

## **BEST PRACTICES**

- ❖ The Department of Physics conducted various competitions to improve the sportiveness of students like quiz competitions, Seminars, Group discussions.
- ❖ Some of the Departmental activities are conducted by the students to improve their communication skills like C.V.Raman's birthday celebrations, Science day celebrations etc.
- ❖ Preparations of Charts by the students which are relevant to the concerned subject.
- ❖ Usage of logarithms instead of calculators.
- ❖ Clean and Green Programme is conducted for every 15 Days to improve their social responsibility.

## • **Chart Preparation**

Students learn to create graphs for lab experiments using tools like Excel or Python, plotting variables such as voltage vs. current. This practice emphasizes data accuracy, labelling axes, and error analysis to visualize physics concepts clearly.

## • **Electricity Bill Preparation**

Departments train students on monitoring lab power usage through meter readings and bill audits, identifying savings like LED lighting or equipment timers. Faculty guide calculations of kWh consumption to reduce costs and teach energy audits.

## **Daily academic scheduling**

The department provides a daily academic schedule to the students which includes classes, seminars, assignments and other academic activities. This helps students to plan their studies and participate actively in all activities

## **Scientific awareness of traditions:**

In addition to regular activities the department also encourages students to explore scientific principles behind traditional practices

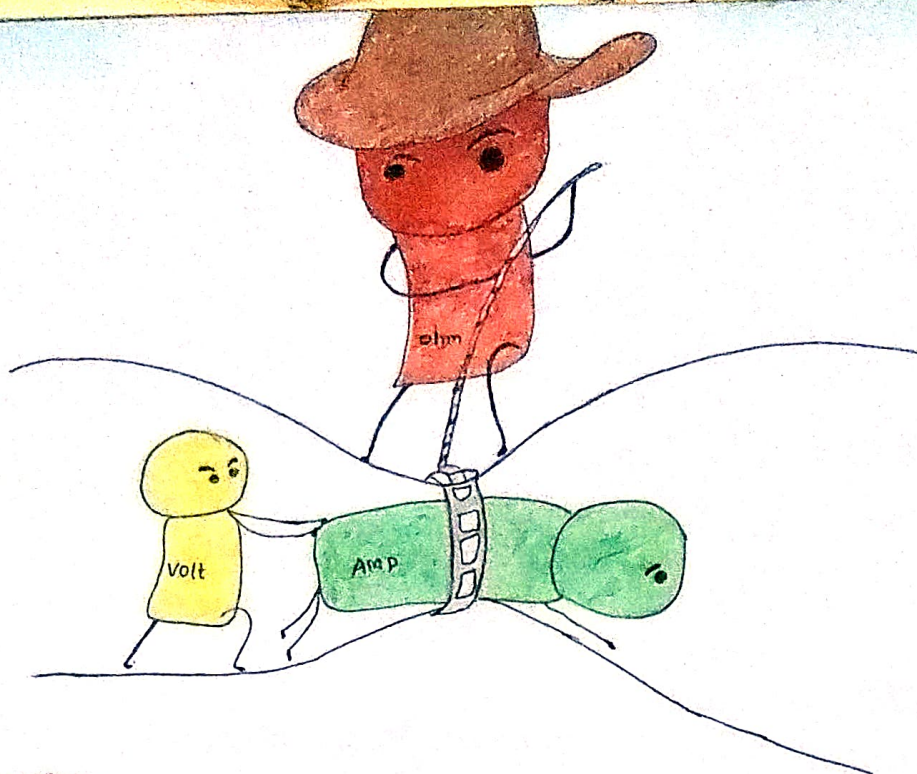
## **Basic Electronics Recognition**

Hands-on sessions introduce components like resistors, capacitors, diodes, and LEDs via identification kits and breadboards. Students verify values with multimeters, fostering skills for circuit building and troubleshooting.

## • **Chart Preparation**

Students learn to create graphs for lab experiments using tools like Excel or Python, plotting variables such as voltage vs current. This practice emphasizes data accuracy, labelling axes, and error analysis to visualize physics concepts clearly.

## • **Electricity Bill**



# Electricity

PHYSICS

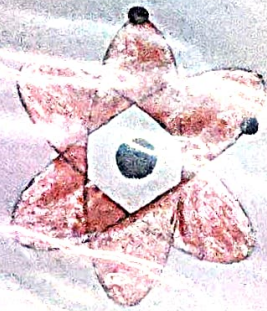
Teacher

TAKES A HAND  
OPENS A MIND  
AND

TOUCHES

Heart

EVERYTHING



HAPPENS

*for a reason and  
that reason is*

USUALLY

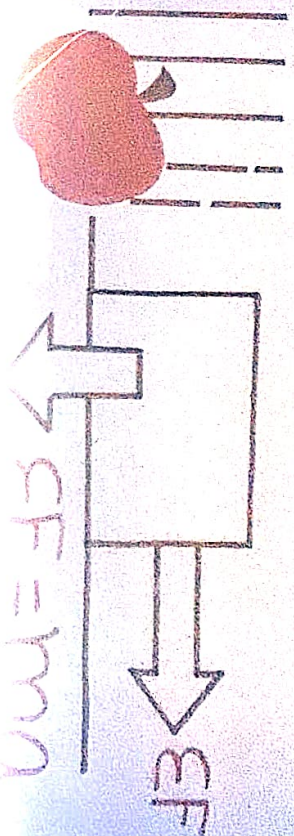
PHYSICS

# NEWTON'S 1ST LAW



A body at rest wants  
to stay at rest

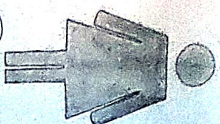
EVERYTHING HAPPENS  
FOR A REASON  
AND THAT REASON  
IS USUALLY PHYSICS



I'm ATTRACTED to you



$$F = -G \frac{m_1 m_2}{r^2}$$



Teacher

Student

If your scientific  
imagination is at low  
speed  
you are like a particle  
If your scientific  
imagination is at high  
speed  
you are like a wave

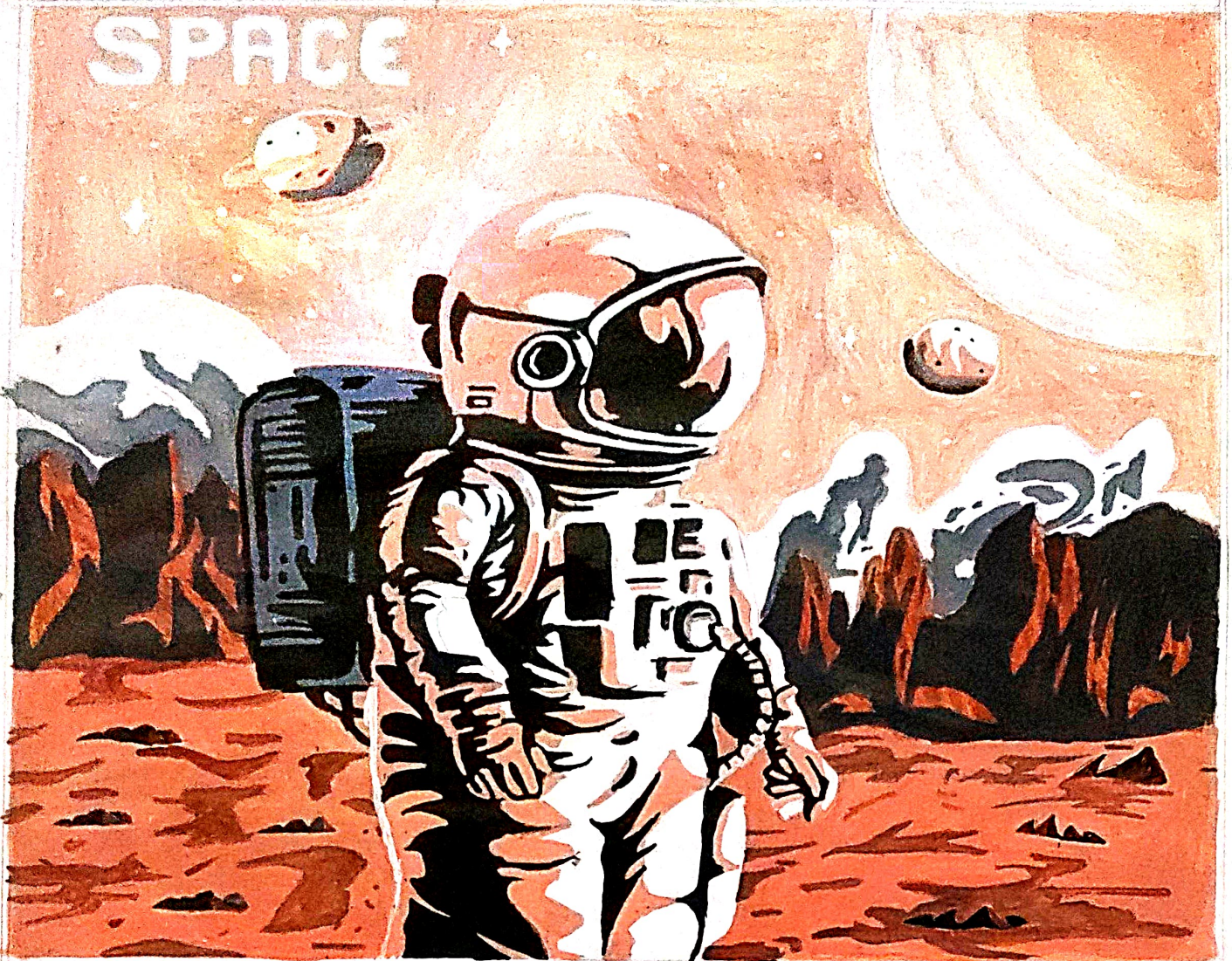
LIFE IS LIKE PHYSICS  
WITHOUT OBSERVATION  
YOU CAN'T PROCEED

NAME	SYMBOL	VALUE	UNIT
1. Electron Compton wave length.	$\lambda_{c0} = h/m_e c$	$2.2463 \cdot 10^{-12}$	m
2. Proton Compton wave length.	$\lambda_{cP} = h/m_P c$	$1.3214 \cdot 10^{-15}$	m
3. Reduced mass of the H-atom.	$\mu_H$	$9.1045756 \cdot 10^{-31}$	kg
4. Stefan-Boltzmann's constant.	$\sigma$	$5.67032 \cdot 10^{-8}$	$W m^{-2} K^{-4}$
5. Wien's constant.	$k_w$	$2.8978 \cdot 10^{-3}$	mk
6. Molar gas constant.	$R$	8.31441	J/mol
7. Avogadro's constant.	$N_A$	$6.0221367 \cdot 10^{23}$	$mol^{-1}$
8. Boltzmann's constant.	$k = R/N_A$	$1.380659 \cdot 10^{-23}$	J/K
9. Elementary mass.	$m_e$	$9.1093837 \cdot 10^{-31}$	kg

NAME	SYMBOL	VAL	UNIT
1. Elementary charge.	$e$	$1.602 \cdot 10^{-19}$	C
2. Gravitational constant.	$G, k$	$6.67259 \cdot 10^{-11}$	$m^3 kg^{-1} s^{-2}$
3. Fine-structure Constant.	$d = e^2/2hc\epsilon_0 \approx 1/137$		
4. Speed of light in vacuum.	$c$	$2.99792458 \cdot 10^8$	m/s (def)
5. Permittivity of the vacuum.	$\epsilon_0$	$8.854187 \cdot 10^{-12}$	F/m
6. Permeability of the vacuum ( $\mu_0 = 4\pi\epsilon_0$ ).	$\mu_0$	$4\pi \cdot 10^{-7}$	H/m
7. Planck's constant.	$h$	$6.6260756 \cdot 10^{-34}$	Js
8. Dirac's constant.	$h/h/2\pi$	$1.0545727 \cdot 10^{-34}$	Js
9. Bohr magneton.	$\mu_B = eh/2m_e$	$9.2741 \cdot 10^{-24}$	$Am^2$
10. Bohr radius.	$a_0$	$0.52918$	A

1. Proton mass.	$m_P$	$1.6726231 \cdot 10^{-27}$	kg
2. Neutron mass.	$m_n$	$1.674954 \cdot 10^{-27}$	kg
3. Elementary mass unit.	$m_u = \frac{1}{12} m(^{12}_6C)$	$1.6605656 \cdot 10^{-27}$	kg
4. Nuclear magneton.	$\mu_N$	$5.0508 \cdot 10^{-27}$	J/T
5. Diameter of the Sun.	$D_\odot$	$1392 \cdot 10^6$	m
6. mass of the Sun.	$M_\odot$	$1.989 \cdot 10^{30}$	kg
7. Rotational period of the Sun.	$T_\odot$	25.38	days
8. Radius of Earth.	$R_A$	$6.378 \cdot 10^6$	m
9. Mass of Earth.	$M_A$	$5.976 \cdot 10^{24}$	kg
10. Rotational period of Earth.	$T_A$	23.96	hours
11. Earth's orbital period.	Tropical year	365.24219879	day
12. Astronomical Unit.	AU	$1.4959787066 \cdot 10^{11}$	m
13. Light year.	ly	$9.4605 \cdot 10^{15}$	m

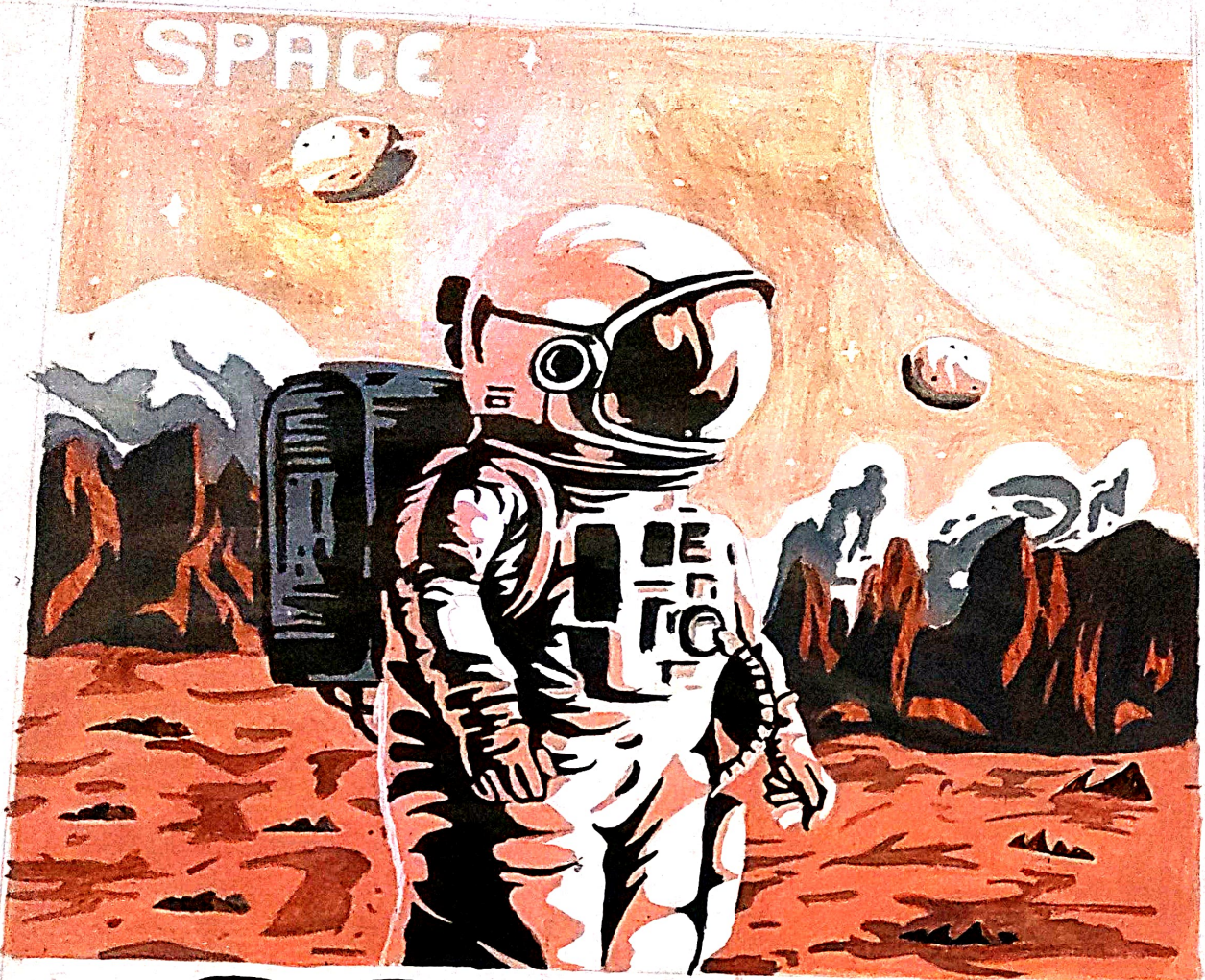
I STUDY MYSELF  
MORE THAN  
ANY OTHER SUBJECT  
THAT IS MY MET  
PHYSICS  
THAT IS MY PHYSICS



# GALAXY

## EXPLORE OTHER PLANET

ART BY  
M. LOKESH.  
IND BCC (PHYSICS)

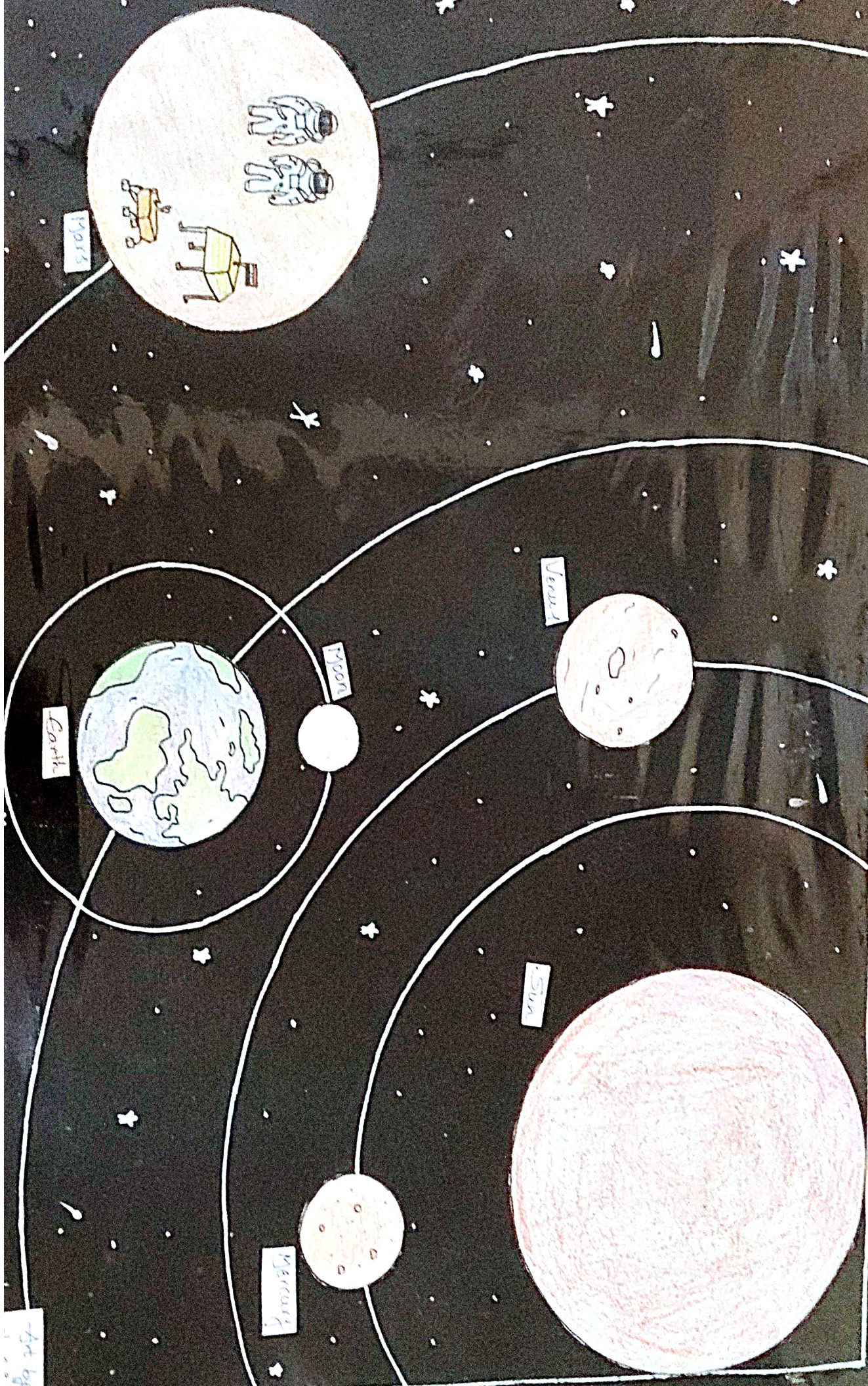


# **GALAXY**

## **EXPLORE OTHER PLANET**

Art. By  
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BSc (PHYSICS)

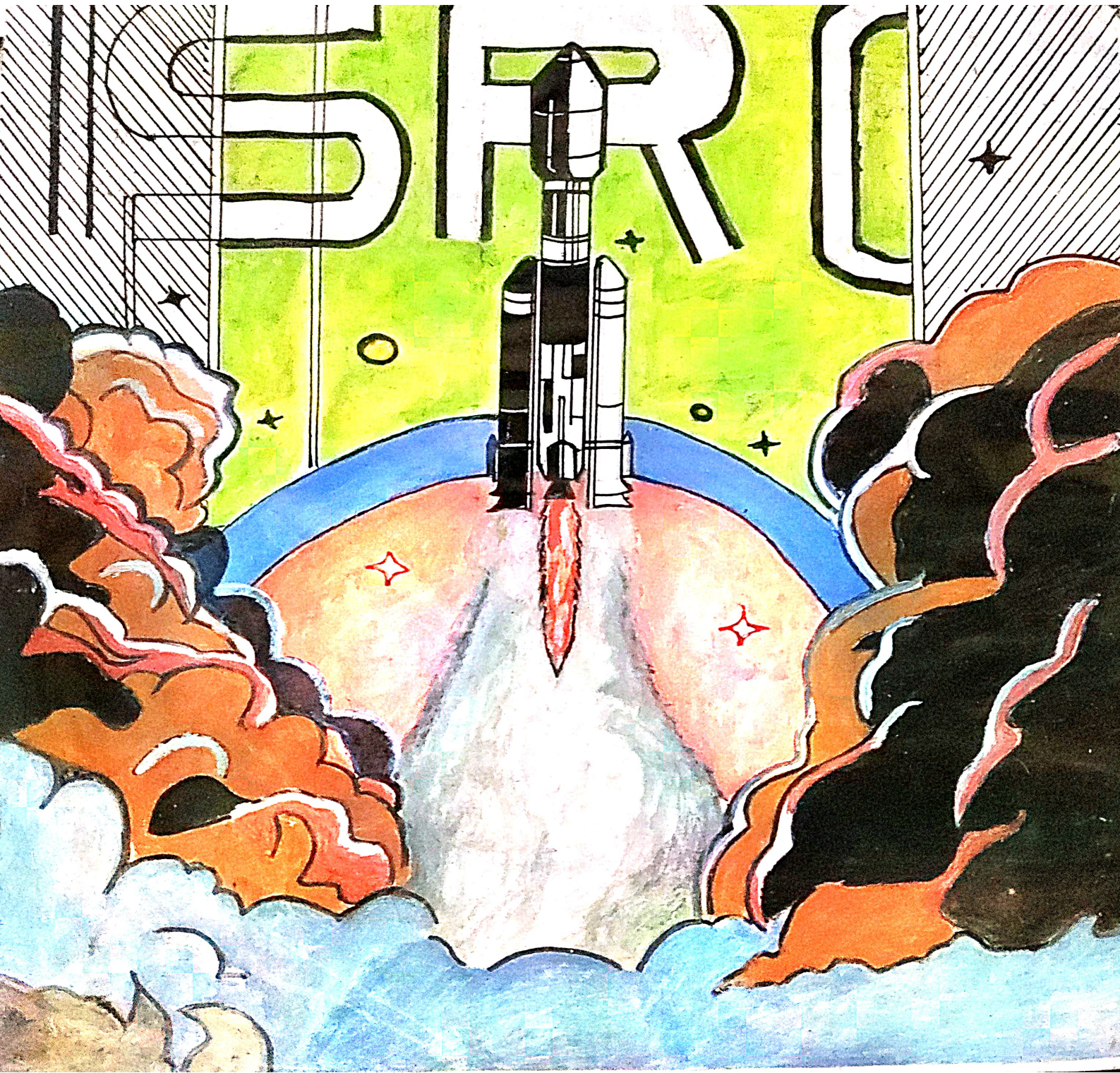
# A JOURNEY TO MARS IN FUTURE



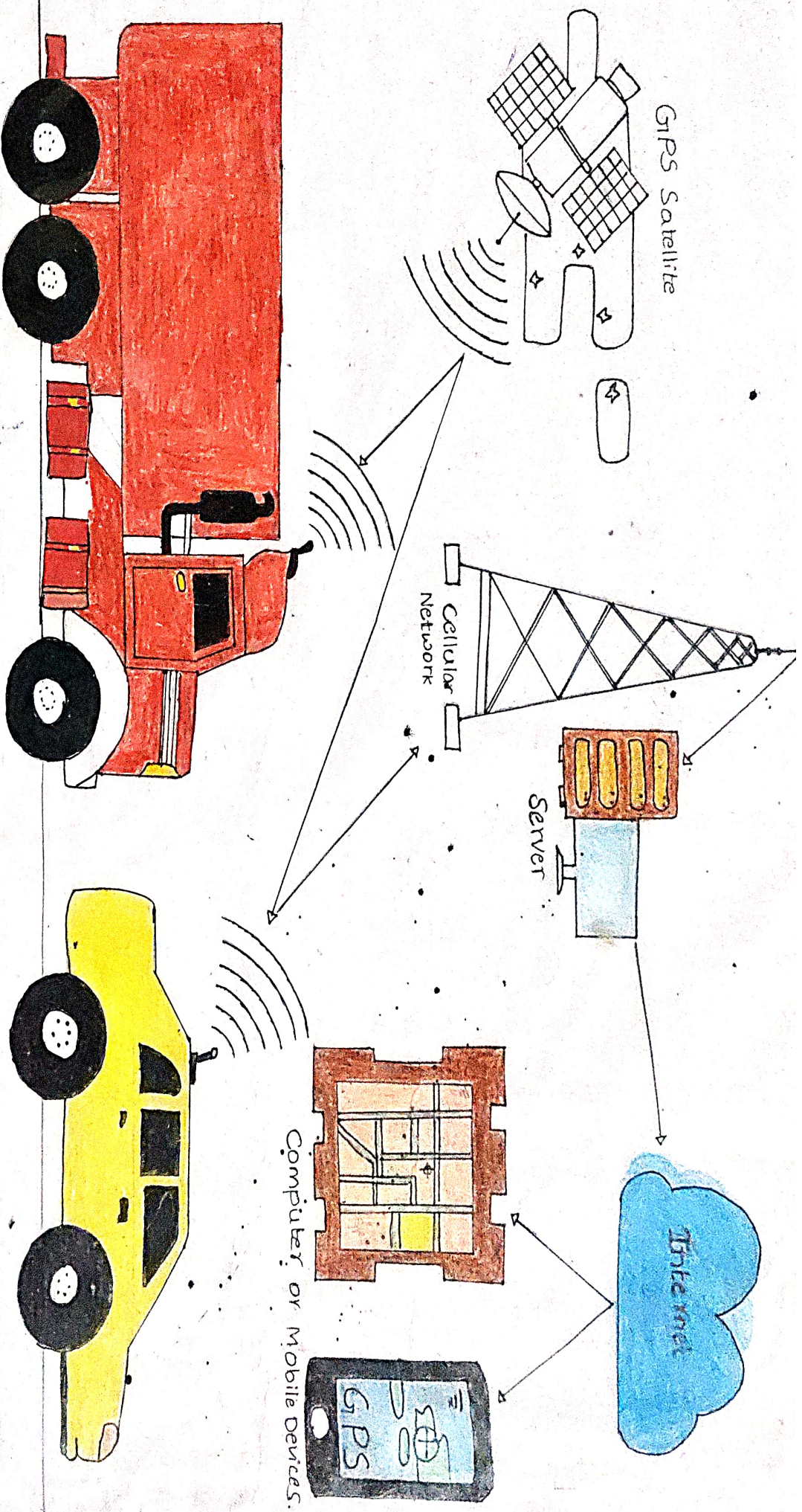
Art by

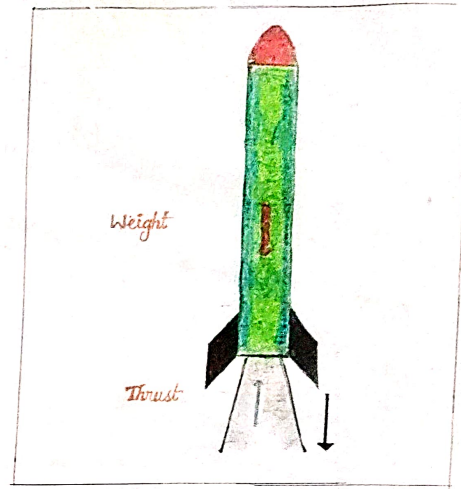
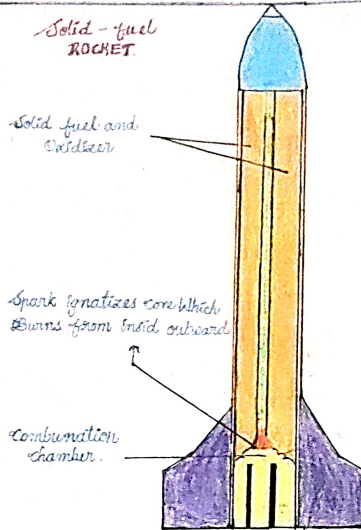
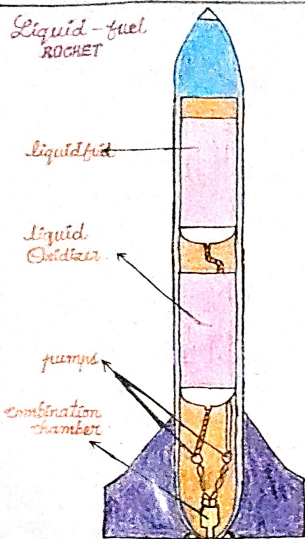


Art by  
P. S. S. S. S.



# Vehicle Tracking System





A rocket works by expelling hot exhaust gases downward, which generates an equal and opposite force, called Thrust, that pushes the rocket upward. This process is governed by Newton's third law of motion, which states that for every action, there is an equal and opposite reaction, and the principle of conservation of linear momentum. The gases are accelerated to super sonic speeds by converging-diverging (de Laval) nozzle, converting the thermal energy from combustion into kinetic energy to maximize thrust and allow the rocket to accelerate even in the vacuum of space.

## Launching.....VEHICLES

Art By  
Sushanth

You should be like  
a proton

But not like a nucleon  
in good aspects

you should be like a  
nucleon but not like  
a proton in bad

aspects

Theory of relativity

plotting variables such as voltage vs current. This practice emphasizes data accuracy, labelling axes, and error analysis to visualize physics concepts clearly.

## 2. **Electricity Bill Preparation**

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## BEST PRACTICES

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### **Scientific awareness of traditions:**

In addition to regular activities the department also encourages students to explore scientific principles behind traditional practices.

### **Practical Electronics Recognition**

Practical sessions introduce components like resistors, capacitors, diodes, and ICs via identification kits and breadboards. Students verify values with multimeters, fostering skills for circuit building and troubleshooting.

**SKVT GOVT DEGREE COLLEGE  
RAJAMAHENDRVARM**



**DEPARTMENT OF PHYSICS  
BEST PRACTICES**

NAME: *K. Kavya*

GROUP: *BSC [C.S]*

ADMITTED BATCH: *2023*

HALLTICKET NUMBER: *230917170071*

**SKVT GOVT DEGREE COLLEGE**  
**RAJAMAHENDRVARM**



**DEPARTMENT OF PHYSICS**  
**BEST PRACTICES**

NAME: *K. Kavya*

GROUP: *BSC [C.S]*

ADMITTED BATCH: *2023*

HALLTICKET NUMBER: *230917170071*

# Power consumption for the Month of October

S. NO	Item Name	No. of Items	Individual Wattage	No. of Hours Used	Total Wattage	Wattage in Kilo watts
1.	Tube light	2	20 watts	5 hrs	200 watts	0.2 kwh
2.	Fan	1	100 watts	8 hrs	800 watts	0.8 kwh
3.	Fridge	1	350 watts	10 hrs	3500 watt	3.5 kwh
4.	Washing Machine	1	500 watts	1 hour	500 watts	0.5 kwh
5.	Water Motor	1	250 watts	2 hours	500 watts	0.5 kwh
6.	Television (T.V)	1	100 watts	3 hrs	300 watts	0.3 kwh

$\therefore 1 \text{ UNIT} = 1 \text{ kwh}$

The total number of units per one day

= 5.8 units

The total number of units per the month is

= 174 Units

## Slab Rate:

Upto 30 units	- 1.90 Rs
31 to 75 units	- 3.00 Rs
76 to 125 units	- 4.50 Rs
126 to 225 units	- 6.00 Rs
226 to 400 units	- 8.75 Rs
>400 units	- 9.75 Rs

Charge for 30 units @ 1.90/- =  $1.90 \times 30 = 57$

Charge for 45 units @ 3/- =  $3 \times 45 = 135$

Charge for 50 units @ 4.5/- =  $4.5 \times 50 = 225$

Charge for 48 units @ 6/- =  $6 \times 48 = 288$

Total power consumption charge is  
697 Rupees

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# POWER CONSUMPTION

MONTH :- January [2024]

S. NO	Item	No of Items (n)	Individual Watts (P)	Total hrs used (t)	Total Wattage = npt	Wattage in KWH
01.	Bulbs	10	100	10	10000	10 KWH
02.	Fans	5	75	10	3750	3.75 KWH
03.	AC	2	1000	5	10000	10 KWH

1 KWH = 1 UNIT

Total number of units per one day  
= 23.75 units

Total number of units per one month  
= 712.5 units

## SLAB RATE :-

UNITS	RUPEES
0 up to 50	5.40
51 up to 100	7.65
101 up to 300	9.05
300 up to 500	9.60
> 500	10.15

### Calculations:-

Charge for 50 units @ 5.40 -  $50 \times 5.40 = 270$

Charge for 50 units @ 7.65 -  $50 \times 7.65 = 382.5$

Charge for 200 units @ 9.05 -  $200 \times 9.05 = 1810$

Charge for 200 units @ 9.60 -  $200 \times 9.60 = 1920$

Charge for 212.5 units @ 10.15 -  $212.5 \times 10.15 = 2156.8$

Total power consumption charge in one

month = 6539.3

# **SKVT GOVT DEGREE COLLEGE**

**RAJAMAHENDRVARM**



## **DEPARTMENT OF PHYSICS**

### **BEST PRACTICES**

NAME: *K. Sravani*

GROUP: *Computer Science*

ADMITTED BATCH: *2023*

HALLTICKET NUMBER: *230917170067*

helps students to plan their studies and participate actively

### **Scientific awareness of traditions:**

In addition to regular activities the department also encourages students to explore scientific principles behind traditional practices

### **Basic Electronics Recognition**

1. Why do we light a lamp in front of God?

1. lighting a lamp represents removal of darkness and ignorance the heat and light also purify the surroundings

2. Why do we apply turmeric during rituals?

Turmeric has antibacterial and antiseptic properties.

3. Why do we apply Sandal wood paste on the forehead?

Sandalwood cools the body and reduces stress.

4. Why do we ring bells in temples?  
The sound vibrations improve concentration and create positive energy.

5. Why do we walk barefoot in temples?  
Walking barefoot improves blood circulation and connects the body with natural energy.

6. Why do we draw rangoli or muggu in front of house?

Earlier rice flour was used which feeds small insects and birds maintaining ecological balance.

7. Why do we eat on banana leaves?

Banana leaves contain antioxidants and are hygienic.

8. Why do we fast during festivals?

Fasting helps detoxify the body and improves digestion.

9. Why do we burn Camphor during prayer?

Camphor purifies the air and kills germs.

10. Why do we perform Surya Namaskar?

It improves flexibility, digestion and blood circulation.

11. Why do we greet elders by touching their feet?

A: It improves humility and creates positive emotional bonding.

12. Why do we keep Tulsi plant at home?

A: Tulsi purifies air and has medicinal properties.

13. Why do we use copper vessels

for drinking water?

A: Copper kills harmful bacteria in water.

14. Why do we sit on the floor while eating?

A: It improves digestion and posture.

15. Why do we perform pradakshina around temples?

A: It promotes physical activity and mental focus.

16. Why do we break coconuts in temples?

A: It symbolizes breaking ego and also provides nutritious food.

17. Why do we burn incense sticks?

A: The fragrance refreshes the mind and removes bad odor.

18. Why do we celebrate festivals according to seasons?

A: Seasonal foods help maintain health.

19. Why do we clap hands during bhajans?

A: Clapping stimulates nerve points in the palms.

20. Why do we use neem leaves in festivals?

A: Neem has antibacterial properties.

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21. Why do we wake up early in the morning?

A: Morning air is fresh and improves health.

22. Why do we chant mantras?

A: Chanting produces sound vibrations that calm the mind.

23. Why do we use cow dung in traditional houses?

A: Cow dung acts as a natural disinfectant.

24. Why do we plant trees during festivals?

A: Trees provide oxygen and improve the environment.

25. Why do we take a bath before prayer?

A: Bathing removes dirt and refreshes to body and mind.

29) why do we burn dried cow dung cakes in villages?

A) it repels insects and purifies air.

Q. గ్రామాలలో ఎక్కడ గ్రామాలలో ఎక్కడ గ్రామాలలో!  
ఇది ఎందుకంటే దీని ద్వారా గ్రామాలలో పురుగు  
జంతులను దూరం చేసి గ్రామాలలో పురుగు  
జంతులను దూరం చేసి గ్రామాలలో పురుగు

30) why do we respect nature in our traditions?

A) Respecting nature helps maintain ecological balance.

Q. పర్యావరణాన్ని గౌరవించడం ఎందుకు ముఖ్యం?

పర్యావరణాన్ని గౌరవించడం పర్యావరణ సంతులనాన్ని  
కాపాడుతుంది.

31) why do we apply oil before taking a bath in traditional practice?

A) oil massage improves blood circulation and relaxes muscles.

Q. నీటిలో స్నానం చేసే ముందు నీటిలో నీటిలో  
నీటిలో నీటిలో నీటిలో నీటిలో నీటిలో నీటిలో  
నీటిలో నీటిలో నీటిలో నీటిలో నీటిలో నీటిలో

32) why do we use earthen pots for storing water?

A) Earthen pots naturally cool the water through evaporation.

Q. నీటిని నిల్వ చేసేందుకు నీటిని నిల్వ చేసేందుకు

నీటిని నిల్వ చేసేందుకు నీటిని నిల్వ చేసేందుకు  
నీటిని నిల్వ చేసేందుకు నీటిని నిల్వ చేసేందుకు  
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31. Why do we apply oil before taking a bath in traditional practice?

A: Oil massage improves blood circulation and relaxes muscles.

32. Why do we use earthen pots for storing water?

A: Earthen pots naturally cool the water through evaporation.

33. Why do we eat jaggery after meals in some traditions?

A: Jaggery helps digestion and cleans the digestive system.

34. Why do we use neem sticks to brush teeth traditionally?

A: Neem has antibacterial properties that protect teeth and gums.

35. Why do we sit quietly for a few minutes after prayer or meditation?

A: It helps calm the mind and reduce stress.

41. Why do we apply mehendi (henna) on hands during festivals?

A: Henna cools the body and reduces stress.

42. Why do we keep lamps outside houses during festivals like Diwali?

A: Light helps remove darkness and驱除 insects.

43. Why do we share food during festivals?

A: Sharing food promotes social bonding and community harmony.

44. Why do we decorate houses with mango leaves?

A: Mango leaves help purify air and symbolize freshness.

45. Why do we use clay lamps instead of plastic or metal lamps traditionally?

A: Clay lamps are eco-friendly and biodegradable.

70 Why do neutons expand during heating?

Molecules move further apart.

71 Why are railway tracks provided with gaps?

To allow thermal expansion.

72 Why does a pressure cooker cook food faster?

Increased pressure raises boiling point.

73 Why do we wear woollen clothes in winter?

Wool is a poor conductor of heat.

74 Why does a thermos flask keep liquid hot?

Vacuum prevents heat transfer.

75 Why do black surfaces absorb more heat?

Black colour absorbs more radiation.