A Comparative Study On Water Purification At Home.

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SCIENCE FAIR PROJECT REPORT

LEVEL	JUNIOR
CATEGORY	Environmental science

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GRADE : **IX**

SCHOOL : **IMAM SHAFI (RAH) MAT.HR.SEC SCHOOL ADIRAMPATTINAM.**

PROJECT ID : **NSF-SCH -2025 – 381**

PROJECT TITLE : A comparative study on water purification at home.

CITY AND STATE : **Adirampattinam, Tamilnadu**

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I also take this opportunity to convey my heartfelt appreciation for their invaluable guidance, continuous support and constructive suggestions which helped me to complete this project successfully.

ABSTRACT

Water is something we use everyday but not all water is clean. Some waters has dirt, germs,or bad smell.

In this project I tested four types of water at home.

1. Purified water
2. Boiled water
3. Frozen water
4. Dirty water

INTRODUCTION

Water is essential for life, but but it often contains dirty and impurities. To make it safe for drinking, purification is necessary. In this project, I used simple home methods like boiling, filtering and freezing to clean dirty water and observe with method works best. This helps us to understand how clean water can be made easily at home.

STATEMENT OF THE PROBLEM

When My teacher was teaching about important of future what usage for future generation I thought which method can we use to purify dirt water at home.

Hypothesis:

Before doing the project I thought

* Purified and the boiled water would be safe to drink.
* Frozen water may look clean but might still have germs.
* Dirty water would be the most unsafe.

HYPOTHESIS

I believe that boiling, filtering and freezing will remove dirt and impurities from the water, but boiling will be purify the water most effectively because heat can kill gems and bacteria.

Design of the Study

Dependent Variables:

Clean

Purity

Independent Variables:

Filtering

Boiling

Freezing

Controlled variable:

Colour

Bad Smell

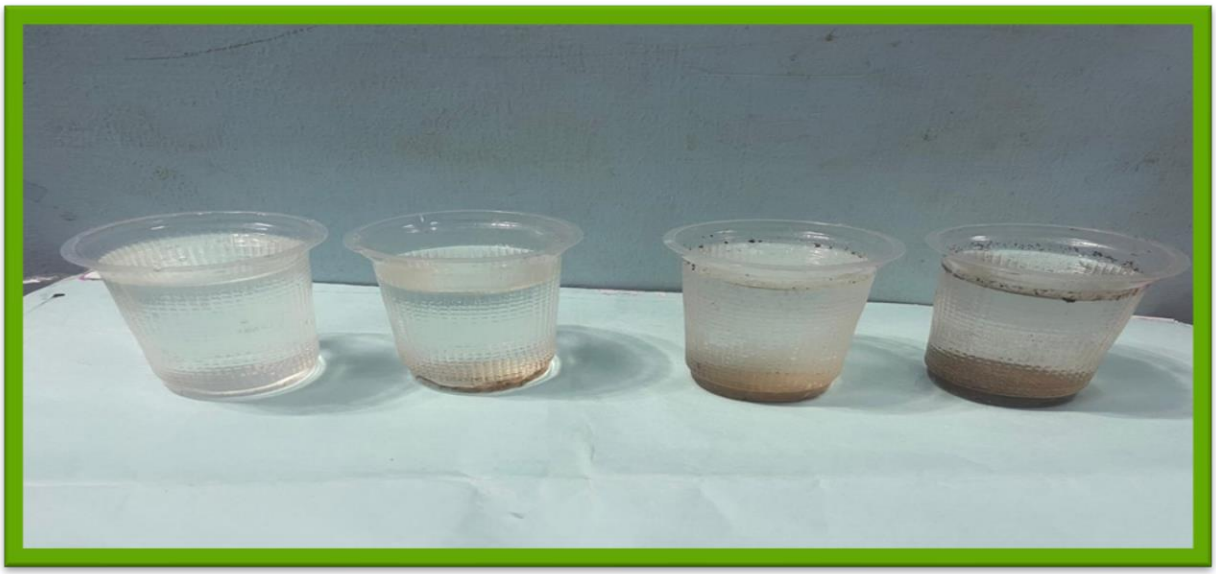
pH level

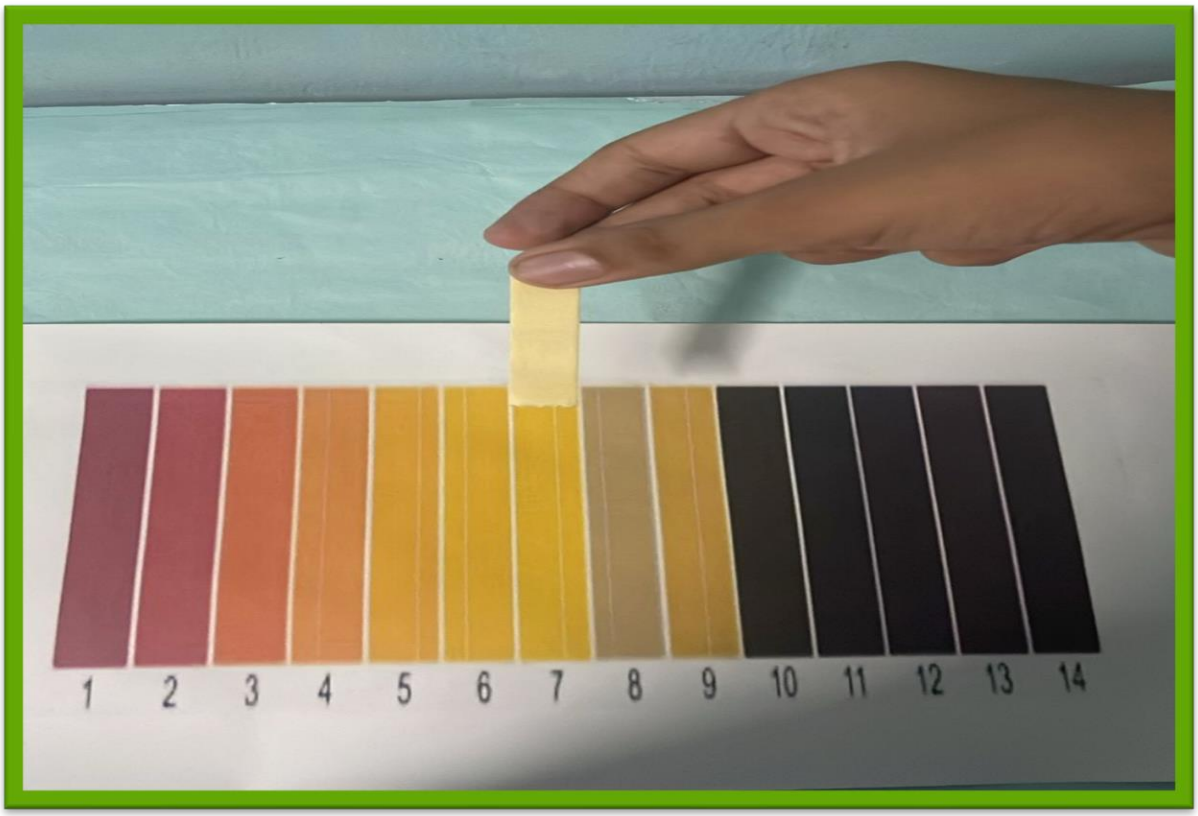
MATERIALS:

* Purified water from a water filter.
* Water that I boiled
* Water that I Froze and then melted
* Dirty water
* Four transparent glasses
* Labels for each glass
* pH paper

PROCEDURE

I poured each type of water from a water filter into the separate glasses.
* Smell and the particles in each one .
* I wrote down what I saw
* I thought about which one I would drink or not.
* I used pH test stripes by dipping one strip into each type of water for a few seconds then compared the colour to the pH chart.
water is nutral and dirty water is slightly alkaline.

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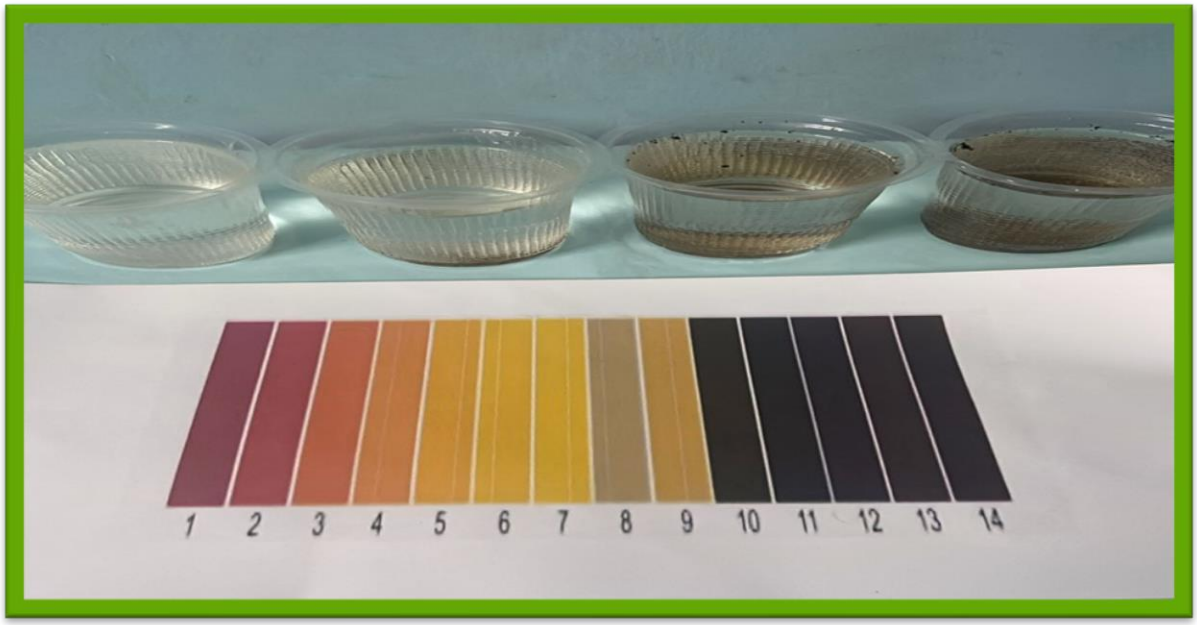
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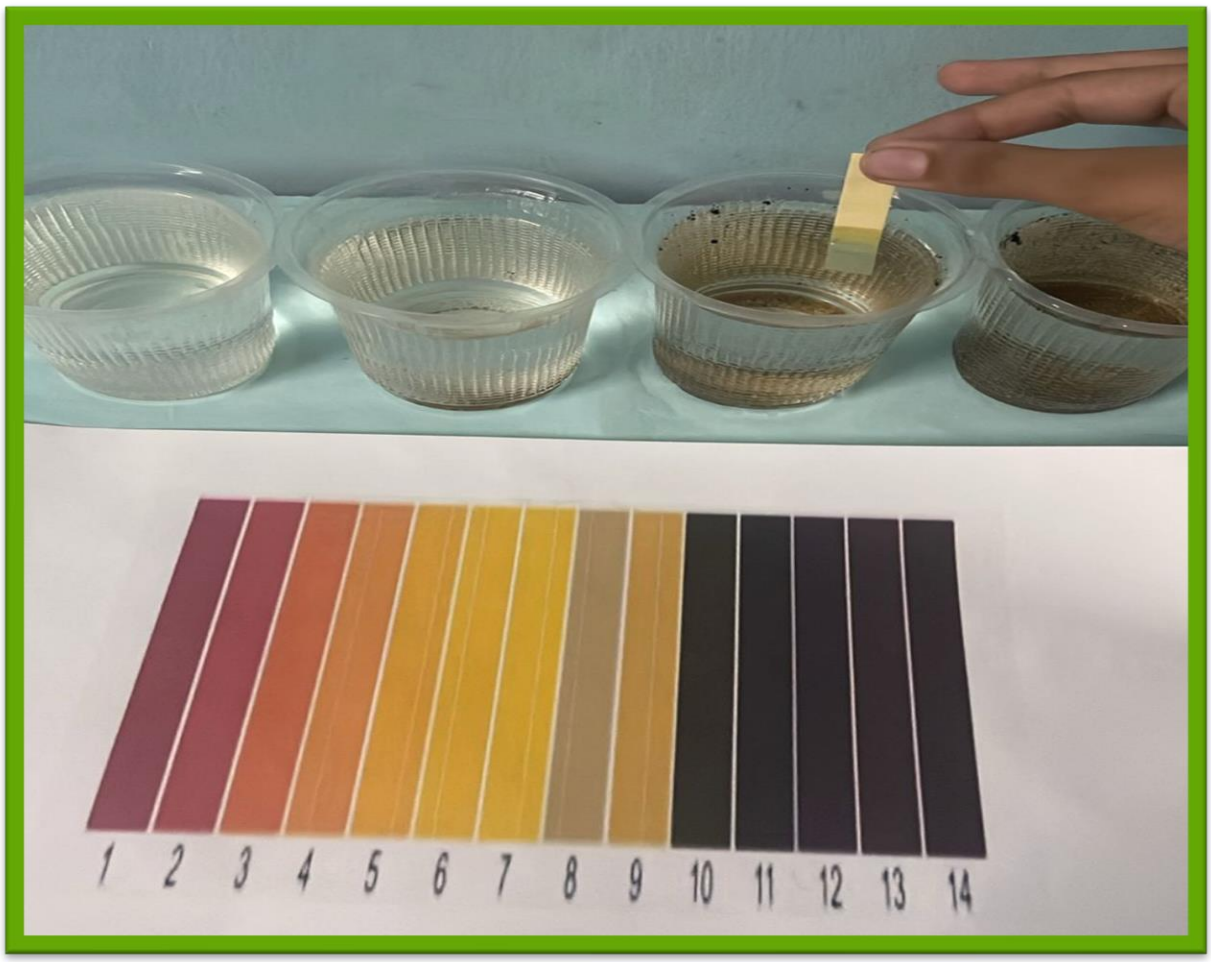
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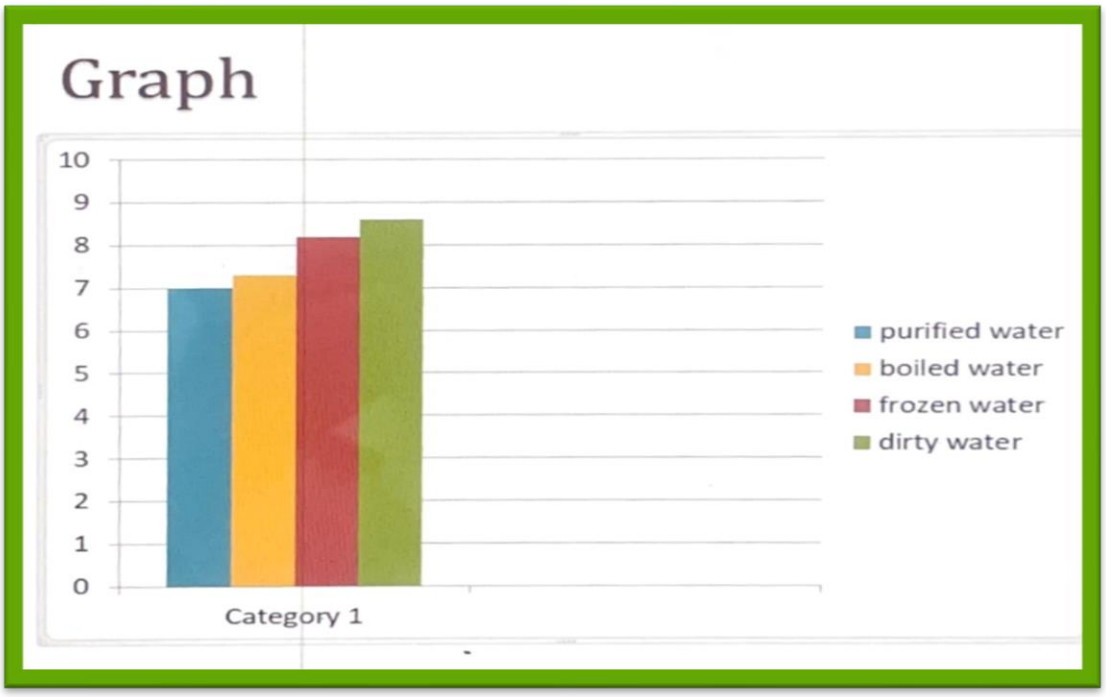
Tabulation

S.no	Water	Ph level	Appearance
1.	Purified water	7	clear
2.	Boiled water	7.5	clear
3.	Frozen water	8.1	clear
4.	Dirty water	8.5	brown

Graph


Graph
10
9
8
7
6
5
4
3
2
1
0
Category 1
purified water
boiled water
frozen water
dirty water

Result

- Purified water was best- clear and clean
- Wild water was also safe- no smell or
- particles.
- Frozen water looked okay but it is not safe
- to drink.
- Dirty water was clearly unsafe to drink –
- brown colour and visible dirt.
- The pH test showed Purified water was pH -7,Boiled 7.2 , Frozen 7.5 ,Dirty 8- showing clean water is neutral and dirty water slightly alkaline

Conclusion

- Boiled and filtered water are simple but effective ways purify water at home.
- Freezing does not remove germs from water.
- Ever drink water that looks are smells bad.
- Clean water is very important for health.
- The test shows clean water is neutral, while dirty water is slightly alkaline due to impurities.

REAL - LIFE APPLICATION

Clean water is important for drinking, cooking and staying healthy. Simple method like boiling , filtering and freezing can be used at home when clean water is not available. The technics are useful during emergencies, travel or the places where water is contaminated, helping people make safer water to use.