TESTING ELECTROLYTES

TOPICS WE CHOSE

WRITE DOWN THE TOPIC YOU CHOSE:

TESTING ELECTROLYTES IN SPORTS DRINKS VS ELECTROLYTES IN WATER AND ENERGY DRINKS

WHAT MADE YOU WANT TO PICK THIS TOPIC?

WE FOUND IT INTERESTING BECAUSE WE WANTED TO KNOW HOW MUCH ELECTROLYTES WERE IN THE SPORTS DRINKS AND WATER AND ENERGY DRINKS THAT WE DRINK IN OUR DAILY LIFE.

DO YOU FIND THESE TOPICS INTERESTING? WHY?

YES BECAUSE WE WANT TO SEE HOW MUCH ELECTROLYTES ARE IN WATER, ENERGY DRINKS AND SPORTS DRINKS TO SEE HOW MUCH OF A DIFFERENCE THERE IS.

SCIENCE FAIR QUESTIONS

WHICH TOPIC DID YOU CHOOSE?

TESTING ELECTROLYTES IN SPORTS DRINKS COMPARED TO WATER AND ENERGY DRINKS.

WHAT QUESTION(S) ARE YOU TESTING?

WHICH ONE HAS MORE ELECTROLYTES WATER, SPORTS DRINKS OR ENERGY DRINKS.

HOW ARE YOU GOING TO TEST YOUR HYPOTHESIS ?

USING THE MATERIAL TO TEST THE SPORTS DRINKS, WATER AND ENERGY DRINKS MULTIPLE TIMES, MAKING SURE THE WRITE THE DATA.

BACKGROUND RESEARCH

FIND INFORMATION AND RECORD THE SOURCES YOU USE THAT HELP YOU MAKE AN EDUCATED GUESS TO YOUR TESTABLE QUESTION. WRITE A 1 PARAGRAPH SUMMARY FOR EACH OF YOUR SOURCES.

THE ELECTROLYTE CHALLENGE TALKS ABOUT THE ADVANTAGES BETWEEN WATER AND SPORTS DRINK TO AVOID DEHYDRATION. WATER DOES HAVE ELECTROLYTES AND IS MEANT TO HYDRATE YOU, BUT THE AMOUNT CAN VARY DUE TO THE AMOUNT OF PURIFICATION LEVEL. WHILE ONE OF THE MAIN POINTS OF SPORTS DRINK IS TO HAVE ELECTROLYTES FOR YOUR BODY. ELECTROLYTES HELP YOUR BODY REGULATE CRUCIAL BODILY FUNCTIONS LIKE HYDRATION, NERVE AND MUSCLE CONTRACTIONS, AND BLOOD PRESSURE.

THE BIG IDEA IS TWO KIDS TESTING ELECTROLYTES IN A VARIETY OF DRINKS THAT ARE CONSUMED EVERYDAY. THEY TALK ABOUT HOW THEY FEEL IT'S INTERESTING BECAUSE WANT TO KNOW WHICH DRINK TO USE WHEN EXERCISING.

BACKGROUND RESEARCH

SOURCE 1

TITLE: WHICH DRINK HAS THE MOST ELECTROLYTES?

SUMMARY:

WHAT'S THE BIG IDEA ABOUT THE ARTICLE?
THE BIG IDEA IS TWO KIDS TESTING ELECTROLYTES IN A VARIETY OF DRINKS THAT ARE CONSUMED EVERYDAY. THEY TALK ABOUT HOW THEY FEEL IT'S INTERESTING BECAUSE WANT TO KNOW WHICH DRINK TO USE WHEN EXERCISING.

IN COMPLETE SENTENCES, DESCRIBE A FEW DETAILS (WHO, WHAT, WHERE, WHEN, WHY, AND HOW)

IT IS ABOUT 2 KIDS. THEY ARE TESTING ELECTROLYTES IN DRINKS. THEY ARE AT SCHOOL. THEY USED CABLES AND A MULTIMETER. THEY WANTED TO TEST WHICH DRINK THEY SHOULD USE WHEN EXERCISING.

WHAT IS YOUR HYPOTHESIS?

WE THINK THAT SPORT DRINKS WILL HAVE MORE ELECTROLYTES THAN WATER AND ENERGY DRINKS WHEN WE TEST THEM WITH A MULTIMETER.

VARIABLES

WHAT ARE THE VARIABLES OF YOUR EXPERIMENT?

INDEPENDENT VARIABLE (IV)NATURE OF THE LIQUID (SPORTS DRINKS, ORANGE JUICE, AND POTENTIALLY A CONTROL LIKE WATER)

DEPENDENT VARIABLE (DV)ELECTROLYTE CONTENT (TYPICALLY MEASURED AS ELECTRICAL CONDUCTIVITY OR CURRENT)

CONTROL VARIABLE? AMOUNT OF ELECTROLYTE AND AMOUNT OF DRINK. ROOM TEMPERATURE, HUMIDITY, NATURE OF CONTAINER, MEASUREMENTS WITH EQUIPMENT, AND TIME.

MATERIALS

MAKE A LIST OF ALL THE MATERIALS YOU USED FOR THIS EXPERIMENT

- MULTIMETER
- SPORTS DRINKS
- BATTERY
- CONDUCTANCE SENSOR
- ALLIGATOR CLIPS

PROCEDURE

WHAT ARE THE STEPS YOU FOLLOWED DURING THIS EXPERIMENT? WRITE ALL OF THEM DOWN. MAKE SURE THEY ARE EXACTLY WHAT YOU FOLLOWED WHILE DOING THE EXPERIMENT.

FIRST, WE MARKED ALL THE CUPS TO KNOW HOW MUCH LIQUID TO POUR.

THEN WE POURED THE SPORTS DRINKS, WATER, AND ENERGY DRINKS INTO CUPS UP TO THE LINE.

THEN, WE PLUGGED THE MULTIMETER INTO A 9V BATTERY.

AFTER WE DIPPED THE PROBES INTO THE DIFFERENT LIQUIDS. WE TESTED MULTIPLE TIMES TO ACHIEVE THE BEST RESULTS. (BY SEEING THE CONDUCTANCE SENSOR)

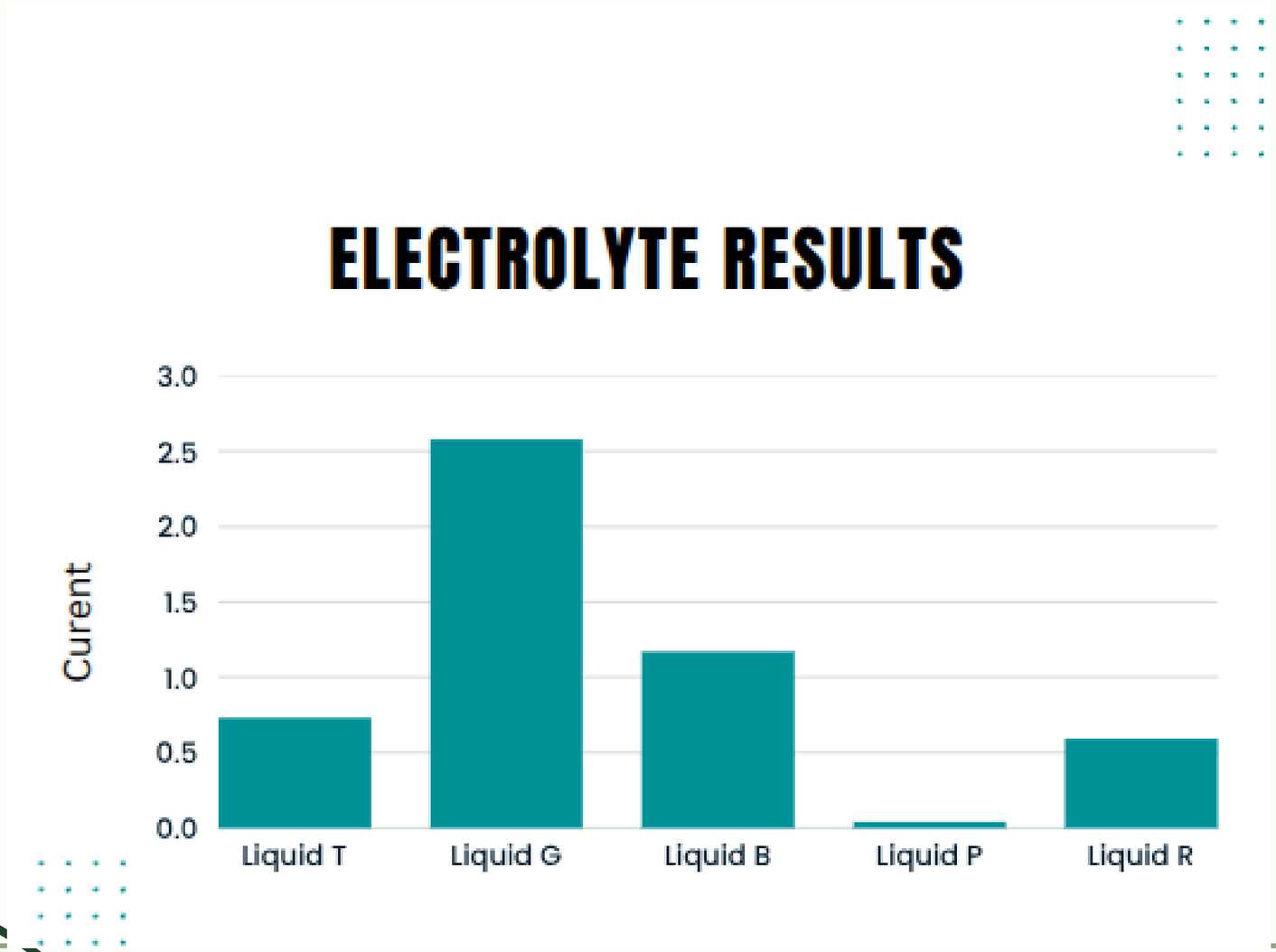
WITH THE RESULTS, WE WILL DECIDE IF OUR HYPOTHESIS IS CORRECT. FINALLY, WE CAN MAKE A CHART SHOWING THE RESULTS.

DATA

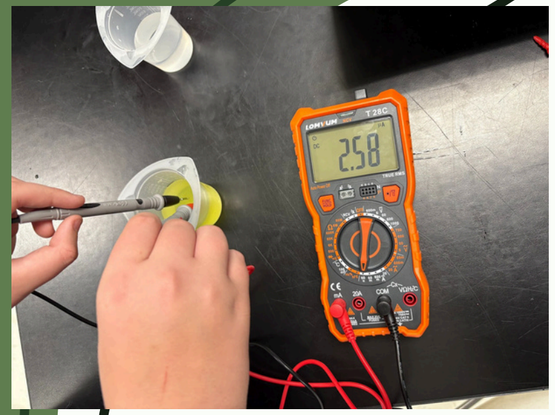
S.No	Name of Liquid	Current Reading using multimeter
1	Liquid T	0.73 and 0.23
2	Liquid G	2.58 micro Amps
3	Liquid B	1.17 microAmps
4	Liquid P	0.04 microAmps
5	Liquid R	0.59 microAmps

Sheet1

RESULTS


ELECTROLYTE RESULTS
Curent
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Liquid T
Liquid G
Liquid B
Liquid P
Liquid R

PICTURES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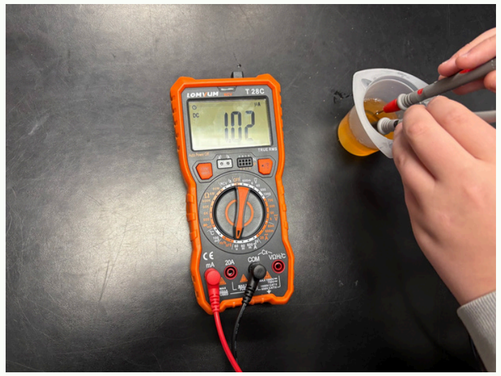
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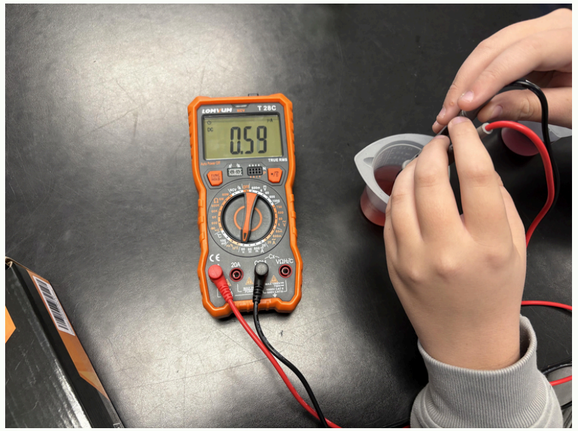
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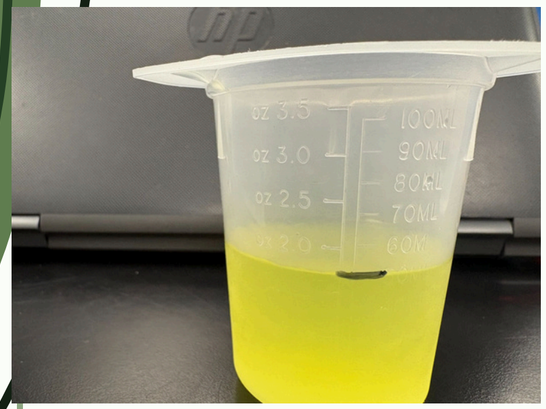
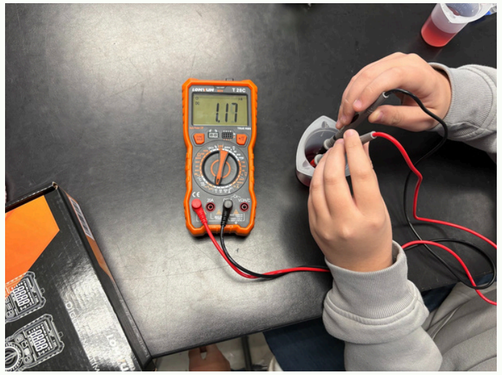

100ML
90ML
80ML
70ML
60M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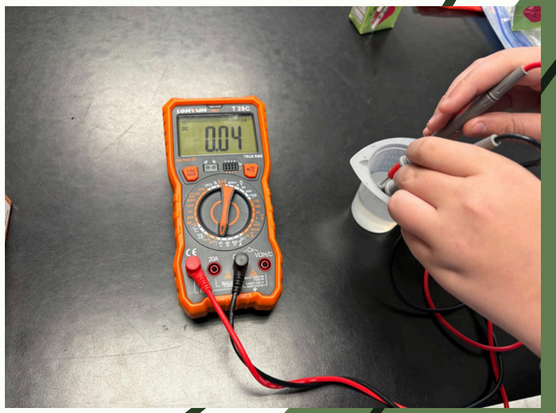
100ML
90ML
80ML
70ML
60M
40ML
30ML


0.04

CONCLUSION

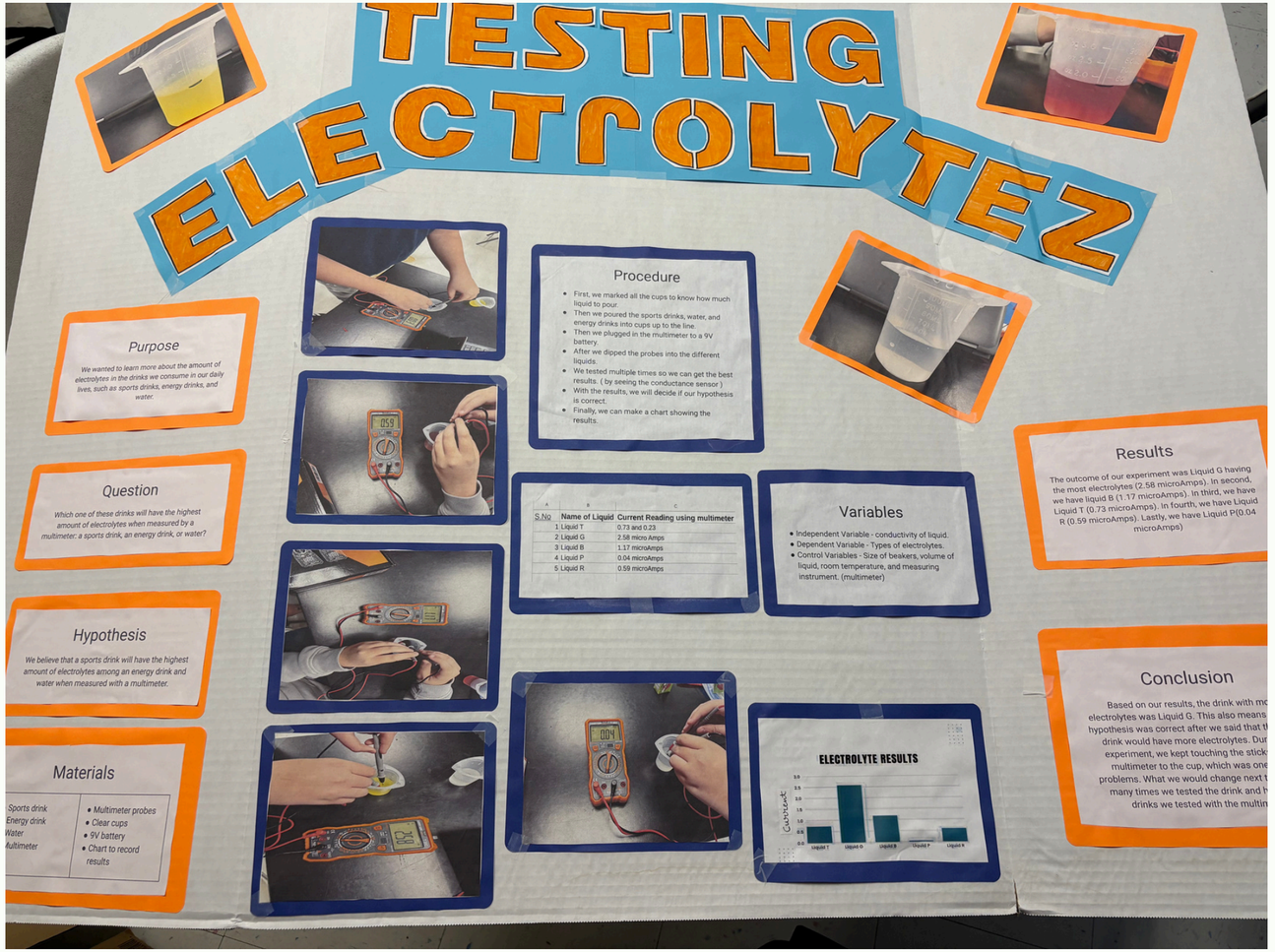
THE OUTCOME OF OUR EXPERIMENT WAS LIQUID G HAVING THE MOST ELECTROLYTES (2.58 MICROAMPS). IN SECOND, WE HAVE LIQUID B (1.17 MICROAMPS). IN THIRD, WE HAVE LIQUID T (0.73 MICROAMPS). IN FOURTH, WE HAVE LIQUID R (0.59 MICROAMPS). LASTLY, WE HAVE LIQUID P(0.04 MICROAMPS)

OUT HYPOTHESIS ENDED UP BEING CORRECT WITH A SPORTS DRINKS HAVE THE HIGHEST AMOUNT OF ELECTROLYTES.

ONE OF THE PROBLEMS WE HAD ONE THE RODS TOUCHING THE CUP.

WHAT WE WOULD DO NEXT TIME IS TEST MORE DRINKS AND TEST THEM MULTIPLE DIFFERENT TIMES.

FUTURE SCOPE

IN OUR PROJECT, WE CAN ADD MORE DRINKS. WE CAN ALSO IMPROVE BY MAKING OUR PHOTOS CLEARER. WE CAN ALSO IMPROVE THE DESIGN ON OUR POSTERBOARD.

POSTER BOARD