

Pre-Content/content Post-Content	Learning outcomes/Objectives	
	General	Specific
<u>Pre-content:</u> Students know how cyclones can cause a lot of damage to human life and property. Also, what steps should be taken to protect ourselves from these destructive phenomena to some extent. Teacher will motivate the students to introduce the lesson. Discuss two other two destructive natural phenomena lightning and earthquakes. What steps should be taken to minimize the destruction caused by these phenomena <u>Content:</u> - Type of charges and their interaction - Lightning - Earthquakes <u>Post-content:</u> Students will be able to understand that lightning and earthquakes are natural disasters that cannot be predicted. They will be able to discuss the causes behind such natural disasters. They will also learn about the necessary precautions to be taken to protect ourselves from such disasters.	Students will be able to:- enlist the types of charges explain the cause of lightning and the principle of a lightning conductor. discuss the occurrence of an earthquake and will be able to list out its hazards. device the actions to be followed during an earthquake	Students will be able to :- list properties of electric charges demonstrate transfer of charge by a simple electroscope explore the cause of occurrence of lightning propose safety measures during lightning illustrate the working of lightning conductor identify the layers of the earth's crust discuss the cause of an earthquake and compile major earth quakes in India discover the hazards of earthquakes enlist precautionary measures during disaster like an earthquake or a thunderstorm and also during disaster management mock drills.

Home Work/Assignments

- Exercise questions
- Extra questions
- Worksheets

Teacher's Activity	Student's Activity	Teacher's observation and Remedial action taken
Teacher will <u>Annexure 15(A)</u> demonstrate activity – To observe whether a neutral body can be charged or not (Charging by friction – rubbing) <u>Annexure 15(B)</u> demonstrate activity – To prove two similar charged balloons repel each other <u>Annexure 15(C)</u> demonstrate activity – To prove two similar charged ball pen refills repel each other <u>Annexure 15(D)</u> demonstrate activity – To prove a charged balloon and a charged ball pen refill having unlike charges attract each other <u>Annexure 15(E)</u> demonstrate activity – To detect the charge with the help of charge detector	Students will <u>Annexure 15(a)</u> perform the activity and will complete the given observation table. <u>Annexure 15(b)</u> perform the activity and will write the activity with the observations in their notebook <u>Annexure 15(c)</u> perform and observe the activity and will write the activity with the observations in their notebook <u>Annexure 15(d)</u> perform and observe the activity and will write the activity with the observations in their notebook <u>Annexure 15(e)</u> perform and observe the activity and will write the observations in their notebook	

Teaching Aids- Active Inspire boards, ICR, Materials required for activities, worksheets and textbook

Methodology/Innovative Methods: Activity based teaching, Know to Unknown, Discussions, Deductive Activity Method, brainstorming sessions.

Interdisciplinary Links – Geography- Earthquakes are caused by the movement of plates. These zones are called seismic zones. Identifying earthquake hit zones of India and World.

English – It will improve the power of expression while explaining the activity and also vocabulary. Art–Neatness in making diagrams

HOD

Coordinator

Vice-Principal

Principal

➤ **ANNEXURE 15(A)**

Teacher will demonstrate activity – To observe whether a neutral body can be charged or not (Charging by friction – rubbing)

➤ **ANNEXURE 15(a)**

Students will perform the activity and will complete the given observation table.

S.No.	Objects Rubbed	Materials used for rubbing	Attracts/ does not attract pieces of paper	Charged/ not charged
1.	Refill	Polythene, woollen cloth		
2.	Balloon	Polythene, woollen cloth, dry hair		
3.	Eraser	Wool		
4.	Steels spoon	Polythene		

➤ **ANNEXURE15(B)**

Teacher will demonstrate activity – To prove two similar charged balloons repel each other

➤ **ANNEXURE15(b)**

Students will do it as a group activity. They will inflate two balloons and hang them in such a way that they do not touch each other. Now rub the balloons with a woollen cloth and bring them close to each other and record your observations.

➤ **ANNEXURE15(C)**

Teacher will demonstrate activity – To prove two similar charged ball pen refills repel each other

➤ **ANNEXURE15(c)**

Students will repeat the same activity with pen refills .Rub the refill with ploythene and bring them close to eachother and record your observations.

ANNEXURE 15(D)

Teacher will demonstrate activity – To prove a charged balloon and a charged ball pen refill having unlike charges attract each other

ANNEXURE 15(d)

Students will perform the activity.

Rub a refill with a polythene and bring it close to a balloon rubbed with a woollen cloth a record your observations.

Annexure 11 (E), 11 (e)
ACTIVITY NO. 15 – IS IT ATTRACTION OR REPULSION?

Subject	Science
Class	VIII
Chapter/Unit	Some Natural Phenomena
Topic	Make a charge detector
Time	30 minutes
Nature of Activity	Group

What will I learn (Learning Outcome)?

Will experimentally detect and measure the charge on the object and the nature of the charge.

Skills: Applying, Analyzing and Creating

What I have to do?

To construct a simple charge detector.

What do I require?

Cork, sewing needle, soda straw (drinking straw), cloth and a plastic ruler.

What do I need to know?

Some objects can be charged by rubbing with other objects. There are two kinds of charges — positive charge and negative charge.

➤ **Teacher's Activity**

Teacher will-

1. explain the importance of electroscope.
2. arrange the materials for the activity.
3. make pairs of the students and will explain the steps of the activity.
4. ensure that each participant of the pair performs the activity on his/her own.

How will I proceed?

➤ **Student's Activity**

1. Take a cork and fix a common sewing needle in it in such a way that its pointed end is in the upward direction.
2. Take a soda straw (drinking straw) and balance it on the needle such that it is free to rotate.
3. Take a plastic ruler and rub it with a cloth, thereby charging it.
4. Bring the charged plastic ruler near its end A or end B.
5. Record your observations. Repeat the activity with uncharged plastic ruler.
6. Charge the soda straw (drinking straw) by rubbing it with a cloth and again repeat the activity.

What have I observed?

S. No.	Situation	Straw moves away/ towards the plastic ruler
1.	When a charged plastic ruler touch the end A or B of the uncharged straw.	
2.	When an uncharged plastic ruler touch the end A or B of the uncharged straw.	
3.	When a charged plastic ruler touch the end A or B of the charged straw.	
4.	When an uncharged plastic ruler touch the end A or B of the charged straw.	

What have I learnt?

Like charges _____ and unlike charges _____ each other.

What am I curious to learn?

- Let us conduct another activity to observe the interaction of charges. - Open a water tap. Adjust the flow so that it forms a thin stream. Charge a refill. Bring it near the water stream. Observe what happens. Write a short report on the activity.
- Let us make a simple electroscope and to detect the charge on the objects.

Let me evaluate myself

1. How can charging take place when the substances are rubbed?

2. If a charged plastic straw is brought near another uncharged plastic straw, what will happen?

3. Plastic straws A and B are rubbed with dry cotton cloth. What will happen if they are brought near each other?

4. Explain why a charged balloon is repelled by another charged balloon whereas an uncharged balloon is attracted by another charged balloon?

5. Two electroscopes, one positively charged (X) and other negatively charged (Y) are connected with a copper wire as shown in the figure. In which direction will the charges will move?

