on the students of the Nagar Parishad High School, Saoner of standard 9th'A'.
- The Scope and Limitation of research is also limited to the practical of dissecting the flower.

1.6. Objectives :-

- 1) To find out the problem of the student while doing the practical.
- 2) To minimize or solve the problem in Food Sample test of Starch.
- 3) To identify the drawbacks of the present teaching method.
- 4) To develop the skill of handling the instrument.



Chapter- 2

ANALYSIS THE CAUSES OF THE PROBLEM

2.1 Probable Reasons:-

- Lack of Previous Knowledge.
- Lack of interest in practical.
- Lack of attention in class.
- Students are not having proper skill of handling the instrument.
 - Irregular attendance in the class.

Traditional method of teaching.

Poor infrastructure in the school.

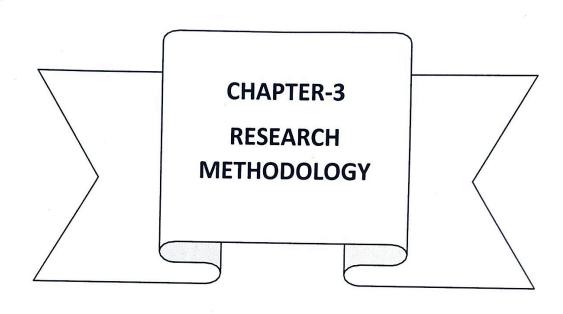
.2. Formulation of Hypothesis:

An action hypothesis is one that is formed in action research. hypothesis could be in declarative forms, predictive form, question form, or null orm. An action hypothesis is formed after listing all possible causes and choosing ne most likely causes among them.

The action hypothesis of this study can be mentioned as follows:

- Previous knowledge of the subject helps the students to understand better.

 Giving proper knowledge about Carbohydrate and food item in which carbohydrate are present can be done prior to practical.
- If teacher give proper instruction and demonstration of how to handle the test tubes how it can affect the student performance.
- Motivating the student towards the importance of the practical knowledge can also help in creating interest in the practical.



2) Qualitative

- Descriptive (What is the current situation?)
- Ex post facto/Causal comparative (What was the possible cause?)
- Experimental (What is the cause?)

EXPERIMENTAL METHOD:

"The research which affect one factor & the other studied is called Experimental method" in specific term experimental research means examining the hypothesis indicating the cause and the effect relation.

Experimental method is conducted to understand the effect of the factor ike teaching method. Educational instrument are tools used while teaching experimental method involves the factor called variable factor they have peculiar characteristics.

There are three steps of experimental method.

1) Pre- Test 2) Treatment 3) Post-Test

These methods are helpful to carry out the research work efficiently experimental method has been used for the research purpose by the researcher.

3.3 Sampling:-

Sampling is the act, process or technique of selecting a suitable sample or a epresentative part of a population for a purpose of determining a parameters or haracteristics of the whole population.

Simple Random Sampling:

A method of selecting a sample (random sample) from a statistical population in such a way that every possible sample that could be selected has a predetermined probability of being selected.

In this research the random sample was taken from student of 9th standard. The total number of student were 50 from which 20 students were selected for sample.

3.4 Research Designing:-

Single group design:

This design involves a single treatment with two or more levels.

A design in which a group of subject are administered a treatment and then measured.

It does not have experimental group or control group.

Parallel group design:

This type of experimental group consist of two or more groups wherein one group is control group with two or more experimental group. The control group or parallel group serve as a basis of experimental group, which is manipulated or changed but the experimental group vary

3.5. <u>Tools :-</u>

The instrument used for purpose of data collection and they are measurable and observable for data analysis and interpretation which can be constructed by researcher according to objectives.

In this research questionnaires cum-test and observation were used as a tool for collecting the data.

Questionnaires:

Questionnaires are instruments used for collecting data. The Questionnaire_usually includes a set of standardized questions that explore a specific topic and collect information about demographics, opinions, attitudes or behaviors. A questionnaire is a systematic complication of questions from specific units or chapters that are submitted to a sampling of the population from which information is desired. In the case of the present study also questionnaire has been used as a tool for data collection.

Observation:

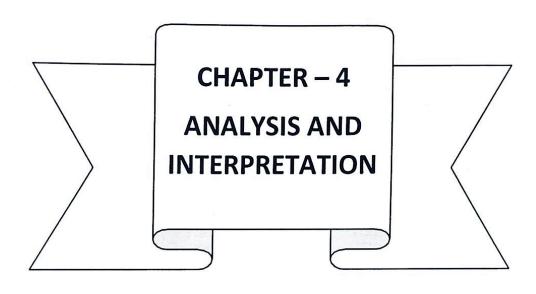
Sometimes, the best way of data collection is Observation. This can be done directly or indirectly with the subject knowledge or unaware that they are observed. In this situation, continuous observation may be used. When the objects do not know that they are observed, then they behave naturally and accurate information can be collected. In the present study also some information regarding the students is collected through the method of observation.

3.6 Data Collection :-

After taking permission from the respective principle of the school, data was collected using questionnaires a tool of data collection.

Questionnaires were given to the student and ask them to fill that questionnaire carefully.

In this way data has been collected from the student.



Chapter- 4

ANALYSIS AND INTERPRETATION

4.1. STATISTICAL PROCEDURE:-

The data collected has been organized classified and tabulated analysis is carried out separately for each question and interpretation is done accordingly.

Research has scored the questionnaire and scoring has been done with the help of statistical measures.

PRE-TEST:

Pre-Test has been taken by researcher in standard 9th 'A' questionnaire-cum-test for student is given to 20 students. 30 minutes is allotted by the researcher on the sample for checking their knowledge about experiment.

The researcher conducts the pre-test on the student of standard 9th 'A' Nagar Parishad High School Saoner.

4.2. ANALYSIS:-

Analysis data means studying tabulated material in order to determine inherent fact or meaning in order to determine, it involves breaking down existing complex factor into simple part and putting the part together in new arrangement for the purpose of interpretation.

According to Good Barr and Scats analysis is a process which enters into research in one form or another from the very beginning. It may be fair to say that research consists in generate of data and the analysis of their data but no amount of analysis on validity entreat from the data factor which are not present in the total procedure at research. One researcher should adopt detached & objective view point. Thus a proper interpretation is that which is clear detached and factual.

4.3. TABULATION:-

Tabulation denotes the recording of classified material in accurate mathematical terms.

e.g. Marking and counting frequency tallies for different items on which information is gathered tabulation is a tedious & pain taking process & must be done accurately.

The entire raw data should be tested on the basis of the purpose for which they gathered only the useful variable data should be tested.

SCORE SHEET OF PRE-TEST

Sr. No.	Name of Student	Marks Obtained (20)		
1	Saniya sheikh	11		
2	Tanisha kamlesh	9		
3	Prajay likhare	8		
4	Pragya shende	10		
5	Dimple sharma	11		
6	Daksh kobragade	5		
7	Harshal yadav	6		
8	Himanshi jain	8		
9	Kirti Dass	9		
10	Kartik Gokhle 10			
11	Manisha sable	9		
12	Mohan Mishra	8		
13	Nitesh Bhatt	12		
14	Palash joshi 13			
15	Ria kumar	9		
16	Rohit bhati	13		

17	Sakshi Maheshwari	10
18	Sejal Chauragade	11
19	Tara Thakur	6
20 Ravina Choudhary		9

SCORE SHEET OF POST-TEST

Sr. No.	Name of Student	Marks Obtained (20)		
1	Saniya sheikh	15		
2	Tanisha Kamlesh	14		
3	Prajay Likhare	16		
4	Pragya shende	18		
5	Dimple sharma	17		
6	Daksh kobragade	12		
7	Harshal yadav	15		
8	Himanshi Jain	17		
9	Kirti Das	16		
10	Kartik Gokhle	13		
11	Manisha Sable	14		
12	Mohan Mishra	15		
13	Nitesh Bhatt 1			
14	Palash joshi	16		
15	Ria kumar	17		
16	Rohit bhati	14		

Sakshi Maheshwari	16
Sejal chauragade	15
Tara Thakur	18
Ravina Choudhary	13
	Sejal chauragade Tara Thakur

SCORE SHEET OF PRE-TEST & POST-TEST

Sr.	Name of Student	Sco	Scor	D ₁ =X ₁ -M ₁	$(D_1)^2$	D ₂ =X ₂ -	$(D_2)^2$
No		re	e			M ₁	
•		(X ₁)	(X ₂)				
1	Sania sheikh	11	15	1.65	2.72	0.45	0.02
2	Tanisha kamlesh	9	14	0.25	0.06	1.45	2.10
3	Prajay Likhare	8	16	1.25	1.56	0.55	0.30
4	Pragya Shende	10	18	0.75	0.56	2.55	6.50
5	Dimple Sharma	11	17	1.65	2.72	1.55	2.40
6	Daksh Kobragade	5	12	4.25	18.06	3.45	11.90
7	Harshal Yadav	6	15	3.25	10.56	0.45	0.20
8	Himanshi Jain	8	17	1.25	1.56	1.55	2.40
9	Kirti Das	9	16	0.25	0.06	0.55	0.30
10	Kartik Gokhle	10	13	0.75	0.56	2.45	6.00
11	Manisha Sable	9	14	0.25	0.06	1.45	2.10
12	Mohan Mishra	8	15	1.25	1.56	0.45	0.20
13	Nitesh Bhatt	12	18	2.75	7.56	2.55	6.50
14	Palash Joshi	13	16	3.75	14.06	0.55	0.30
15	Ria Kumar	9	17	0.25	0.06	1.55	2.40

16	Rohit Bhati	13	14	3.75	14.06	1.45	2.10
17	Sakshi Maheshwari	10	16	0.75	0.56	0.55	0.30
18	Sejal Chauragade	11	15	1.65	2.72	0.45	0.20
19	Tara Thakur	6	18	3.25	10.56	2.55	6.50
20	Ravina Choudhary	9	13	0.25	0.06	2.45	6.00
N=		Σx ₁	∑x ₂₌ 3		$\sum (D_1)^2 =$	Fé	$\sum (D_2)^2 =$
20		=18	09		89.86	ā	58.9
		7					*

CALCULATION:

 $\textbf{Mean} (M_1) = \sum X_1/N$

= 187/20

= 9.35

 $Mean (M_2) = \sum X_2/N$

= 309/20

= 15.45

Standard deviation =
$$\sqrt{\sum D_1^2 + \sum D_2^2}/(N_1 + N_2) - 2$$

$$=$$
 $\sqrt{89.86+58.9/(20+20)-2}$

$$=$$
 $\sqrt{148.58/40-2}$

$$=$$
 $\sqrt{148.58/38}$

$$= \sqrt{3.91}$$

Standard error = S.D ×
$$\sqrt{N_1+N_2/N_1}$$
×N₂

$$=$$
 1.977 $\times \sqrt{20+20/20} \times 20$

$$= 1.977 \times \sqrt{0.1}$$

$$= 1.977 \times 0.316$$

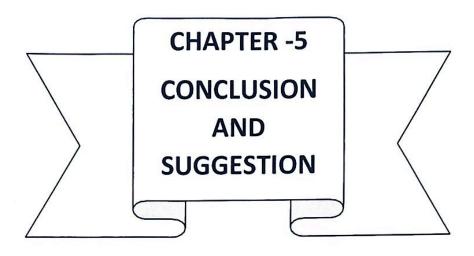
$$t = D/S.D$$

$$t = 10.08$$

4.4. INTERPRETATION:-

The calculate value of T is greater than the table value at 0.05 level and 0.01 evel it means there is significance difference between calculate value 10.08 and able value at 0.05 (2.02) and value at 0.01 (2.71)

to the given hypothesis is rejected it means there is positive effect at remedial hat is used by researcher applied by researcher



Chapter-5

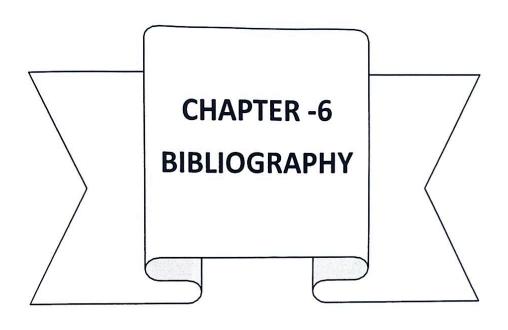
CONCLUSION AND SUGGESTIONS

5.1 Conclusion :-

- 1) Generally students do not have proper knowledge about the practical.
- 2) Giving knowledge prior to the practical helps student performance.
- 3) Student follows procedure after guidance from teacher.
- 4) Observation is very important for doing practical in correct way.
- 5) Student performance increased after the post test.

5.2 Suggestions:-

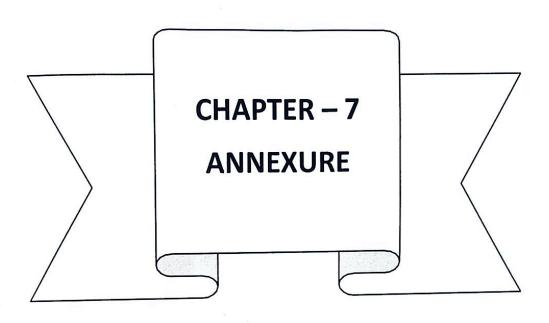
- 1) School must provide good infrastructure for students.
- 2) Biology laboratory must be full equipped for practical.
- 3) Microscope must be in good condition.
- 4) School must give importance to practical knowledge.



Chapter-6

Bibliography

Sr.No.	Name of	Year	Name of the Books	Name of the Publication
	the Author		я	
1	Buch M.B.	2020	Research Methodology	Prentice Hall of India (Pvt)
			Vol.I,II,III,IV and V	Limited, New Delhi.
2	Best Jhon	1994	Methods of Research	Oxford Publication
3	Dandekar	1974	Education in School	Sahitya Bhawan, New
	W.N.			Delhi.
4	Karandikar	2006	Shaikshanik Sanshodhan	Prgati Prakashan , Pune
5	Sanjay	2007	Krushi Sanshodhan V	Vidyabharti Prakashan
	-		Navupakram	
6	Usha Rao	1994	Research in Educational	Distance Ramchandra and
			Methodology	Co,. Pune



ANNEXURE-1

Sr. No.	Name of Student	
1	Sania Sheikh	
2	Tanisha kamlesh	
3	Prajay Likhare	
4	Pragya shende	
5	Dimple sharma	
6	Daksh kobragade	
7	Harshal yadav	
8	Himanshi Jain	
9	Kriti Das	
10	Kartik Gokhle	
11	Manisha Sable	
12	Mohan Mishra	
13	Nitesh Bhatt	
14	Palash Joshi	
15	Ria Kumar	
16	Rohit Bhati	
17	Sakshi maheshwari	
18	Sejal chauragade	
19	Tara Thakur	
20	Ravina Choudhary	

ANNEXURE-2

PRE-TEST FOR STUDENT

Personal Information

Name: Age:
Father's/Guardian:
Occupation of Guardian : Class :
Area:
Gender:
Name of the School:
INSTRUCTION
1) Fill the required information in the blanks given below:
 Enter your response or every question by using (→) tick mark sign in
appropriate box.
3) Describe the correct answer for questions asked.
QUESTIONNAIRE
Q. 1) Write the answer of the following question? (10)
(i) Do you have interest in Biology subject?
No No
Yes
(ii) Do you have intrest in Practical?
Yes

	(iii) Have you seen Laboratory of your school?				
		Yes		No	
	(iv)	Do you hav	ve experience to	Handle instrument?	
		Yes		No	
	(v)	Do you kno	ow what is comp	onents of food?	
		Yes		No	
Q. 2)	Name	the compon	ents of food and s	ource of food? (2)	
Q.3)	Ansv	wer the que	estion in one se	ntences :-	(6)
1)	What is carbohydrate ?				
Ans.	:				
2)	Wha	t is Starch?			
Ans.	:				
3)	What is added to test tube in order to find presence of starch?				
Ans.	:				
_					

4)	After adding lodine to test tube which colour is formed?
Ans.	
_	
5)	What does Blue- Black colour indicate ?
Ans.	

ANNEXURE-2

POST-TEST FOR STUDENT

Personal Information

ame:	Age:
_{ather's} /Guardian:	*
ccupation of Guardian :	Class :
ender:	Area:
ame of the School:	
INSTRUC	CTION
) Fill the required information in the	blanks given below:
Enter your response or every qu	estion by using (→) tick mark sign in
appropriate box.	
B) Describe the correct answer for q	uestions asked.
QUESTIO	NNAIRE
Q. 1) Write the answer of the following	ng question? (10)
(i) Do you have interest in Bio	logy subject?
Yes	No
(ii) Do you have interest in Pra	ctical?
Yes	No

	(iii) Have you seen Laboratory of your school?					
		Yes		No		
	(iv) Do you have experience to Handle instrument?					
		Yes		No		
	(v)	Do you kno	ow what is	s components of food?		
		Yes		No		
Q. 2)	Name	the compone	ents of foo	od and source of food? (2)		
Q.3)	Ans	wer the que	stion in o	one sentences :-	(6)	
1)	Wha	t is carbohy	drate ?			
Ans.	:				_	
2)	Wha	it is Starch?				
Ans.					_	
				tin to a set of otoroh?		
3)	What is added to test tube in order to find presence of starch?					
Ans	:				-	





Fine

Awa

Name: - Propuri S. Norekon

BEd- L year



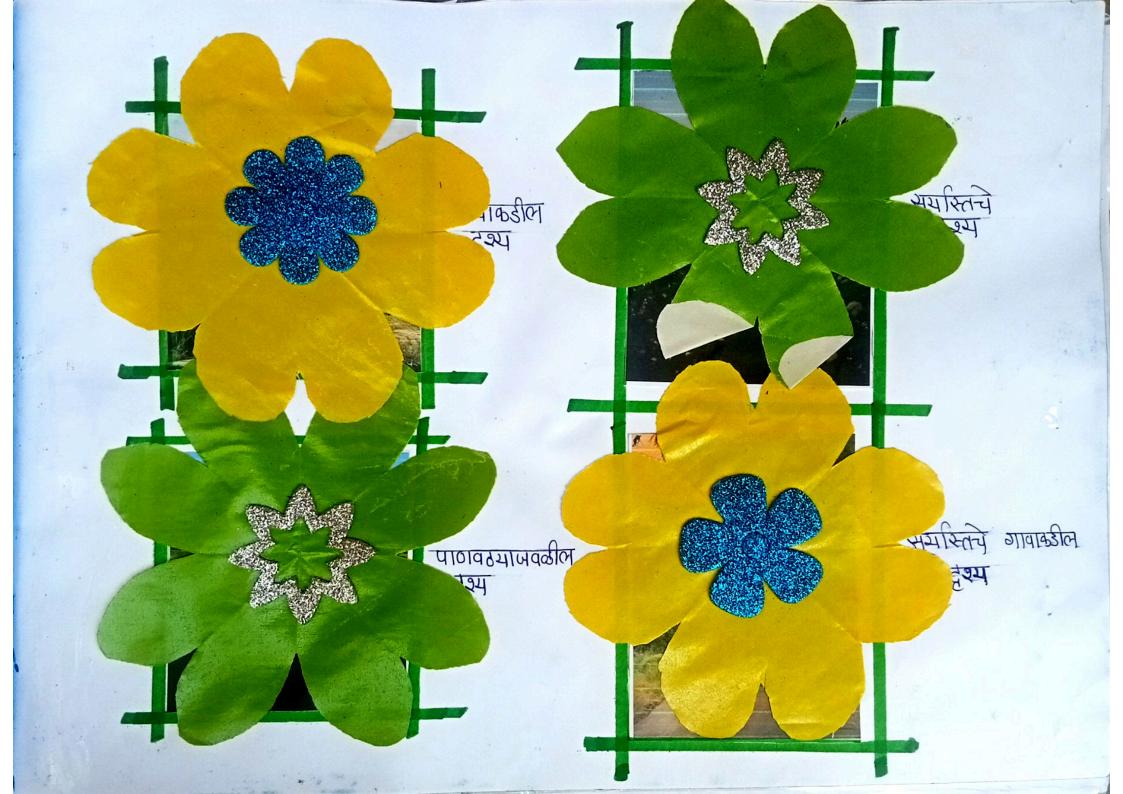














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