10

Household Equipment

10.1 Introduction

Rita is a young housewife who has a lot of things at home, which enables her to do the job better and with ease. Some of them are a mixer (called ‘mixie’ by most people), a washing machine, a sewing-machine, a refrigerator, etc. But half of these things are not working because Rita does not know how to take care of them or how to use them properly. In such a situation what should Rita do? She must not only get the things repaired but she must also learn how to use them correctly.

When you go to the market to buy any equipment, you are confronted with a wide range—in cost, in quality, in design, in material used, in the finishes used, etc. Some goods bear the standardization marks, some don’t. Some shopkeepers readily give you a guarantee but some say that a guarantee is not needed.

What do you do then? What are the points you must keep in mind while selecting the equipment that you need? How do you find out how to use the equipment and how to take care of it? You will find the answers to these and some other questions in this lesson.

10.2 Objectives

After reading this lesson, you will be able to:

- identify household equipments which can save time and energy;
- select appropriate equipment for the home;
- state the precautions to be taken while using the equipment;
take care of and maintain the equipment used in the home;

suggest simple measures for conservation of fuel, electricity and water.

10.3 Classification of Equipment

Appliances which help you in doing something are known as equipment. Some need electricity to operate and some do not. Hence, we can say we have two types of equipment.

(a) Electrical

(b) Non-electrical

(a) Electrical: Look around your home and try to identify some equipment which need electricity to work. Which are those items? Yes, you are right! These are items like toaster, mixie, immersion rod, iron, refrigerator, washing machine, geyser, etc. which cannot work without electricity.

(c) Non-electrical: There is another category of equipment which does not need electricity to run. This category consists of kitchen utensils and tools, sewing machine, cooking stove, solar cooker etc.

Efficient use of equipment includes their correct selection, operation and care, so that the homemaker can perform the maximum amount of work with the minimum of effort, in the shortest possible time.

Let us study these in detail now.

10.4 Electrical Equipment

Some of the items of electrical equipment we shall be studying in this chapter are: iron, toaster, mixie, refrigerator, immersion rod and geyser.

1. Iron

You all know how important an electric iron is. It helps us to press our clothes and give them a good shine.

Construction: An electric iron is one of the most useful appliances in our homes for ironing clothes. The heat supplied to the ironing surface or sole plate is used for ironing. The lower surface of the sole plate is smooth so that it moves easily over the fabric.

Iron may be automatic or non-automatic. The automatic iron has a thermostatic control which switches the iron off after a certain temperature, set by us when we switch on the iron. This helps us to raise or lower the temperature according to the cloth to be ironed e.g. cotton can take high temperature, whereas polyester and silk may not.
The advantage of an automatic iron is that it is safer than the non-automatic type as it cannot overheat and thus burn the clothes being pressed. The main disadvantage is that it costs more than the non-automatic type.

**Precautions while using**

1) Keep the bottom of the iron clean and shining. Can you guess why?  
   A clean iron moves easily over the clothes and irons them properly. If needed, wipe the bottom with a damp cloth only, iron with an unclean bottom will leave marks on the cloth.

2) Do not leave the iron on the cloth when the switch is still on for a very long time. This will burn the cloth.

3) Do not touch the iron with your hand to see if it is hot. Why? Because you can get an electric shock. Wait for the neon indicator-lamp to light up before starting ironing.

4) Use a three-pin plug to connect the iron to the mains. This ensures proper earthing of the equipment. Ensure that the cord is cotton wrapped and properly insulated.

### II Toaster

The toaster is a kind of equipment used to toast bread in order to make it crisp. It has two slots which can hold two or four slices of bread. The electrical element produces the heat needed to make the bread hot and crisp.

**Construction**

Like irons, toasters too may be automatic or non-automatic. The automatic models have a heat regulator which can be set at the desired temperature. At that temperature, the bread slices are released automatically and pop out of the toaster. In the non-automatic types you have to release the slices by pressing a knob.

The main advantage of the automatic model is that you are free to do something else after putting in the bread slices as you don’t have to watch over them constantly. There is no fear of their burning, either.

You can also toast the bread while the toaster is kept on the gas. But in this type of toaster, you have to change the side of the toaster when one side is done.

**Precautions while using**

1) Do not use a fork to remove the toast. Can you say why? Because you may get an electric shock since the coils are not insulated.

2) Do not place the bread with filling in the toaster. Why? Because the filling will melt and catch fire.
3) Do not drop or shake for this may damage the heating element.

4) Before cleaning, disconnect the toaster and food processor from the electric supply.

III Mixer or Mixie

The mixer grinder is an equipment which saves a lot of our time and labour. It can grind dry masala and make chutney or even lassi very quickly. The mixer has two basic functions:

a) dry grinding – this is to do dry grinding of masalas, coffee seeds, cereals like dalia etc.

b) wet grinding – this operation needs some amount of liquid like making chutneys, milk shakes, lassi, masala paste etc.

Construction

Mixer consists of a base which holds the motor and controls, a glass, plastic or steel food container that fits on the base and a cover for the container. Inside of the container, there are many sharp steel blades. Most models available today have many advanced functions of a food processor like kneading atta, slicing, shredding, mincing, chopping, etc. The cost of a mixie or food processor varies with the number of attachments and functions.

Precautions while using

1) Use the mixer with three-pin plug and at the correct wattage and voltage as indicated. Why is this necessary? This is necessary to avoid overheating of the motor.

2) Cover the blades with enough food in the bowl; otherwise, the grinding will not be adequate.

3) While the food should be enough to cover the blades, it should not fill more than ¾ of the bowl/jar; otherwise, the motor will be strained and may burn out.

4) If you are using ice, use crushed ice instead of whole pieces. Can you say why? As big pieces may break the blades.

5) For longer life of the mixer, do not run the motor continuously for long periods. Always give break after some time, and increase or decrease the speed gradually.

6) For removing sticky food clean by adding warm water, some detergent and turning on the blender.
IV. Refrigerator

You know what happens when you leave cooked food lying just like that. The food gets spoiled.

Can you say why food spoils? It spoils because germs like fungus and bacteria cause food spoilage. These germs which cause food spoilage can not live at low temperature.

Construction

The refrigerator (called a ‘fridge’ by most people) is a box like equipment which uses electricity to keep the temperature inside the box lower than the atmosphere outside. Food kept at such a low temperature thus does not spoil for a long time. The refrigerator also serves the purpose of giving us cold water and ice in summer.

By preserving food in the refrigerator, one can delay the growth of bacteria, keep food items fresh and thus save time and energy of the homemaker in meal preparation.

Precautions while using

1) Do not open the refrigerator door too often. Why? Because opening the door raises the temperature inside and the refrigerator becomes less efficient.

2) Leave some space at the back and sides for free circulation of air over the condenser coils at the back.

3) Never place the hot food inside the refrigerator as this raises its temperature and decreases its efficiency.

4) Defrost the freezer compartment periodically to remove the ice over the tubes. This is not needed in the frost free models available today.

5) Disconnect the plug before cleaning the refrigerator with soap and water, to avoid getting an electric shock.

6) Keep the refrigerator clean and dry. Wipe the outside surface as frequently as possible.

7) Clean the food spilled inside immediately and keep the shelves and walls free from moisture.

8) Empty the ice trays and wash before new ice is frozen.

Many people are unable to buy a refrigerator because it costs too much or because there may be no electricity where they are living. People who have these difficulties can use of “grameen sheetal”, which is a home-made refrigerator. Even you can make it easily at home.

Construction

The "grameen" sheetal consists of a small cupboard made of wire-mesh. This is kept covered with a jute cloth (taat) on all sides except the front. The ends of the jute cloth dip into bowls of water and hence remain wet constantly.
Can you tell the principle the "grameen sheetal" works on?

Yes, you are right. The principle is that of evaporation. The water from the wet jute cloth keeps evaporating and this evaporation produces cooling. This keeps of temperature inside the wire-cupboard lower than the temperature outside. Hence, food placed inside this home-made “refrigerator” does not spoil easily.

V Immersion Rod

You all know that in winter we need hot water for our bath. We can heat the water on the gas stove or on a coal ‘angithi’. But there is a quicker way of getting hot bath-water, and that is, to use an immersion rod.

An immersion rod is made up of an element which becomes hot when electric current passes through it. When we put this immersion rod in water, it heats up the water.

Precautions while using

1) Do not touch the water to test how hot it is, when the immersion rod is switched on. Can you tell why?

2) Always use a three pin plug so that the equipment is properly earthed. Do you remember why this is very important?

3) Ensure that the wire is not cut or bare of its insulation covering at any place.

4) Use wooden board to hang your immersion rod on. This will reduce the chance of an electric shock. Do you remember how someone suffering from electric shock must be treated?

5) Ensure that a storage geyser has a steam vent pipe for letting out excess steam.

INTEXT QUESTIONS 10.1

1. Fill in the blanks in the following:
   a) Irons are of two types ………………… and …………………
   b) …………………. Irons are safer to use.
   c) A toaster is used to ………………… bread and make it ………………….
   d) A mixer can be used to do ……………… or ………………. grinding.
   e) An immersion rod uses ………………… to heat water.
   f) For heating water ………………… and ……………… can be used.

2. State whether the following statements are true or false:
   a) You can use your finger to test how hot an iron is.
   b) The bowl of a mixer may be filled upto the top.
c) Keeping food in a refrigerator delays spoilage.

d) The ends of the jute cloth on the "grameen sheetal" should be dipped in water only in the afternoons.

e) A three pin plug is necessary for all electrical equipment.

f) Steam vent pipe in the geyser helps to prevent explosion.

3. Give brief one line answer for the following:

a) State the principle the "grameen sheetal" works on.

b) Describe briefly reason of using the three pin plug in electrical equipment.

c) Why does the food not spoil in a refrigerator?

d) State the reason for using crushed ice instead of whole pieces in a mixer.

e) Why is it important to keep the bottom of the iron clean?

10.5 Non-Electrical Equipment

In the previous section, you have learnt about a few equipments we use in the house, which need electricity to work. Apart from these, there are many other things you use which do not require any electricity to work. Some of these are; cooking stoves, kitchen tools and pans, the sewing machine, etc.

Let us study these in detail now.

I. Cooking-stove

We all use a cooking-stove to cook our food. Various types of stoves are in use today – the kerosene stove (which may be the wick type or the pressure type), the gas stove, the coal type, smokeless chullah or the solar-cooker. Every cooker has its own advantages and one must select the type best suited to one’s needs.

1. Wick stove

A wick stove has an oil container or tank at its bottom. Wicks made of loosely twisted cotton threads partly dip into this oil. These wicks can be raised or lowered with the help of a lever. There are three cylinders around these wicks. The cylinder in the middle has some holes which allow the air to go near the wicks. The outer cylinder is the chimney. There should be sufficient oil in the tank to ensure efficient blue flame. To extinguish the flame, the lever is turned to the extreme right and the burner is removed.

Precautions while using

1) Fill the oil tank only upto 2/3 of its full level. Any oil spilt outside the tank must be wiped off with a newspaper.
2) Do not put oil in the tank while the stove is still burning. Can you tell why this is a dangerous thing to do?

3) Keep the wicks raised when you light them, but lower them as soon as they have been lit. Put back the top cylinder or the chimney in its place.

4) Keep the stove at a convenient place where there is no danger of your clothes or any other material catching fire.

2. Pressure-stove

Pressure stove is an improvement over the wick stoves. The pressure stove is a kerosene stove which has a pressure oil tank instead of an ordinary oil tank. There is a spirit cup at the centre of the stove and a nozzle on top of it. The tank is fitted with a pump, a lid and an air key. When air is pumped into the oil tank, it creates a high pressure inside which, forces the oil out through the nozzle in the form of vapour. This oil vapour mixes with air and burns to give a clear blue flame. Pressure stove consume less kerosene than the wick stove.

Precautions while using

1) Fill only two-thirds of the tank with oil and close the cap tightly.

2) Clean the nozzle daily with a clean pin in order to get a clear blue flame. A dirty or blocked nozzle gives a yellow flame.

3) Take care not to pump in too much air as the tank can burst.

4) When you want to turn off the stove, open the valve near the bottom of the stove and leave it open.

3. Cooking Gas Stove

Now-a-days many people have started to use a stove in which cooking gas is used. This gas is actually liquefied petroleum gas or L.P.G. Cooking gas comes in cylinders which are delivered and fitted to the burners by means of rubber tubing. The burner head has a number of small holes around it, to provide air for burning. There is a valve on top of the cylinder, which when opened allows the gas to move from the cylinder to the burner.

Gas stoves may have one, two or four burners.

Precautions while using

1) Keep all parts of the stove clean. Clogged pores on the burner must be cleaned regularly.

2) Use the smaller burner when you need less heat. This saves gas or adjust the flame by adjusting the regulator on the appliance.
3) Never use an old and cracked tube to connect the burner to the cylinder as this may lead to accidents.

4) Prevent accidents by turning off the cylinder knob at night after finishing all work in the kitchen, so that no gas leaks out.

4. Solar Cooker

Since both kerosene oil and gas cost money, an effort has been made to utilize the heat produced by the sun.

A box type solar cooker has been developed which can be used for boiling, baking and roasting. It consists of a square metallic box with a mirror fixed on the inner side of the lid. By keeping the lid open at a certain angle, this mirror is used to focus sun rays on the food kept in the round containers placed in the box.

The Government of India gives a subsidy of Rs. 150/ to anyone who wishes to buy a solar cooker. Community solar cookers for cooking meals for groups of people have also been developed.

The main advantage of the solar cooker is that it uses solar energy which is free of cost; it also keeps the food warm so that one does not have to heat it before eating.

5. Smokeless Chullah

Many people still use a coal-burning ‘angithi’ or a wood-burning ‘chullah’ for cooking food. These chullahs give off smoke which not only makes the kitchen uncomfortable to work in but is also very harmful for health.

Apart from these disadvantages, the open chullahs consume more fuel, and the smoke discolours and damages the walls.

This smoke nuisance can be avoided by the use of a chimney placed over the chullah which takes the smoke safely out of the kitchen. Thus making the chullah smokeless.

The main advantage of using a smokeless chullah is that since the chullah is covered, less fuel is consumed. Besides, there is no risk to anyone’s health due to smoke. The smokeless chullah is easy to build and is fuel efficient too.

II. Kitchen Tools

1. Graters

When you wish to make carrot halwa or you want to mince onions, ginger or garlic to make a curry, how do you do it?

Yes, you are right, you use a grater. A grater may be flat, square, round or cylindrical in shape. It may be made of aluminum, stainless steel or iron, with holes on it. Some holes are small, some are bigs for fine or coarse grating. Now-a-days, graters made of fiberglass are also available in the market.
You must be very careful while using a grater as the holes have sharp edges and may cut your hand. The grater must be washed and dried before storing.

2. **Peeler**

   You all need to peel vegetables and one of the quickest ways of doing this is to use a peeler.

   A peeler is a sharp instrument having a blade and a handle which quickly and efficiently removes the peel from fruits and vegetables without removing any part of the “flesh”. One side of the blade may be serrated.

3. **Beater**

   A beater is an instrument used to beat up food items. An egg beater has a wire spiral that works like a spring. This is known as whisk type of beater, and is chiefly used for introducing air into egg. Beating with a whisk takes longer and requires more effort. When it is pressed down on the raw egg in the bowl or pot or pan, and then released, the spring action mixes the white and the yellow of the egg thoroughly and also brings in air into the mixture so that it becomes fluffy.

   Another type of beater, also called ‘rai’, is used to beat up curd, to make raita or lassi. If the curd is beaten up for a long time, the butter separates out and may be removed. This beater is more sturdy. It has thin, sharp blades which fit close to the bottom of the bowl.

   All the things done by a beater, as described above can now also be done in the liquidizer of a mixer. Beaters are of more use in homes which do not have a mixer.

4. **Pressure Cooker**

   You are all familiar with the pressure cooker. Pressure cookers are pans made of Aluminum or stainless steel. They are available in different sizes. Food takes very little time to get cooked in a pressure cooker. You have already learnt about this in the lesson on ‘Methods of Cooking Food’. A safety device on the cover of the pressure cooker is so designed that it blows out if the pressure becomes too high. A rubber gasket on the lid releases excess pressure if the cooker goes dry.

   **Precautions while using**

   1) The hole from where the steam comes out must not be blocked; otherwise the pressure cooker can burst.

   2) Do not lift the weight to let the steam out of the pressure cooker as it can burn your hand.

      Can you tell what is the correct method of cooling the pressure cooker? Yes, you must hold the pressure cooker in the running water under a tap.
3) The gasket must be regularly checked, and promptly replaced if it becomes loose.

5. Non-Stick Pans

There is a wide range and variety of pots and pans that are used in a kitchen. One type is the non-stick pans which have been available in the market for a long time now.

As the name indicates, food does not stick to the pan while cooking. The inside of the pan is coated with a special black material called ‘teflon’. Teflon does not allow food to stick to the pan while cooking.

Can you tell what is the advantage of using Teflon?

Since the food does not stick to the pan, you have to put little or no oil at all. Hence, the food cooked is more healthy, specially for the people who are fat or suffer from heart diseases.

Use wooden a spoon for stirring the food cooked in the pan to avoid scratching of Teflon finish. You have to be extremely careful when you wash the non-stick pans. If you scrub them hard, the Teflon polish may come off. So you must use a soft sponge and a mild soapy solution for cleaning non-stick pans.

**ACTIVITY**

Make a survey of 5 families in your neighbourhood. Ask the homemakers to list down the non-electrical kitchen equipments possessed by them, and also the way, they care and maintain them. From the results suggest ways of improving, if any.

<table>
<thead>
<tr>
<th>S.No</th>
<th>Homemakers</th>
<th>List of Items</th>
<th>Way of maintenance</th>
<th>Remarks, if any</th>
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Which of the five home makers has the best maintained equipment?

Conclusion

**III Sewing Machine**

You all must have seen ladies do some amount of stitching at home. Long ago, all stitching used to be done by hand, which took a long time, and the stitching was not very durable either. But now-a-days, the sewing machine is used in most
houses. Apart from simple stitching, the sewing machine is also used to mend torn clothes, to make pretty appliqué designs, to sew on buttons and zips, to make buttonholes, to give a neat finish to edges, etc. The latest models of these machines perform different functions. The machines are now also available in motorized models. These are very fast and do the work quickly and efficiently, but are also very much costlier.

Hence, the choice of a sewing machine will depend upon what it is to be used for. If one wants to use the machines to start professional tailoring, then one can buy a complicated, motorized model with all the various attachments. But if one wants to use the machines only for light work at home, then a hand/foot driven model will serve the purpose quite well.

Precautions while using

1) In the case of a motorized model, use the machine at a constant speed in order to avoid straining the motor.

2) Remove the cloth fibres with a soft cloth.

3) Oil the machine regularly at intervals.

4) When not in use, keep a piece of cloth under the presser foot, with the needle down, through the cloth.

INTEXT QUESTIONS 10.2

1. Match the statements in Column I with those in Column II.

<table>
<thead>
<tr>
<th>Column I</th>
<th>Column II</th>
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<tbody>
<tr>
<td>i) A smokeless chullah</td>
<td>a) the heat energy from the sun to cook food.</td>
</tr>
<tr>
<td>ii) In a pressure stove</td>
<td>b) helps to save time and energy.</td>
</tr>
<tr>
<td>iii) A pressure cooker</td>
<td>c) have a Teflon finish.</td>
</tr>
<tr>
<td>iv) The solar-cooker uses</td>
<td>d) can be lighted inside a room.</td>
</tr>
<tr>
<td>v) Non-stick pans</td>
<td>e) too much air should not be pumped in.</td>
</tr>
</tbody>
</table>

2. State whether the following statements are True or False

a) Cooking with gas saves time and energy.

b) In case the water dries up, the rubber gasket of the pressure cooker releases the steam.

c) Once the cooking is over, the pressure cooler has to be cooked before opening the lid.

d) Simple cooker needs constant attention.
e) The food cooked in the non-stick pan is good for heart patients.

### 10.6 Points to be Considered During

**SELECTION OF EQUIPMENT**

You have studied a few equipment that are generally used at home. You have also learnt that all these equipment have a variety of features and are available in different models.

So, when you go to the market to buy any item or equipment, you must be aware of what points to consider while making your selection. The criteria for selection of one equipment varies from another. Let us discuss some of them.

1. The equipment must save your time, money and energy. When you are buying an item, see that it is useful to you in terms of saving your time and energy as well as your money.

   For example, a pressure cooker cooks food faster; hence you save time and money too, because less fuel is consumed.

   A sharp knife cuts fruits and vegetables easily; hence you save your energy. Fruits and vegetables can be cut with a blunt knife also but it will need greater energy.

2. The equipment material should be easy to clean. The equipment bought should be made of good material which is easy to wash, clean and maintain.

   For example, iron pots are difficult to clean whereas stainless steel utensils are cleaned very easily.

3. The equipment must be safe. Whatever you buy must be absolutely safe to use at home. Do you remember which mark of standardization is used to guarantee the safety of electrical equipment?

   ISI marked equipment is safe to use because it is properly checked and is of good quality. You must ensure that all electrical equipment that you buy carries this mark. Equipment without this certification may be cheaper but is not safe to use.

4. The equipment must carry a guarantee of service. Guarantee of service means that the manufacturer takes responsibility for a certain number of years for the working of that equipment. If any defect occurs during that period, the manufacturer will repair or replace the equipment free of cost. For example, manufacturers of refrigerators give a guarantee of 5 years, and manufacturers of ceiling fans give a guarantee of 7 years. This means that for 5/7 years your refrigerator/fan should give you trouble free service.

   It is very important for you to ensure that all equipment you buy, specially the

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| Guarantee: A promise to answer for the performance in case of a failure. |
| Standardized Products: Those products which meet minimum standards of safety durability and performance. |
costly equipment, should carry a guarantee of service. Ask the shopkeepers about those parts of the equipment which carry guarantee so that you are not cheated later. At the time of buying, see that the guarantee card is duly filled in and signed and stamped with the seal of the retailer/shopkeeper from whom you are buying the equipment.

5. Cost of the equipment. Whenever you go to the market, what is the first thing that you want to know? Yes, it is the cost of the item.

While some equipment which are simple do not cost too much, there are some which have more complicated parts or attachments which are quite costly. When you are buying such equipment you must stop and think.

For example, a refrigerator is very costly whereas a "grameen sheetal" is much cheaper. But when used, a "grameen sheetal" will not be able to do what a refrigerator can. You can get ice, keep food and water cool, make ice-creams, etc., in a refrigerator but not in a grameen sheetal.

A grameen sheetal will last for a few years only whereas the refrigerator will last for many years.

Hence, after seeing the advantages, provided one can afford it, one would be quite right in selecting the costlier refrigerator. Similarly, it would not be advisable for a housewife to buy a complicated and expensive model of sewing machine when she needs to do only simple repair work at home.

10.7 How to use Equipment Safely

All the equipment that you have studied, and many more are used in the home to help us to do our work efficiently and quickly. The use of these equipment is, no doubt, beneficial for everyone in terms of the time, labour and energy that are saved, but at the same time, there are a few precautions everyone must observe while using them.

Can you say why it is necessary to take precautions?

Because if we are careless, serious accidents can occur which can even endanger a person’s life.

Here are some points which you must keep in mind while using any equipment.

1) Read the instructions given with the equipment and follow them.
2) See that the wire and plug of all electrical equipment are in proper order and there is no leakage of electricity.
3) Keep all electrical equipment away from water taps. Never wash these equipments with water unless the instructions say so.

Can you tell why?
4) Do not touch any electrical equipment with wet hands or feet.
5) If you get even a small electric shock from any equipment, do not use it again till it has been repaired.

6) When you plug in the electrical equipment, see that its wire does not come in your way when you walk.
   Can you tell why? Because you may trip over it and fall.

7) Check to see that proper fuses are there so that there is very little chance of a fire due to an electric short circuit. A fuse cuts off supply of electricity to the equipment the moment anything goes wrong.

8) Do not wear nylon clothes while working in the kitchen. Why is it important to ensure this? Because, nylon catches fire easily and melts and sticks to the skin which causes very deep burns.

9) Have bakelite or wooden handles with which pans can be held. In case there are no handles, use a napkin or tongs to remove them from the stove or chullah. Never use your own dupatta or sari pallu for this purpose. Can you explain why?

INTEXT QUESTIONS 10.3

Fill in the words using the most suitable word:

1. Read all the ………………… before using any equipment.

2. The ……………. and the ………………. must be kept in good condition so that no current leaks.

3. Touching an electrical equipments with wet hands may give you a …………………

4. Women should not wear …………………. clothes while cooking.

5. When a stove is burning there should be no ………………. on the floor.

10.8 Conservation of Energy, Fuel and Water at Home

You have learnt how to select and use household equipment wisely at home. There are a few things you need to know about conserving important resources like energy, fuel and water. Let us find out how we can do it.

I. ELECTRICITY

You know that light is very important for all of us in our homes. Lighting is provided naturally, i.e., through sun and by the use of electric bulbs/tubes. Electricity is a form of energy. This is used in the home in two ways:

(1) To produce heat or light - using iron, toaster, immersion rod and light bulbs.
(2) To produce movement by means of a motor - running electrical appliances like washing machine, mixer, grinder, etc.

We have to pay for the electricity used, which is very expensive. So you have to be very careful while using electricity at home. You can conserve electricity by following very simple steps:

1) Switch off all the lights and fans when you leave a room.
2) Use a low wattage bulb for your bathrooms, toilets, gardens, etc.
3) Minimise the use of geysers, washing machines, mixer and grinder, etc.
4) Keep your electrical appliances in good working condition. If any part is defective, get it repaired immediately.

**ACTIVITY**

Follow the tips given for conserving electricity at home for a month. Compare the electricity bill for the month with last month's when you did not use the methods of conservation. Do you find a difference?

**II. FUEL**

Besides electricity, you also need to conserve fuel used at home. How can you do this?

Follow the simple tips given below:-

1) Clean the burner of your stove (gas/pressure/wick) regularly.
2) Before cooking, allow frozen food to come to room temperature, as it will use less fuel.
3) Soak pulses, dals and rice for sometime before cooking.
4) Always use a pressure cooker, instead of an open pan as it will use less fuel.
5) If you are using the pressure cooker, lower the flame after the pressure is built in the cooker.

**ACTIVITY**

1. Cook 250 gm of any dal separately in the pressure cooker and an ordinary pan. Note down the time required for cooking both. Try to estimate amount of fuel consumed in each case.

**III. WATER**

Everyone is familiar with water problems today. It is very essential that not a single drop of water is wasted. Do you know how can you do this?

Yes, there are a number of ways by which water can be conserved.
1. Water used for washing clothes can be used for watering the plants in the garden or for cleaning the house especially the staircase and verandah.

2. While brushing your teeth take water in a mug, rather than using a running tap.

3. Take water in vessel for washing vegetables also rather than washing them under running water.

4. Use a mug for watering the plants instead of using a pipe.

5. While filling the water cooler, do stand there, otherwise the water will overflow.

**ACTIVITY**

One day while washing clothes, do not throw away the water. Collect it. Use it for washing the staircase. Try to estimate the amount of water you will save if you do this for a week.

**INTEXT QUESTIONS 10.4**

1. What do you understand by ‘conservation’ of energy at home? Explain with examples.

2. What points would you keep in mind for conserving electricity at home.

3. Write ‘True’ and ‘False’ for the statements given below.
   
   (a) Pulses, dals and rice should never be soaked before cooking.
   
   (b) Pressure cooker helps in conserving fuel while cooking.
   
   (c) All frozen food should be brought to the room temp. before cooking.
   
   (d) While cooking food in the pressure pan, never put the lid on the vessel.
   
   (e) A high voltage bulb should be used in bathrooms and toilets.
   
   (f) Thermostatic control is the electrical gadgets helps in conserving energy.
10.9 What You Have Learnt

In order to make it easier for you to remember, here are the main points of the lesson:

HOUSE HOLD EQUIPMENT

Classified as

- ELECTRICAL
  - IRON
    - Automatic
    - Non-automatic
  - TOASTER
    - Automatic
    - Non-automatic
  - MIXER
  - REFRIGERATOR
  - IMMERSION ROD
  - GEYSER

- NON-ELECTRICAL
  - COOKING STOVE
    - wick type
    - pressure type
  - gas burner
  - solar cooker
  - smokeless chullah
  - peeler
  - grater
  - beater
  - Pressure cooker
  - Non-stick pans
  - Motorized
  - Hand/foot-driven

10.10 Terminal Exercise

1. What are labour saving devices?
2. Make a list of the type of equipment in your kitchen and list their functions.
3. What points will you keep in mind while using electrical equipment?
4. What type of refrigerator you would recommend for a family living in a rural area where these no electricity & why?
5. List the factors to be considered in the selection of household equipment.
6. Which of the following actions are unsafe and why?
   a) An immersion rod is being used to heat water in a bucket. You put your hand in the water to test how hot it is.
b) Wearing nylon clothes while working in the kitchen.
c) Holding the stove in the hand while it is still burning.
d) Wiping away the excess oil on the floor after filling the stove.
e) Pumping too much air into a pressure stove.
f) Removing a cracked tube from the gas cylinder.
g) Testing the temperature of an iron with your finger.
h) Using an old tube to connect the gas cylinder to the gas stove.
i) Using nylon scrubbers to wash non-stick pans.
j) Forcing the steam out of a pressure cooker by lifting its weight.
k) Disconnect the electric supply, before touching the pipes.

10.11 Answers to Intext Questions

10.1

1. a) automatic, non-automatic.
c) automatic.
d) Toast, crisp.
e) Dry, wet.
f) Electricity.
g) An immersion rod and storage heater.
2. a) F  b) F  c) T  d) F  e) T  f) T
3. a) Grameen sheetal works on the principle of Evaporation.
b) To ensure proper earthing.
c) Due to low temperature germs are killed.
d) Big pieces may break the blades.
e) For proper movement over the clothes.

10.2

1. i) d,  ii) e,  iii) b,  iv) a,  v) c.
2. a) T  b) T  c) T  d) T  e) F

10.3

1. instructions  2. plug, wire
3. shock  4. nylon
5. oil.

10.4

3. (a) F  (b) T  (c) T  (d) F  (e) F  (f) T