

Subject: Science

Activity - Save exhaustible resources

Chapter- Coal and Petroleum

Class: VIII

Duration: 1 day

Nature of the activity: Individual

Learning Outcome: Students will be able to analyse the amount of energy consumed by each appliance at home and hence calculate the total energy consumption and predict methods of energy conservation.

What we need to do?

To do a simplified energy audit at home to save exhaustible resources

What do we need?

Students Volunteers, Audit Table, Electrical appliances.

What you need to know?

The exhaustible resources are the resources which can be exhausted by the human activities such as oil, coal, natural gas, etc.

How do we proceed?

- **Teacher's activity:**

Teacher will guide the students how to perform the activity..

- **Student's activity:**

1) Go around your home and identify all the electrical and electronic installations like light bulbs, Fans, TV, Music player, AC, Washing Machine, Refrigerator, Geyser and other home appliances that you have.

2) Make a list of all the installations and appliances and enter in the table below. Also list down the number of installations or appliances in the table given below.

3) Now write the amount of electricity (in watts) that they use (it will be written on the product somewhere, you must search for it. **Be careful, only search for it if it is accessible, and when the device is completely off.**

Take help from your parents if necessary.

4) Calculate the total time in a day that you use that installation or appliance when it is in general use.

What do we observe?

Existing appliances at home	Number of such appliances	Existing wattage (watts/hr)	Usage Time in hrs	Existing energy consumption (Number of appliances x energy wattage x usage time)

What have you learnt?

According to the above activity we can calculate the energy consumption by _____.

What more can be done?

- No Load power consumption is the amount of electricity being consumed when a device is left in standby mode e.g. shutting the TV off using a remote control puts it to standby mode. The TV can be completely turned off by switching off the power button. People tend to leave a lot of devices on standby mode e.g. TV, DVD players, Music players, set-up boxes, computers, Wi-Fi etc. In the standby or no-load mode though the device is not being used it consumes 30% power or more.
- Create a new table using the format below to calculate the energy you loose at home by putting devices in standby mode.

Existing Appliances which consume no-load energy	Energy consumption when product is in use in Watts/hr	Standby consumption (assume 30% of energy consumption if you can't find this information) in Watts/hr	Standby Time in hrs	Energy lost in standby mode (standby Watts/hr x Numbers x hrs)

- Share the results of your work with your parents after completing the exercises and get the results sheet signed by them

- Make a plan and take a pledge with your parents and classmates to reduce your energy consumption to as low as possible.

EXTENDED LEARNING WORKSHEET:

1) What is climate change and what are the causes?

2) Do you think climate changes impacts us? If yes, in what way?

3) Do you think electricity consumed by us contributes to Climate Change? How?

4) Can we prevent climate change by changing our daily habits?

5) Have you heard of BEE Energy Star Rating²? Discuss the rating using information below.
