



Portland General Electric

Aunt Sarah and the Amazing Power Teacher's Guide

INTRODUCTION

Aunt Sarah and the Amazing Power gives your students potentially life-saving information about electrical safety. The booklet fulfills the following Oregon Academic Content Standards for science and health education.

Kindergarten Science

K.2 Interaction and Change: Living and non-living things move.

K.2E.1 Identify changes in things seen in the sky.

K.3 Scientific Inquiry: Science explores the natural world through observation.

K.3S.1 Explore questions about living and non-living things and events in the natural world.

Grade 2 Science

2.2 Interaction and Change: Living and non-living things change.

Grade 3

Health Education: Unintentional Injury Prevention

Demonstrate accessing information, self-management, interpersonal communication, goal-setting, and decision-making skills while understanding the components of injury prevention.

HE.03.IP.01 Identify safe behaviors when traveling to and from school and in the community.

Health Education: Health Skills

Demonstrate ability to use health skills, to obtain and interpret health information, to manage personal behaviors, and to advocate for health and safety issues.

HE.03.HS.05 Set short-term goals to enhance health and safety.

HE.03.HS.06 Use a decision-making model to make decisions that enhance health and safety.

OBJECTIVE

After reading the story and doing the activities in this booklet, children will be able to explain the many uses of electricity and where it comes from. They will also adopt six key electrical safety behaviors:

- Go indoors when there is lightning.
- Put only plugs and safety caps into outlets.
- Keep away from power lines.
- Keep away from electrical equipment (such as transformers and substations).
- Don't mix electricity and water.
- Have a family safety kit in case of outages.

A Note to Teachers: Please teach the safety concepts in this book in an age-appropriate way, so children learn how to stay safe without becoming fearful.

PREVIEW THE BOOKLET

Use at least one of these activities to get children thinking about electricity and electrical safety:

Vocabulary Review

Put the following words up on the board: electricity, lightning, power outage, electric appliance, power plant, power line, outlet, safety cap, plug, electric company. Discuss what they mean.

Picture Walk

Look at the pictures and ask children what they think is happening on each page.

Discussion

Ask children some basic questions about electricity and electrical safety, such as: What are some things that use electricity in your home? How can you be hurt by electricity? How can you stay safe around it?

READ AND REREAD THE STORY (PAGES 2-25)

After reading the story through once, you may wish to read it again and ask students the following questions. Some possible answers and explanations are in italics.

- Pages 2-5** How can you tell a storm is coming? (*Dark clouds, wind, raindrops.*)
- Pages 6-7** Why shouldn't you hide under a tree in a lightning storm? (*Trees and other tall objects attract lightning. If lightning strikes a tree while you are near it, the lightning will also strike you. The safest place to be during a lightning storm is indoors. Stay away from windows, water pipes, electric appliances, and phones, as these can conduct lightning if it strikes the building or nearby utility lines. You are also safe from lightning when inside a vehicle.*)
- Pages 8-9** Why is the power line down? (*A tree branch fell down on it during the storm.*)
What do the power lines look like in your neighborhood? (*Responses will vary: Some areas have wires called "service drops" connecting power poles to buildings. In some areas—like the neighborhood on this page—power poles are above ground but the service drop wires are not visible because they are underground. And in some areas all poles and wires are underground.*)
- Pages 10-11** Has your electricity ever gone off? What did your family do? (*Responses vary.*)
- Pages 12-13** What things on these two pages use electricity? (*Refrigerator, oven, blender, kitchen light, toaster, heater, TV, VCR, desk lamp, computer.*)
- Pages 14-15** What other things might be good to put into a safety kit? (*Blankets, drinking water, books and games, candles, matches, lantern, camping stove, etc.*)
- Pages 16-17** Use your finger to trace the path electricity travels to get from the power plant to lights and outlets. Why should only plugs and safety caps go into outlets? (*If you put anything else into an outlet, the electricity could travel through the object and into your hand and give you a painful or deadly shock.*)
- Pages 18-19** What should you do if you see a fallen power line? (*Stay far away and ask a parent or trusted*

adult to call 911. Assume ALL downed lines are dangerous. Even if the line does not spark or hum it might have electricity in it, which can hurt or kill you if you touch or come near it.)

Pages 20-21 If a power line near your home were to come down, who would fix it? (Elicit the name of the local power company. Make sure students understand that power company workers are the only ones who should fix broken power lines.)

Pages 24-25 What are some of your favorite things to do when you are at home? Which of these things do you need electricity for? (Responses will vary.)

DO THE ACTIVITIES (PAGES 26-31)

Page 26: Go Indoors When There Is Lightning

The pictures should be sequenced as follows:

Bottom picture happens first: Cats are outside and see lightning.

Top picture happens next: Cats go inside to be safe from lightning.

Middle picture happens last: Cats stay indoors during the lightning storm.

SAFETY DISCUSSION: Refer to notes above for pages 6-7 of story.

Page 27: Outlet Safety

The key, paper clip, and fork are not safe to put into an outlet and should be X'd out.

SAFETY DISCUSSION: Refer to notes above for pages 16-17 of story.

Page 28: Stay Away from Electrical Equipment

Everything but the slide should have an X on it.

SAFETY DISCUSSION: On the top left is a pad-mounted transformer. It is used in places where power lines run underground. The equipment inside transformers is very dangerous so transformers should always be locked closed. If children see one unlocked they should ask a parent or trusted adult to call 911 to immediately report it.

On the top right is a tall tower that supports large power lines called transmission lines. No one but specially trained workers should ever climb on these towers.

On the bottom right is a substation. No one should ever climb into a substation because the equipment inside is very dangerous. If a ball or toy goes into a substation, children should ask a parent or trusted adult to call the power company right away. If children see anyone climbing a substation fence, they should ask the person to get down and tell a parent or trusted adult.

Page 29: Stay Away from Power Lines

S E M A J
T A W A Y
A F R O E
Y R E S P
P O W E R
Y M T E B
L I N E S

SAFETY DISCUSSION: Refer to notes above for pages 18-19 and 20-21 of story. Emphasize that children should stay far away from any lines that have broken and come down, as well as lines that are up on poles.

Page 30: Don't Mix Electricity and Water

The three electrical things in the picture are the blow-dryer, the radio, and the portable heater.

SAFETY DISCUSSION: These things should not get wet because electricity travels easily through water. If an electric appliance gets wet, electricity can more easily leave the appliance and hurt someone. Always keep electric appliances far away from bathtubs, hot tubs, and swimming pools. If a plugged-in appliance falls into water when someone is in it, the person could be seriously hurt or even killed by the electricity.

Page 31: Make a Safety Kit with Your Family

The items in the safety kit will help in the following ways if the electricity goes out:

- The flashlight will help you see when it's dark and the lights don't work.
- The transistor radio will let you hear news about what's happening and when the power might come back on. (Distinguish between this and a radio that plugs in.)
- The extra batteries can be used when batteries in the flashlight or radio no longer work.
- The can opener will open cans of food.
- The canned food will be good to eat.

SAFETY DISCUSSION: Refer to notes above for pages 14-15 of story.

USE THE SAFETY PLEDGE (BACK COVER)

After reading the story and doing all the activities, show students the safety pledge on the back cover. Read the pledge aloud with students (or have them read it to a partner) and review the safety concepts in it. Then have students write their names beneath the pledge. **Encourage students to take the booklet home to share the story, activities, and pledge with family.**

GO FURTHER

Here are some ideas for students who want to go further with this book or learn more about electricity and electrical safety:

- Make the story into a play and act it out for other students.
 - Work in teams to find all the details in the illustrations that make it seem like a cat world. For example, the various cat-related stores on pages 2, 3, and 4; the catnip sign on page 7; and the feline family portraits on page 22.
 - With an adult, make a list of all the things in your home that use electricity. Put them into the following categories: Needs, Comfort, and Entertainment.
 - Interview several friends and family members to find someone who has been shocked by electricity. Ask the person how it happened and how it could have been prevented, then share the story with the class in a written or oral report.
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Thank you for helping your students learn about the safe use of electricity!