BUDHA DAL PUBLIC SCHOOL PATIALA

ANNUAL CURRICULUM PLAN SESSION 2024-25

CLASS-10

PHYSICS

Chapter: light

MONTH-APRIL

CLASS TRANSACTYION – 12 Periods

Topic: Reflection of light

Learning objectives:

students will be able to

- understand the planemirror, spherical Mirrors and the images formed by them
- explain laws of reflection
- uses of spherical Mirrors
- mirror formula with its linear magnification

Previous knowledge testing:

- an activity with students will be perform with plane mirror
- to show the reflection of light
- after performing activities students will be asked about their observations

important spellings:

principal Axis, centre of curvature, focal length

Aids/ innovative methods used to explain the topic:

procedure

some activities with concave mirror will be performed

- to find the focus of concave mirror with the help of scale 1 m,a concave mirror and a screen in form of a wooden board or wall also can be used as screen. the rays from the window are focused on screen, when the inverted images

on the screen is clear and shark then students will measure the distance between the wall and mirror example equal to the focal length of mirror.

- The rear view mirror of a car or scooter will be shown to give them the knowledge of property of convex mirror which is used as rear view mirror of any vehicle because it has wider field of view.

Participation of students:

The students will observe all the experiments and enlist the points and will discuss in class first in the groups and the outcome results will be told to teacher and the assessment will be done.

Recapitulation:

students will get the knowledge of following phenomena:

- reflection of light from plane mirror and Spherical mirror.
- to find the focal length of concave mirror ,and convex mirror

Integration with other domain: to draw the ray diagrams and measure the angle of incidence and reflection.(Art integration)

learning outcomes:

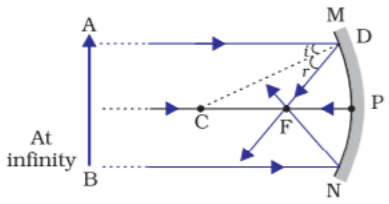
students will come to know about

- reflection of light
- reflection of light from plane and spherical surfaces
- detailed Ray diagrams from concave and convex mirror

resources and link:

- Khan Academy short topics online study material on topics reflection and refraction of light
- NCERT textbooks of Science from class 10
- from extra marks smart classes
- Living Science Physics by Dhiran M Doshi

Co - Scholastic Activities



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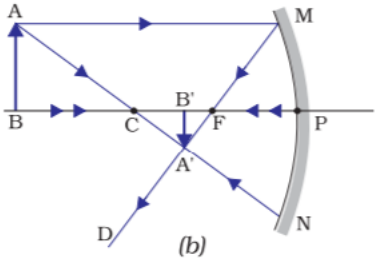

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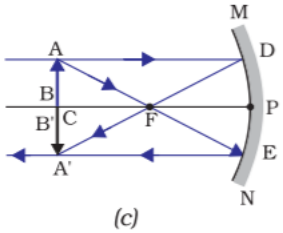

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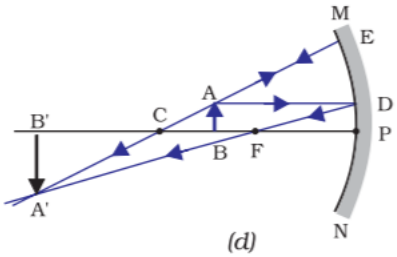

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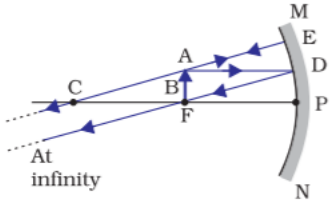

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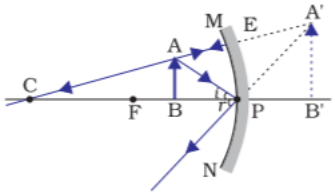

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Feedback\ Remedial Teachings-

- Blackboard practice, group discussions after the topic
- oral and written test will be taken

Inclusive practice and full participation without discrimination

Lesson will be tought equally to all students irrespective of their economic background

CH-LIGHT

Topic: Refraction of light

MONTH - MAY

CLASS TRANSACTION – 12 Periods

objectives:

students will be able to

- understand the phenomena of refraction of light through different medium.
- understand the refraction laws (Snell's law of refraction).
- to explain the refraction of light through concave and convex lenses.
- uses of concave and convex lenses.
- activity to find focal length of convex lenses.

Previous knowledge:

an activity like dipping of spoon in water glass to show them that it bends and students will answer the reason that why it bends.

important spelling:

optical centre, focus, radius of curvature, refractive index

Aids& innovative methods used to explain the topic/ pedagogic method:

Procedure of activity

- an activity to find the focal length of convex lenses by focusing the rays coming from Windows as an object at infinity and it is focused at the wall to get defined clear and small inverted image.
- the students will measure the length example distance between wall and lens equal to focal length of convex lens.

Participation of students:

the students will observe all the experiment and calculate the focal length of lenses

Assessment:

The exit card activity was done the students will write about the output or the concept they will learn and allowed to leave the class.

Recapitulation:

Students will get the knowledge of the following phenomena

- refraction of light.
- uses of lenses and to study about them.
- numerical to find focal length from lenses formula.

$$\frac{1}{f} = \frac{1}{v} - \frac{1}{u}$$

resources and link:

- Khan Academy short topics online study material on topics reflection and refraction of light
- NCERT textbooks of Science from class 10
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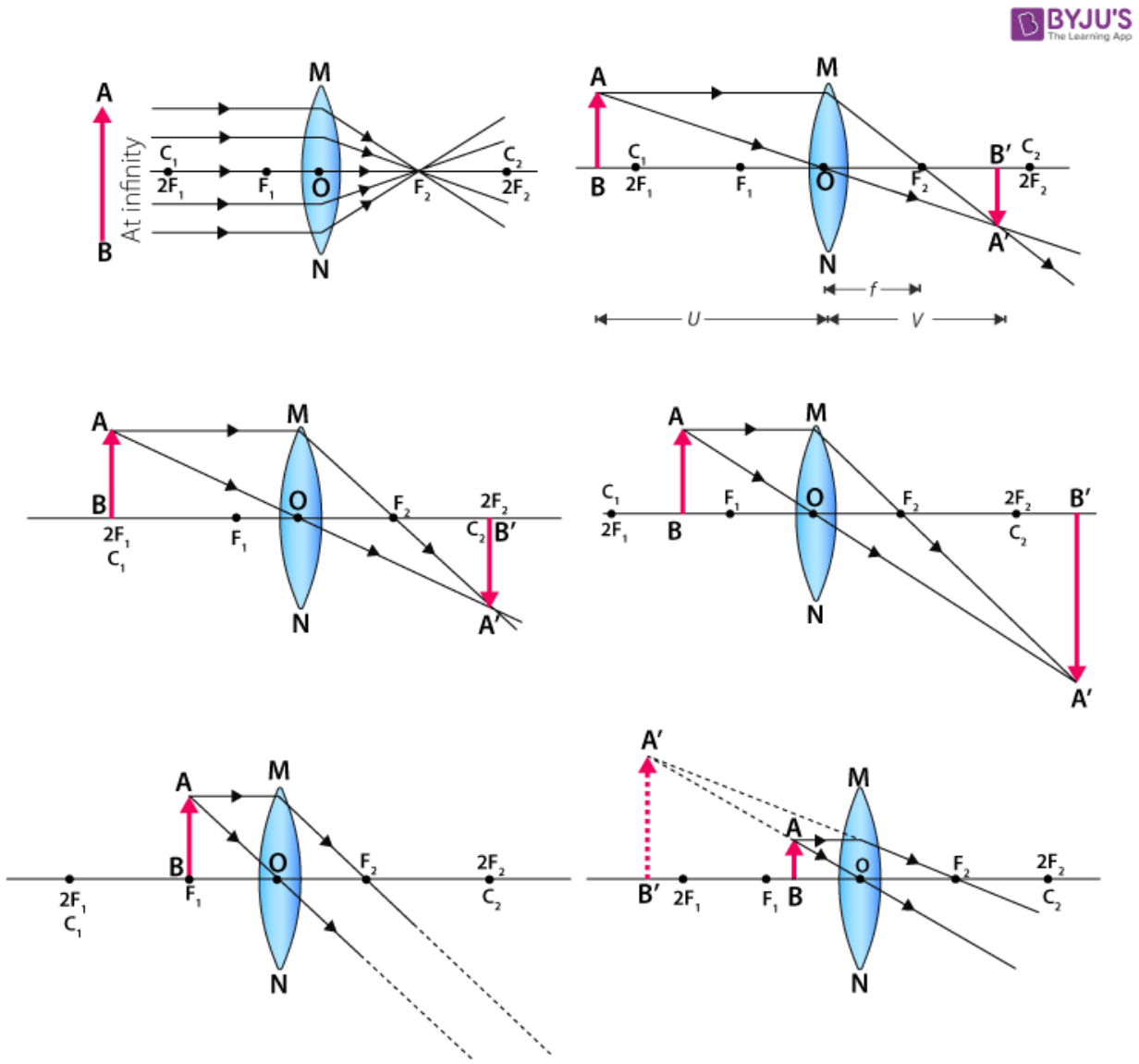
- Living Science Physics by Dhiran M Doshi

<u>Co scholastics activities</u>



Feedback and Remedial teachings

. Assignments and practice worksheets to be taken
. doubt session will be conducted after the completion of the topic.

INCLUSIVE PRACTICE AND FULL PARTICIPATION WITHOUTR DISCRIMINATION

Lesson will be tought equally to all students irrespective of their economic background

SUSTAINABLE DEVELOPMENT GOALS

After understanding this chapter students will be able to improve the infrastructure and think of innovative ways of meeting the energy requirement.

CH – THE HUMAN EYE AND THE COLOURFUL WORLD

MONTH – JULY/AUGUST

CLASS TRANSACTION – 12 Periods

learning objectives:

- the human eye power of accommodation
- defects of vision and their remedy
- refraction of light through a prism
- Dispersion of light
- atmospheric reflection

- scattering of light
- solve numerical problem and conceptual questions

previous knowledge:

students will be shown an activity to see spectrum of white light through the glass prism and analyse the colours example VIBGYOR

Important spellings:

atmospheric refraction scattering, accommodation hypermetropia and myopia, presbyopia.

Aids/ innovative methods /pedagogic method:

instruments from physics lab will be used for activity of refraction of light through glass prism.

activity and its procedure:

the glass prism is placed on white sheet and its boundary is made the angle of incidence is made then pin are placed in upright position on the incident ray and these two pins are observed from the other refracting face of the glass prism now the other two pins are place in the upright position in such a way that all the 4 pins in straight line students will take out the pins and draw the line which is the

emergent ray the incident and emergent ray meet at a point after extending it there it will make angle of deviation.

Inferences of activity:

- Students can differentiate between refraction through glass prism and glass slab.
- Activity to understand the model of human eye and their defects will be explained and the students will be able of differentiate between the three defects and their remedies.
- Students will be explained about the formation of rainbow and the phenomenon due to atmospheric refraction.
- Students will be explained about the blue colour of sky reddening of sun at sunrise and sunset.

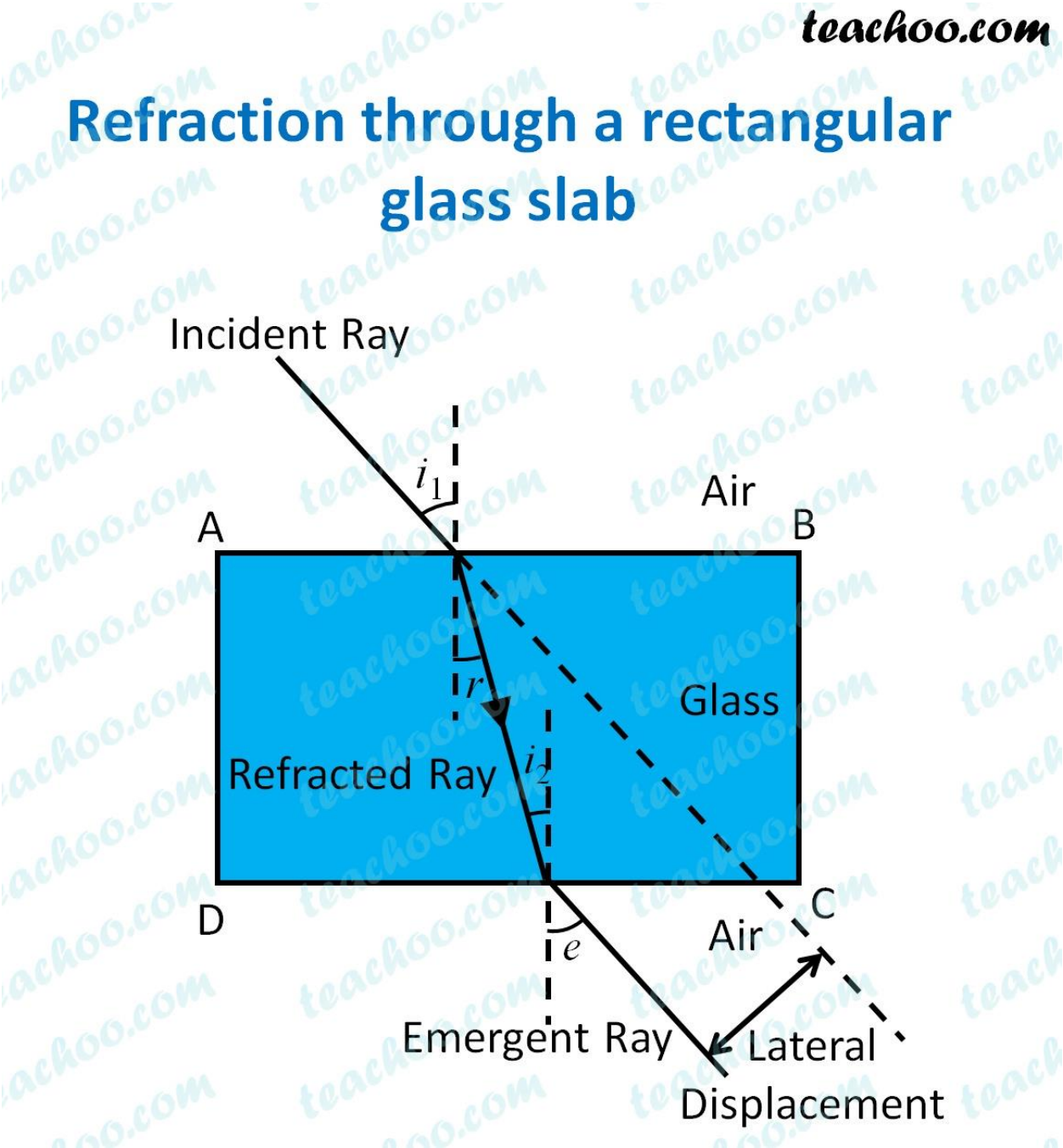
Participation of students:

the students will be observing all activities performed in classroom and will pen down all the important points and discussion will be done in groups and finally with the teacher.

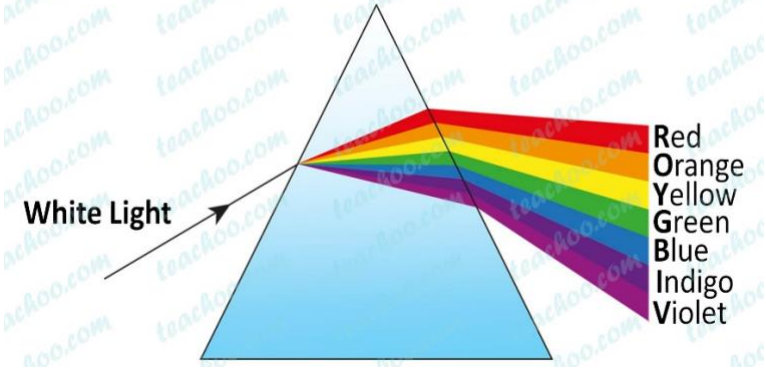
Assessment:

quiz will be conducted.

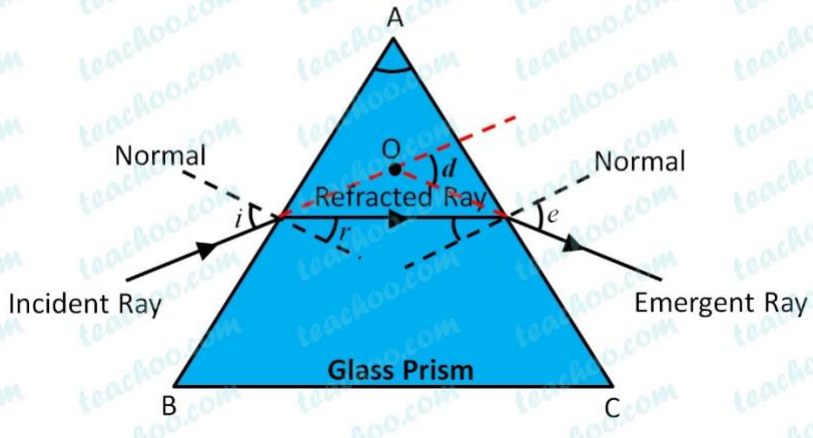
Co scholastics activities



Dispersion of White Light in a glass prism



Refraction of light through a glass prism



Feedback and remedial teachings :-

- Practice worksheets to be solved in the class.
- Activities with glass lab and glass prism.

INCLUSIVE PRACTICE AND FULL PARTICIPATION WITHOUTR DISCRIMINATION

Lesson will be tought equally to all students irrespective of their economic background

SUSTAINABLE DEVELOPMENT GOALS

After studying refraction students will be able to understand the cause of natural phenomenon in nature .

CHAPTER – ELECTRICITY

MONTH – AUGUST/SEPETEMBER

CLASS TRANSACTION – 14 Periods

LEARNING OBJECTIVES :-

Concept of Electric Charge and its properties. Basic

concept of Electric current and its units. Basic

concept of the components of Electric circuit & their symbols.

Textbook Numerical problems related to the topic.

PREVIOUS KNOWLEDGE :-

Students will be asked to make simple electric circuity using various components like

battery switch bulb etc.

IMPORTANT SPELLINGS :-

Resistance , Resistivity , Rheostat , Ammeter , Voltmeter , Ohm , Joule

AIDS / INNOVATIVE METHODS / PEDAGOGICAL METHODS :-

Activating Prior Knowledge by Random Questioning

Introducing the topic to be taught after getting the expected response from the students.

Developing hypothesis by : Brainstorming Lecture Discussion

In Text Questions.

INSTRUCTIONAL TOOLS AND REFERENCES :-

In addition to general teaching tools like white board, marker, etc, the teacher will use

i) Electric devices like Ammeter, Voltmeter, electric cell, battery, plug key, connecting wires, Resistor, etc.

ii) Apparatus for verifying Ohms Law

iii) The References used will be : -Conceptual Physics by Paul Hewit -Science and Technology Text Book for class X.

Activity / Assignment / Projects :-

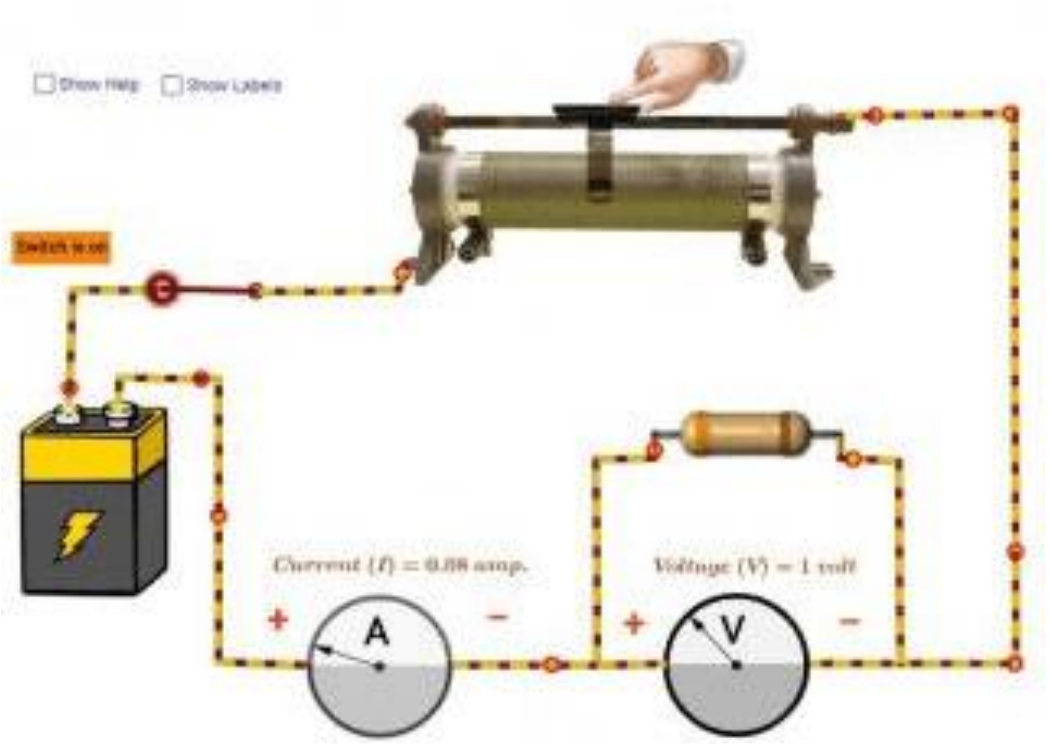
Chart Making: The areas of assessment will be: (Time Management) (Presentation) (Correctness)

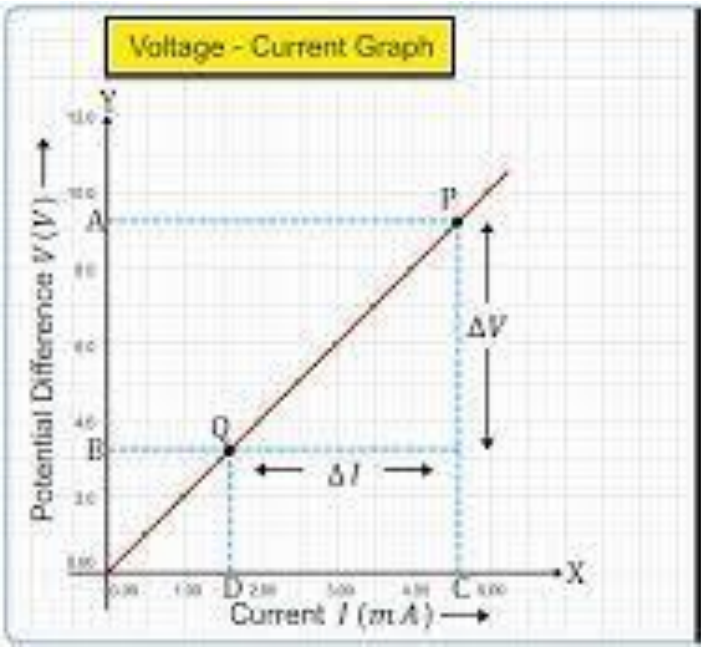
Assessment of Learning Outcomes :-

Home Assignments: The areas of assessment will be: (Regularity) (Content of Knowledge) (Presentation) (Correctness) (Thinking skills).

Group Activity: The teacher will divide the students in groups to perform practical work (Ohms Law) in the lab and the areas of assessment may include (Teamwork) (Submission of practical notebook) (Observation skill), (Experimental skills), (Understanding skill-viva voce), (Analytical skills), (Knowledge Application) (Computational skills) (Drawing conclusions). The teacher will assess any three relevant skills for FA.

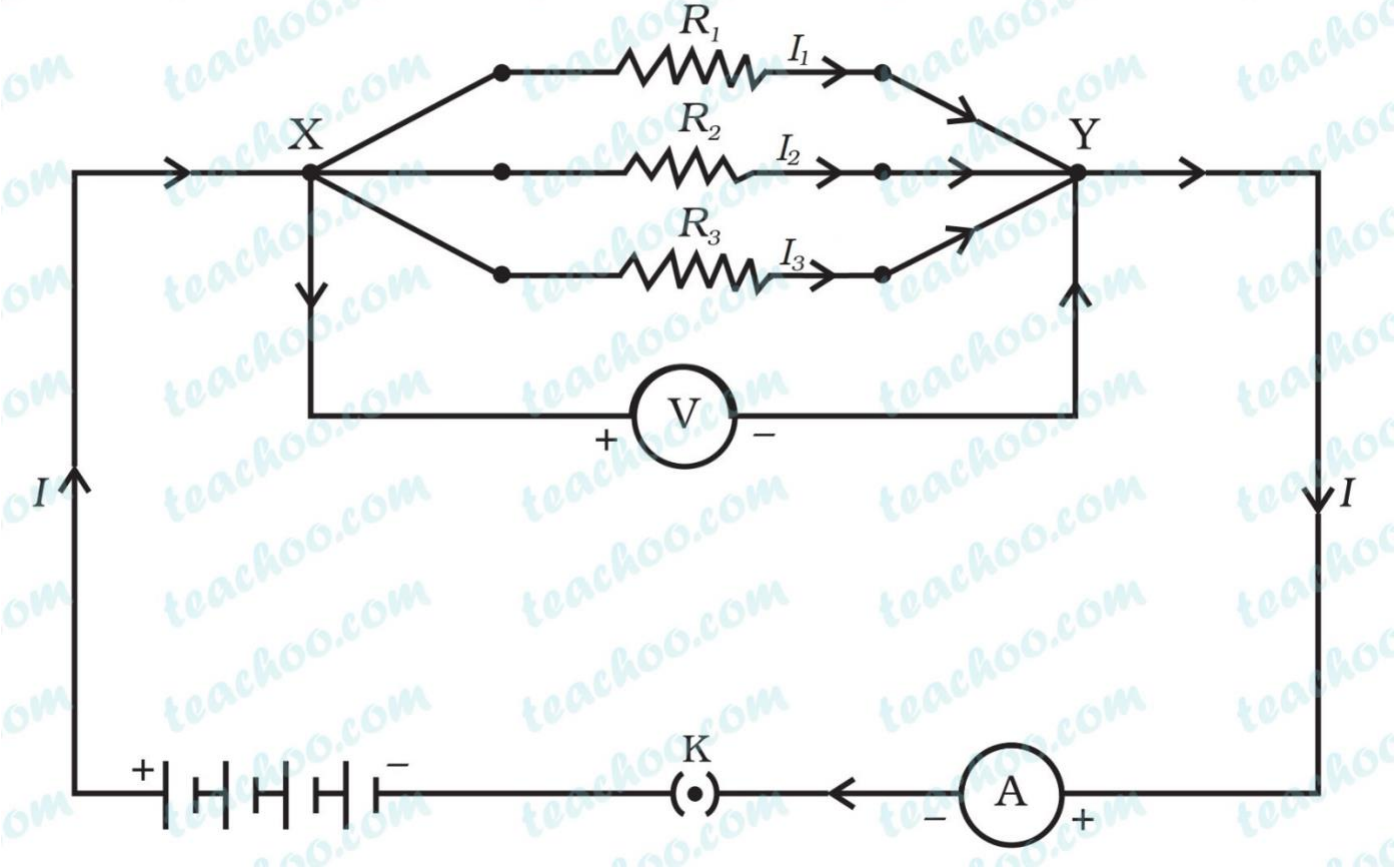
CO SCHOLASTIC ACTIVITIES





$$R = \frac{\Delta V}{\Delta I}$$

Resistors in Parallel



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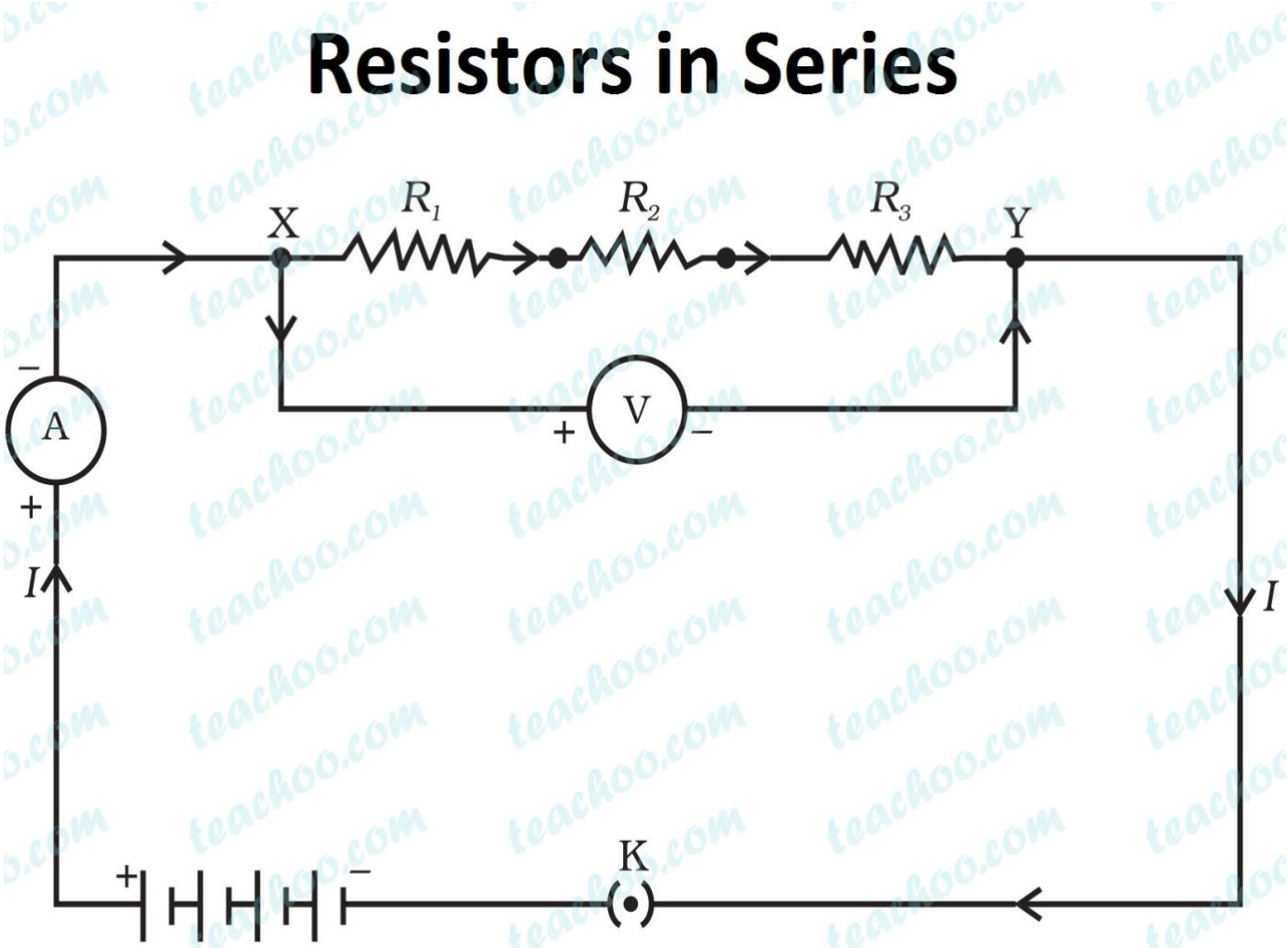


FEEDBACK AND REMEDIAL TEACHINGS

. Activities will be performed to verify ohms law

Practise worksheets will be solved in the class

INCLUSIVE PRACRTISE AND FULL PARTICIPATION WITHOUT DISCRIMINATION

Lession will be taught without discrimination on the basis of gender caste and religion.

SUSTAINABLE DEVELOPMENT GOALS :-

Students will realise the importance of conserving electricity . They will be able to recognise the need of renewable energy and judicious use of current energy available .

CHAPTER – MAGNETIC EFFECT OF ELECTRIC CURRENT

MONTH – OCTOBER

CLASS TRANSACTION – 12 Periods

Objectives :-

Concept Properties of a Magnet

Magnetic Field Lines and their applications

Oersteds Experiment

Magnetic field due to a current carrying straight wire, coil and solenoid

Instructional Tools & Reference :-

In addition to general teaching tools like white board, marker, etc, the teacher will use

(i) Magnets of different shapes
(ii) Electromagnet
(iii) Oersteds Experiment

The References used will be : -

Conceptual Physics by Paul Hewit -Science and Technology Text Book for class X.

INPORTANT SPELLINGS :-

Quantized charge , Metallic , Coulumb , Solenoid , Galvanometer , Induction.

Pedagogy :-

Activating Prior Knowledge by Random Questioning

Introducing the topic to be taught after getting the expected response from the students.

Developing hypothesis by : Brainstorming

Lecture Discussion

In Text Questions

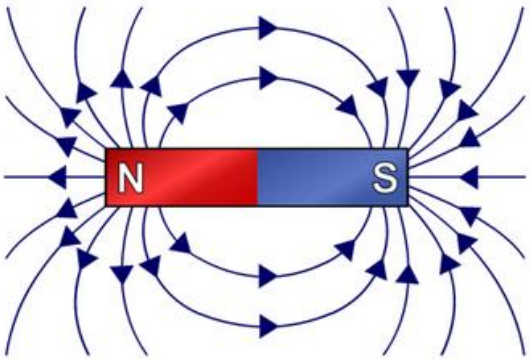
Activity / Assignment / Projects :-

Home Assignments: The areas of assessment will be: (Regularity) (Content of Knowledge) (Presentation) (Correctness) (Thinking skills).

Assessment of Learning Outcomes :-

Group Activity: The teacher will divide the students in groups to perform activity (current produces magnetism) in the lab and the areas of assessment may include (Teamwork) (Observation skill), (Experimental skills), (Analytical skills), (Knowledge Application) (Drawing conclusions). The teacher will assess any three relevant skills for FA.

CO – SCHOLASTIC ACTIVITIES :-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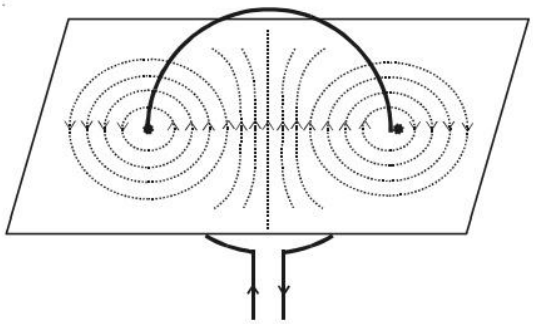
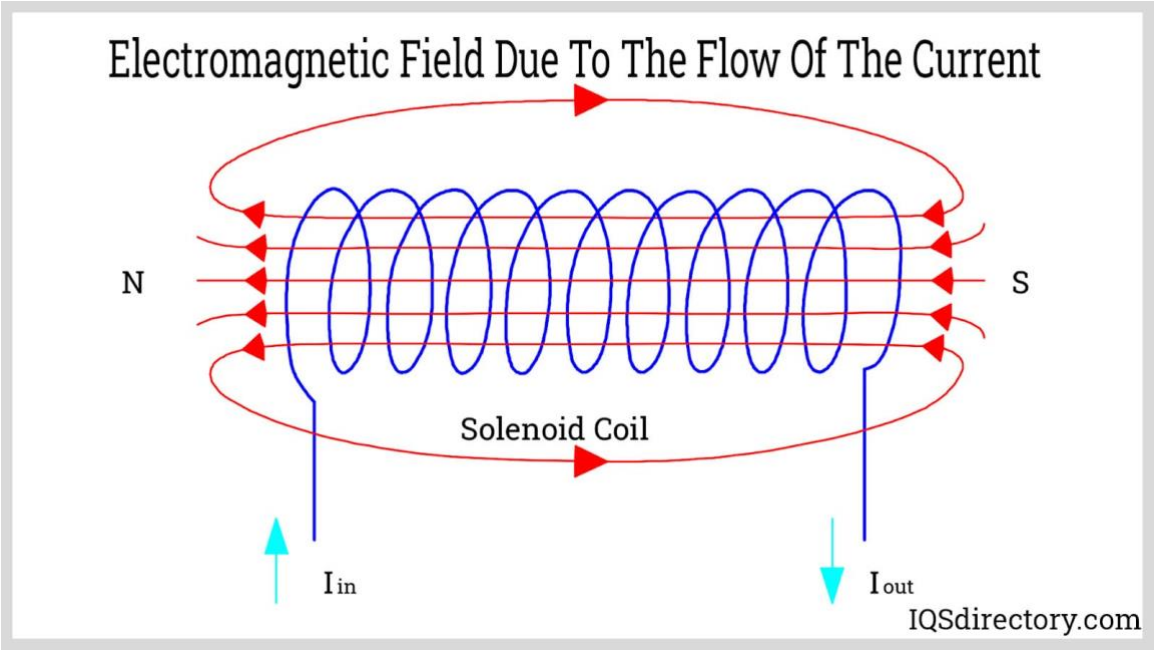


Fig 3.9 Magnetic field due to a circular loop carrying current



Feedback and remedial teachings

doubt sessions will be taken after each topic

practise worksheets will be solved in the class

Inclusive practise and full, participation without discrimination

While teaching, no gender biasing or discrimination will be made

Sustainable development goals

This concept will help students think of innovative ways to generate electricity.