



ENTANGLED TIMES

THE
ELECTRICITY
ISSUE

TABLE OF CONTENTS

- 1. WHAT IS ELECTRICITY?**
- 2. TYPES OF ELECTRICITY**
- 3. HOW ELECTRICITY MOVES**
- 4. MATERIALS**
- 5. HOW DO WE USE IT?**
- 6. EXPERIMENTS**
- 7. QUIZ**





WHAT IS ELECTRICITY?

ELECTRICITY IS A FORM OF ENERGY THAT POWERS OUR HOMES, SCHOOLS, AND GADGETS. EVERYTHING AROUND US IS MADE OF TINY BUILDING BLOCKS CALLED ATOMS, AND INSIDE ATOMS ARE ELECTRONS THAT CARRY ELECTRICITY. WHEN ELECTRONS MOVE, THEY CREATE ELECTRICITY!

ELECTRICITY CAN COME FROM DIFFERENT SOURCES. POWER PLANTS MAKE ELECTRICITY AND SEND IT THROUGH POWER LINES TO REACH OUR HOMES, SCHOOLS, AND CITIES. SOME ELECTRICITY COMES FROM THE SUN, WIND, AND WATER.

TYPES OF ELECTRICITY

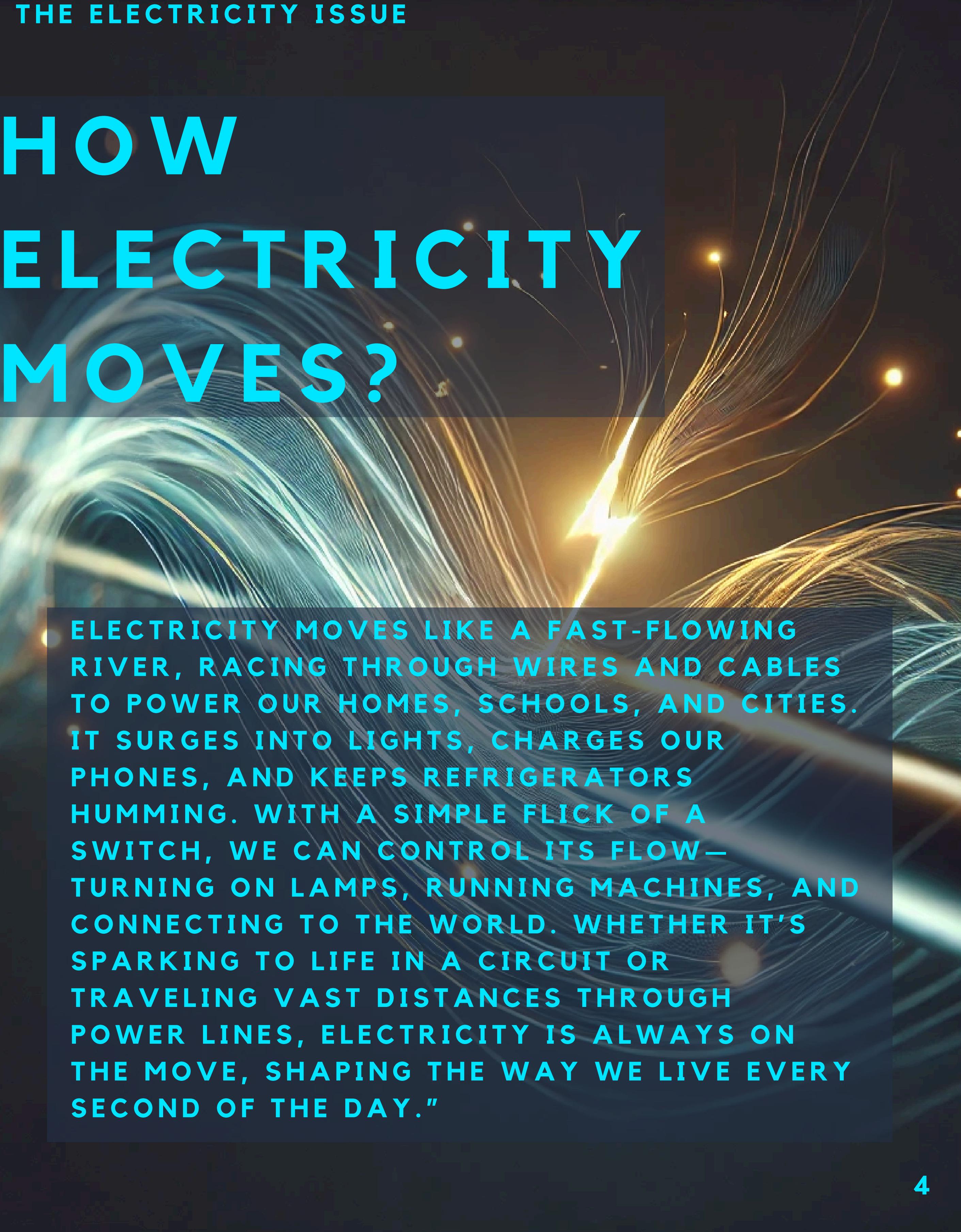
STATIC ELECTRICITY

THIS HAPPENS WHEN ELECTRIC CHARGES BUILD UP ON AN OBJECT. HAVE YOU EVER RUBBED A BALLOON ON YOUR HAIR AND MADE IT STAND UP? THAT'S STATIC ELECTRICITY!

CURRENT ELECTRICITY

THIS IS THE ELECTRICITY THAT FLOWS THROUGH WIRES TO POWER DEVICES. IT MOVES IN A CONTINUOUS PATH TO KEEP THINGS LIKE FANS, TVs, AND LIGHTS WORKING.

HOW ELECTRICITY MOVES?



ELECTRICITY MOVES LIKE A FAST-FLOWING RIVER, RACING THROUGH WIRES AND CABLES TO POWER OUR HOMES, SCHOOLS, AND CITIES. IT SURGES INTO LIGHTS, CHARGES OUR PHONES, AND KEEPS REFRIGERATORS HUMMING. WITH A SIMPLE FLICK OF A SWITCH, WE CAN CONTROL ITS FLOW—TURNING ON LAMPS, RUNNING MACHINES, AND CONNECTING TO THE WORLD. WHETHER IT'S SPARKING TO LIFE IN A CIRCUIT OR TRAVELING VAST DISTANCES THROUGH POWER LINES, ELECTRICITY IS ALWAYS ON THE MOVE, SHAPING THE WAY WE LIVE EVERY SECOND OF THE DAY."

MATERIALS

DANGEROUS MATERIALS:

METALS LIKE COPPER AND ALUMINUM ALLOW ELECTRICITY TO FLOW. THAT'S WHY WE SHOULD NEVER TOUCH ELECTRICAL OUTLETS OR WIRES WITH METAL OBJECTS!

SAFE MATERIALS:

PLASTIC, RUBBER, AND WOOD DO NOT LET ELECTRICITY PASS THROUGH THEM. THAT'S WHY ELECTRICAL WIRES ARE COVERED WITH PLASTIC TO KEEP US SAFE!

FUN FACT! DID YOU KNOW THAT BIRDS CAN SIT ON POWER LINES WITHOUT GETTING SHOCKED? THAT'S BECAUSE THEY ARE ONLY TOUCHING ONE WIRE AT A TIME. IF THEY TOUCHED TWO WIRES OR THE GROUND, ELECTRICITY WOULD FLOW THROUGH THEM, AND THEY WOULD GET AN ELECTRIC SHOCK!

HOW DO WE USE IT?

- **LIGHTING:** ELECTRICITY POWERS LIGHT BULBS AND LEDs, ALLOWING US TO SEE AT NIGHT AND IN DARK PLACES.
- **APPLIANCES:** REFRIGERATORS, WASHING MACHINES, AND OVENS USE ELECTRICITY.
- **COMMUNICATION:** PHONES, COMPUTERS, AND THE INTERNET ALL RELY ON ELECTRICITY TO SEND MESSAGES, MAKE CALLS, AND BROWSE INFORMATION.
- **INDUSTRY & FACTORIES:** FACTORIES USE ELECTRICITY TO RUN MACHINES, PRODUCE GOODS, AND MANUFACTURE EVERYTHING FROM CLOTHES TO CARS.

EXPERIMENTS

STATIC ELECTRICITY TRICK: RUB A BALLOON ON YOUR HAIR AND SEE HOW IT STICKS TO A WALL!

JUMPING PAPER EXPERIMENT: TEAR SMALL PIECES OF PAPER AND BRING A RUBBED BALLOON CLOSE. WATCH HOW THE PAPER JUMPS!

MAKE YOUR OWN ELECTROSCOPE: TAKE A STRAW AND RUB IT WITH A WOOL CLOTH TO CREATE STATIC ELECTRICITY. HOLD IT NEAR SMALL BITS OF FOIL OR PAPER, AND WATCH THEM MOVE AS THEY REACT TO THE ELECTRIC CHARGE!

QUIZ YOURSELF!

FILL IN THE BLANKS WITH THE CORRECT WORDS:

ELECTRICITY IS MADE BY MOVING _____.

_____ ELECTRICITY BUILDS UP ON OBJECTS AND CAN MAKE YOUR HAIR STAND UP!

WE USE A _____ TO TURN ELECTRICITY ON AND OFF IN OUR HOMES.

WE USE _____ TO CHARGE OUR PHONES AND TABLETS.

WIRES ARE COVERED WITH _____ TO KEEP US SAFE.

MATCH THE PAIRS:

STATIC ELECTRICITY → (A) POWERS A CIRCUIT

BATTERY → (B) ELECTRICITY THAT STAYS IN ONE PLACE

POWER LINE → (C) CARRIES ELECTRICITY TO HOMES

PLASTIC → (D) A SAFE MATERIAL THAT DOES NOT LET ELECTRICITY PASS

TRUE OR FALSE?

DECIDE IF THE STATEMENTS BELOW ARE TRUE OR FALSE:

ELECTRICITY MOVES SLOWLY THROUGH POWER LINES. (TRUE / FALSE)

STATIC ELECTRICITY IS THE TYPE OF ELECTRICITY THAT FLOWS THROUGH WIRES. (TRUE / FALSE)

PLASTIC AND RUBBER ARE SAFE MATERIALS THAT DO NOT LET ELECTRICITY PASS THROUGH. (TRUE / FALSE)

WE CAN SEE ELECTRICITY MOVING THROUGH WIRES WITH OUR EYES. (TRUE / FALSE)

THE SUN CAN BE USED TO CREATE ELECTRICITY. (TRUE / FALSE)

ABOUT THE AUTHORS

ISHAAN KAPOOR:

MY NAME IS ISHAAN KAPOOR AND I'M AN IBDP GRADE 11 STUDENT WITH A PASSION FOR PHYSICS. I SPECIFICALLY ENJOY THE STUDY OF ELECTRICITY AND WAVES. IN MY FREE TIME I ENJOY WATCHING FORMULA 1 AND CONDUCTING EXPERIMENTS

RISHA JAIN:

HI, MY NAME IS RISHA AND I'M AN IBDP GRADE 11 STUDENT WITH A PASSION FOR PHYSICS AND ITS APPLICATIONS. I ENJOY READING, WRITING, FORMULA-1 AND PLAYING WITH LEGOS IN MY FREE TIME!