Overview

Do you update your medical information on a regular basis and keep it in a convenient location? Are you prepared to handle an electrical fire should one start in your home? Unfortunately, many people don’t find out just how unprepared they are until an emergency occurs. Yet you can do many things beforehand to protect yourself against the unforeseen. The goal of this course is to give you the information you need to prepare yourself, your family, and your home in case emergency strikes.

This course suggests ways to better prepare for unexpected events. The first lesson outlines preliminary steps in emergency planning. Lesson 2 describes home safeguards and modifications. Lesson 3 discusses fire preparedness. While Lesson 4 focuses on general disaster planning, Lessons 5 and 6 address specific disasters. The final lesson examines weather emergencies in terms of extreme heat and cold. You will also find helpful information in the Resource List, which is included with your course materials.
This course presents safety guidelines based on U.S. standards. If you do not live in the United States, Hadley urges you to contact your local authorities for additional information. In addition, note that this course does not provide instructions on how to administer first aid. You may be able to obtain training in first aid and cardiopulmonary resuscitation (CPR) by contacting the American Red Cross chapter in your area or your local community and government offices.

No prerequisites are necessary before starting this course. To complete the course, however, you need the materials that The Hadley School for the Blind has provided and writing materials in the medium of your choice. If you are taking the audiocassette version of this course, you also need your own tape recorder.

The self-test that follows each lesson is for your personal development only. Do not mail your answers to your Hadley instructor. Rather, check your comprehension by comparing your answers with those provided.

You are required, however, to submit the assignment that concludes each lesson. If you mail your assignments, send them as Free Matter for the Blind.
provided they are in large print (14 point or larger) or braille, or on cassette or computer disk. Mailing labels are provided for your convenience. The enclosed contact information card indicates your instructor’s fax number and email address in case you prefer to send your assignments electronically.
Lesson 5: Thunderstorms, Blackouts, and Floods

Lesson 1 outlined basic emergency preparations. Lesson 2 suggested ways to eliminate safety hazards in your home. Lesson 3 focused on potentially devastating fire emergencies. Lesson 4 described a disaster plan. Of course, different disasters may call for different approaches. Therefore, this lesson and the next examine specific disasters.

In this lesson, you will examine what to do in the event of thunderstorms, blackouts, and floods. The information presents preparation as well as response and recovery guidelines, where applicable. Familiarizing yourself with the information in this lesson can help your family prepare for these disasters.

Objectives

After completing this lesson, you will be able to suggest ways to handle such disasters as
a. severe thunderstorms
b. blackouts  
c. floods

**Severe Thunderstorms**

Some thunderstorms are over in a few minutes; others last for hours. A few come on suddenly; many give you advance warning. In any case, severe thunderstorms bring with them very real dangers. This section focuses primarily on the dangers of lightning during thunderstorms. The next two sections cover disasters that sometimes follow these storms, namely blackouts and floods.

**Preparation**

First of all, be mindful of the signs of a thunderstorm that may bring lightning, especially if you live in a storm-prone area. Weather clues include darkening skies, a sudden drop in temperature, flashes of light, or a rising wind. Listen for thunder, especially if you are outdoors. If you begin to suspect an approaching thunderstorm, tune in to the weather reports on your radio or TV. If these reports confirm that a thunderstorm is headed your way, postpone outdoor activities. The reports may also warn you of a greater danger approaching, such as a tornado or hurricane.
It is true that you can gauge the proximity of a storm by counting the seconds between the flash of lightning and its accompanying thunderclap. The closer together the two are, the nearer the thunderstorm. Nevertheless, don’t delay going inside if you suspect for any reason that a thunderstorm is approaching. Lightning can strike even if you barely hear the rumble of thunder. It doesn’t even have to be raining where you are. Did you know that lightning can travel to points 10 miles (16 km) away from the rainfall? Don’t let anyone go back outside during the storm unless absolutely necessary.

**Response and Recovery**

When you are inside riding out a thunderstorm, stay away from fireplaces, as well as from open doors and windows. Avoid using the telephone, unless it’s wireless. If lightning strikes outside electrical or phone lines, it can travel along the wire and give you a shock through the inside equipment. This can be very dangerous and can even result in electrocution. Unplug your appliances, especially TV sets as these are particularly dangerous.
Lightning can also come in through water pipes. So stay away from running water as much as possible. Avoid taking a bath or shower, or even washing your hands. Incidentally, polyvinyl chloride (PVC) piping lessens this risk. Finally, forget the old wives’ tale about lightning never striking the same place twice. Lightning has been known to strike the same place, or the same person, more often than that.

If you are caught outside, remember that water, metal, or anything tall tends to attract lightning. Because water is such an excellent conductor of electricity, stay away from any body of water, including swimming pools, ponds, or lakes. Put some distance between yourself and any metal object that could be a conductor. This includes large metal items like a flagpole, utility pole, bicycle, tractor, or lawnmower. Something you’re carrying can also become a conductor—a shovel, an umbrella, and even a camera. Also avoid metal fences, clotheslines, and the like. Remember too that lightning favors tall objects, whether metal or not. Keep this in mind, and try to stay away from tall objects—including trees. People sometimes receive a significant shock when standing under a tree. Lightning can strike the tree, and the
electricity courses down through the tree’s root system.

Avoid becoming a target for lightning, and always remember the “tallest object in an open area” rule. Stay away from hilltops and trees. If you live on a farm or a very large property, for example, you may not have time to safely reach your house before a storm hits. Head for a hardtop car—\textit{not} a convertible—if one is nearby. Next to your home, a hardtop car may be the safest place, unless it is parked under trees that could fall on it.

Somewhat conversely, however, avoid open fields, where \textit{you} would become the tallest object. Can you seek shelter in some sort of structure or building? This is another option as long as it is not a small building (e.g., a shed) that stands alone in a clearing. You could also take shelter in a depression in the ground. But don’t lie flat, especially if the ground is wet and becomes a conductor. In fact, people are often struck by lightning indirectly, through the ground. Assume a “lightning” position, one that does not make you a target, but minimizes your contact with the ground. For instance, kneel or squat on the ground. Lower your
head. Don’t let your hands touch the ground; instead, rest them on your knees. Cover your ears with your hands to lessen the chance of hearing damage from the thunder.

If you feel your skin tingling or your hair standing on end when outdoors, this could mean that lightning is about to strike. Get to the ground and assume the “lightning” position immediately. If you are with other people, put space between you (about 15 ft or 4.5 m), if possible. Lightning that strikes one person can actually spread to others who are nearby.

Lightning is unpredictable, and it sometimes causes a fire. Therefore, protect your house as much as possible. Lesson 3 stated that it is sometimes appropriate to have lightning rods on your home. An example would be if you live in a rural area and your house sits high up in relation to the surrounding land and structures. Being so situated, your house may attract lightning. If it does, the lightning rods will channel that lightning harmlessly into the ground. Similarly, if your house has TV antennas, be sure they are insulated and grounded.
Does each family member know what to do if someone is struck by lightning? The first step is to call EMS as quickly as possible. Be prepared to do rescue breathing or CPR, if you have the proper training. You can provide initial treatment for burns, if necessary, but make sure that EMS is on its way.

This section presented facts about lightning dangers that typically accompany thunderstorms. Each year, lightning kills more people than do floods, hurricanes, or tornadoes. Consequently, it is essential that you teach your family members how to protect themselves and others.

**Blackouts**

A blackout often occurs as a result of a severe thunderstorm. This failure in electrical power is not a direct safety threat, yet it does involve certain risks. If you have low vision, for example, the moment the blackout hits may be dangerously disorienting. Don’t move until your eyes have adjusted to the dark. As with all disasters, knowing what to do may be your best protection.
Response and Recovery

If the blackout appears to be lasting awhile, turn your attention first to the refrigerator and freezer. Refrain from using these appliances, because opening and closing the doors will shorten the lives of perishables. If the weather is hot, cover the appliances with a blanket to provide an extra layer of insulation.

Next turn off or unplug all electrical appliances except one. Otherwise the surge that often follows the return of power might damage the appliances and even cause a fire. You can also prevent this from happening by using surge protectors. It’s important to give the electrical system a chance to stabilize after power is restored. Therefore, wait a half hour before turning your appliances back on.

Consider the needs of each family member. Some precautions are necessary depending on individual circumstances. If electricity is needed for life-support or other vital equipment, call the fire department. Give them plenty of notice so they can supply an emergency generator.

Blackouts often strike without warning. If you live in a high-rise building and become trapped in an elevator,
don’t panic. Remain calm and press the alarm button intermittently. Even if you cannot hear the alarm, it may be audible elsewhere. Unless you can hear people outside, yelling may be a waste of energy.

If the blackout persists, will you have to prepare meals using alternative cooking implements? Use caution when cooking indoors. Remember that camp stoves (e.g., kerosene) and small grills require a lot of ventilation and are generally unsafe for indoor use. Similarly, candles and open flames are fire hazards. Place your cooking appliance only where it won’t be a fire risk. Check the area for ventilation before you start, so that fumes do not become an issue.

In some blackout situations, downed electrical lines create a serious hazard. Your first step is to call EMS without delay. Remind everyone in your household to stay indoors, if possible. Always play it safe: Treat any downed line as if it is live.

Despite the best of plans, however, you or someone else may be caught outdoors when a power line comes down. Include the following safeguards when conducting your disaster drills. Never touch an object that touches a downed line. If someone who is in
contact with or near a downed line needs help, wait for EMS to perform the rescue.

If waiting for EMS is not an option, you may want to try the rescue yourself. This requires utmost caution, however! Do not touch the victim as electricity will pass through the victim right into you. Stand on a dry object such as a wooden board or rubber car mat. Push the wire away from the victim with a dry pole or stick to free the victim. Never touch the wire with anything that is wet or metallic.

This section outlined what to do when blackouts occur. Thunderstorms may be the most common cause for blackouts, but remember that other disasters can have the same results. So discuss the possibility of blackouts with your family members so they know how to handle such events in a safe, capable manner.

**Floods**

Floods are among the most common and costly natural disasters. They can occur from prolonged rains, broken mains, and other events. Perhaps you live near a large body of water that periodically floods. You hardly can prevent flooding, but you can make certain changes to minimize damage to your property. Knowing how to
prepare for and recover from floods is your best protection.

**Preparation**

Your first step is to research the flood risk in your area. Your local district office of the U.S. Army Corps of Engineers could help you in this regard. In addition, another organization offers flood hazard maps and related data. Consult your Resource List to obtain contact information for the Federal Emergency Management Agency. Through FEMA, you can obtain the flood insurance risk map (FIRM) for your area. To more accurately assess your particular risk, find out the elevation of your property. Do so by checking your local phone listings for a department of buildings or similar government agency.

Many high-risk areas have requirements that homeowners and building contractors need to meet. Does your property meet local building codes and ordinances? These could mandate precautionary modifications because of the high flood risk. For example, the requirements might suggest that you raise your furnace, electrical panel, and water heater on cement blocks. Also, your local government might
allow you to build levees or flood walls on your property.

A construction professional could suggest additional safety measures. By comparing services and fees as well as checking references, you can usually find a trustworthy professional. A contractor could apply waterproofing compounds on basement walls to seal cracks. If possible, have check valves installed in building sewer traps to keep floodwater from backing up into your drains. If this isn’t an option, stock up on large corks or stoppers. Use these to plug up showers, tubs, and basins when a flood is imminent.

Despite these precautions, be prepared to protect your home and family when the possibility of flooding exists. Always stay abreast of current weather conditions. For example, if it has been raining hard for several hours or steadily for several days, turn on your radio or TV. Listen for news about possible flooding. The National Oceanic and Atmospheric Administration (NOAA) provides information on flooding conditions to local broadcasting stations. But did you know that you can buy a weather radio that broadcasts only this type of information?
Broadcasts offer a wealth of useful information, including which bodies of water are involved as well as when and where flooding is likely to begin. They can also predict the severity of the flooding—mild, moderate, or severe. The National Weather Service and public safety agencies also provide reports on flooding in progress.

As mentioned in the previous lesson, you may hear the terms *watch* and *warning*. A flood watch is issued when conditions are such that flooding is possible. A flood warning, on the other hand, indicates a far greater likelihood of flooding, or that flooding is actually occurring. When the news broadcasts a warning, be ready to activate your disaster plan at a moment’s notice.

Stay alert for a worsening of conditions. Generally, you needn’t leave your home unless authorities tell you to. On the other hand, you may realize that the flood is heading quickly in your direction. Do prepare for evacuation, and keep children and pets safely inside. Bring in or secure outdoor items that might be swept toward your house, possibly damaging windows or
glass doors. Now’s the time to be ready with your disaster plan, as outlined in Lesson 4.

Response and Recovery

Once the water recedes, take stock of your situation. If the damage is extensive, you may want to note details in case financial relief becomes available through government agencies.

Besides assessing the damage, concern yourself with health issues. Do not use supplies that have become contaminated by floodwaters. If necessary, disinfect all dishes, glassware, utensils, and other cooking implements. This needs to be done thoroughly by using boiling water, detergent, and bleach.

In addition, caution is required for homes with well and septic systems. What special decontamination procedures might be required before using such systems? Contact your public health officials, and ask for guidance on decontamination procedures following a disaster.

This section focused on flooding. It outlined the guidelines that enable you to protect your family and property before and after such a disaster. As in all
emergency situations, you hardly can control every aspect of the situation. You can, however, prepare a comprehensive disaster plan that includes floods.

**Summary**

Most people acknowledge the need for disaster planning. But how many actually do something about it? Don’t let a disaster catch you unprepared. Make sure that you and all your family members contribute to the necessary preparations. Be sure to include the possibility of thunderstorms, blackouts, and floods when you put together your disaster plan.

**Self-Test**

Indicate whether the following statements are true or false. If the statement is false, reword it to make it true.

1. Don’t believe the old wives’ tale that you can gauge the proximity of a storm by counting the seconds between the flash of lightning and its accompanying thunderclap.

   False. It is true that you may be able to gauge the proximity of a storm by counting the seconds
between the flash of lightning and its accompanying thunderclap.

2. Next to your home, the safest place to be in a severe thunderstorm can be a car with a hardtop, provided it is not parked under trees.

   True

3. Plug in and turn on all electrical appliances during a blackout to make sure they keep running when the power returns.

   False. Unplug or turn off all electrical appliances except one during a blackout. Otherwise, the surge that often follows the return of power could damage them.

4. In some blackout situations, downed electrical lines create a serious hazard.

   True

5. Many high-risk flood areas have building requirements that homeowners and building contractors need to meet.

   True
6. You can buy a radio that broadcasts only weather information.

True

7. Camp stoves and small grills can be used for cooking on upper floors if lower floors are flooded.

False. Avoid using camp stoves and small grills for cooking indoors, because of the lack of ventilation and danger of fire.

Answer each of the following multiple-choice questions by choosing the correct answer:

8. How far away from corresponding rainfall can lightning travel?
   a. 100 yards (91.5 m)
   b. 2 miles (3.2 km)
   c. 10 miles (16 km)
   d. 15 miles (24 km)

   The correct answer is (c). Lightning can travel to points that are as far as 10 miles (16 km) away from the rainfall.

9. Which of the following tends to attract lightning?
   a. water
b. metal
c. tree
d. all of the above

The correct answer is (d). Water, metal, or anything tall like a tree tends to attract lightning.

10. When the power returns after a blackout, how long should you wait before you turn your appliances back on?
   a. 1 hour
   b. 30 minutes
   c. 15 minutes
   d. you can turn on your appliances immediately

The correct answer is (b). Wait 30 minutes before turning your appliances back on.

Provide short answers to the following questions:
11. Explain the “tallest object in an open area” rule when lightning is present.

   The tallest object in an open area attracts lightning. Therefore, during a storm with lightning, stay away from hilltops and trees. Avoid open fields, where you would become the tallest object. Do not seek
shelter in a small building that stands alone in a clearing. Rather, try to find a depression in the ground.

12. Explain the difference between a flood watch and a flood warning.

A flood watch is issued when conditions are such that flooding is possible. A flood warning indicates a far greater likelihood of flooding, or that flooding is actually occurring.

**Assignment 5**

Complete this assignment in the medium of your choice. Begin by giving your full name, address, and phone number. Also indicate the course title, Assignment 5, your instructor’s name, and the date. Then provide your answers. Be sure to indicate the question number along with each answer. Instructions for sending assignments can be found in the Overview to the course.

Briefly answer each of the following questions in one print page, three braille pages, or a 1-minute recording.
1. When a thunderstorm is approaching, how can you avoid becoming a target for lightning if you are caught outdoors?

2. Explain how you should handle the following items during a blackout:
   a. refrigerator and freezer
   b. household appliances
   c. downed electrical lines

3. Describe eight modifications that can protect your home against flooding.

Once you have completed your assignment, mail, fax, or email it to your instructor. You may proceed with Lesson 6: Hurricanes, Tornadoes, and Earthquakes.