

Scott Foresman
SCIENCE

Grade K
Equipment Kit
Guide

Unit B
Physical Science

Contents

Equipment Kits and Teacher’s Guide	i
---	----------

Activity Notes for Unit B Physical Science

Describe objects. (B7)	1
Group objects. (B7)	1
Explore material. (B7a)	1
Compare weights of objects. (B9)	2
Order objects by weight. (B9).	2
Explore weight. (B9a).	2
Identify parts of objects. (B11).	3
Relate parts to the whole. (B11).	3
Explore parts of toys. (B11a)	3
Compare loud and soft sounds. (B17)	4
Explore how sounds are made. (B17).	4
Explore sounds. (B17a)	4
Classify objects as hot or cold. (B19).	5
Observe the effects of heat and cold. (B19)	5
Explore ice. (B19a)	5
Identify sources of light. (B21).	6
Explore traffic lights. (B21)	6
Explore light. (B21a)	6
Experiment with a shadow. (B22–B23)	7
Describe how people move. (B29)	7
Describe how objects move. (B29)	8
Explore movement. (B29a).	8
Classify objects that float or sink. (B31)	8
Observe how objects sink. (B31)	9
Explore floating and sinking. (B31a)	9
Observe magnetic attraction. (B33)	10
Use magnets. (B33)	10
Explore pushing and pulling with magnets. (B33a).	10

ISBN: 0-673-62748-9

Copyright © Addison-Wesley Educational Publishers, Inc.
All Rights Reserved. Printed in the United States of America.

Copies of materials in this booklet may be made for educational purposes.

This publication is protected by Copyright and permission for any other use should be obtained from the publisher prior to any prohibited reproduction, storage in a retrieval system, or transmission in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise. For information regarding permission, write to: Scott Foresman, 1900 E. Lake Avenue, Glenview, Illinois 60025.

Scott Foresman SCIENCE ® is a registered trademark of Addison-Wesley Educational Publishers, Inc.

2345678910 DH 050403020100

Equipment Kits and Teacher's Guide

Equipment Kit Management

About Your Kits

The equipment in *Scott Foresman Science* is packaged in sturdy plastic bins for your convenience. The quantities included support eight groups of four students each.

Unit Kit/ Grade Level Kit

The Unit Kit contains most of the items you will need to conduct hands-on activities with your students. Equipment for each unit is contained in one or two bins. The Unit Kit is designed to be purchased separately. Each bin is clearly labeled with the grade level, bin number, unit name, and contents. A label inside the lid of each bin references the materials by activity. Only activities requiring kit items are listed.

Unit Kits are also available in a Grade Level Kit configuration. In this format, a common bin eliminates items duplicated across the units for cost savings and convenience.

Demonstration Kit

The Demonstration Kit gives teachers the opportunity to rehearse activities before conducting them in the classroom. Kit-provided materials for each activity are pre-packaged and labeled for easy identification. When used in conjunction with the activity videos, the demonstration kits make it easy to prepare and conduct all investigations and experiments.

Storage of the Kits

Your equipment is packaged in sturdy, translucent plastic bins and labeled for easy storage and access. Bins may be stacked or stored on shelves or carts. Bins are labeled on all sides for quick identification and location of items. This provides convenient organization of materials before and after use.

Replacement Materials

Use the Packing List/Replacement Parts Price List to reorder items as needed for the Unit Kit or Grade Level Kit. These order forms are packed in the plastic bins and can be photocopied. Each list provides a column for entering the quantities of items you need to replace. Materials are organized alphabetically and identified as consumable or nonconsumable.

Complete consumable Replacement Kits are available as well. These kits replenish all the consumable materials for each Unit Kit or Grade Level Kit.

Using the Teacher's Guide

This guide will help you better prepare to conduct the program activities in your classroom. Reviewing the guide while practicing with the activity video and demonstration kit or simply reading the guide upon receiving your classroom kit will make it easy to facilitate an activity with your students.

Getting Started

Familiarize yourself with the kit contents. To make sure your shipment is complete, check the packing statement provided with your kit.

Activity Notes

The Activity Notes in this guide provide comprehensive information to make your activity sessions a success. This information may include:

Video Segment

The video segment number is indicated to help you cue the tape to each Investigate and Experiment activity.

Materials

A materials list for each activity identifies kit-supplied and school-supplied materials. Use this list as a check of your kit contents and as a list for class preparation.

Material Substitutions

For increased flexibility, material substitutions, when appropriate, are indicated.

Advance Prep

These instructions offer preparation guidance as necessary. With these suggestions, you will always be well prepared to conduct activities in your class.

Hints and Tips

Detailed hints and tips help to ensure student success in the classroom. Notes range from how to enhance students' success to increasing your understanding of activity concepts.

Safety Notes

While safety should be practiced at all times for each activity, it may be necessary to consider specific activity concerns. These notes give activity-specific safety tips.

Additional Comments

This section provides extension ideas, alternate activities, and other helpful information.

Describe objects.

Explore Activity (B7)

Materials (per group)

Kit Items	School-Supplied Items
none	crayons small objects of different sizes, colors, shapes, textures, hardness paper

Advance Prep

Gather a variety of objects. Be sure the objects are safe for children to handle. Children should be able to describe the physical properties of an object such as its size, color, shape, hardness, and the way it feels.

Group objects.

Explore Activity (B7)

Materials (per group)

Kit Items	School-Supplied Items
none	crayons small objects of different sizes, colors, shapes, textures, hardness paper

Advance Prep

Provide objects to sort by size, color, shape, texture, and hardness. Make sure the objects provided to each group have some common characteristics on which classification can be based.

Explore material.

Science Center Activity (B7a)

Materials (per group)

Kit Items	School-Supplied Items
none	crayons paper paper bag assortment of socks with different characteristics

Material Substitutions

Items other than socks can be used as objects for classification. Some examples are shoes, gloves, and toys.

Advance Prep

You may wish to invite children to bring a pair of their own clean socks to class for this activity.

Compare weights of objects.

Explore Activity (B9)

Materials (per group)

Kit Items	School-Supplied Items
balance	classroom objects

Hints and Tips

- Demonstrate how to use the balance prior to having children compare the weights of objects.
- The term *weight* is substituted for *mass* at this grade level, even though the concepts are not identical. Weight is the pull of gravity on mass and can vary. Mass is a measure of how much matter an object contains.

Order objects by weight.

Explore Activity (B9)

Materials (per group)

Kit Items	School-Supplied Items
balance	unsharpened pencils classroom objects

Advance Prep

Objects should include a variety of items lighter and heavier than a pencil.

Hints and Tips

Children will not be able to use the balance to test the weights of their shoes. They should compare the shoe weight to the weight of another object using their hands.

Explore weight.

Science Center Activity (B9a)

Materials (per group)

Kit Items	School-Supplied Items
balance	paper clips and other lightweight objects wood block and other heavier objects

Material Substitutions

Interlocking plastic gram cubes can be used in place of paper clips.

Advance Prep

Provide enough paper clips for children to weigh the heavier objects.

Hints and Tips

Some objects may be too large for the balance. Provide items that will fit on the pans.

Identify parts of objects.

Explore Activity (B11)

Materials (per group)

Kit Items	School-Supplied Items
none	old magazines glue cardboard squares (8-inch diameter) toy car

Material Substitutions

Newspaper pages, disposable photos, or postcards can also be used to make puzzles.

Hints and Tips

Use pictures with large-scale images. The puzzles will be easy to assemble.

Relate parts to the whole.

Explore Activity (B11)

Materials (per group)

Kit Items	School-Supplied Items
none	white construction paper brown construction paper purple construction paper glue

Material Substitutions

Other colors of construction paper can be used to create other types of “sandwiches.”

Advance Prep

Cut sandwich-size squares of construction paper in advance.

Explore parts of toys.

Science Center Activity (B11a)

Materials (per group)

Kit Items	School-Supplied Items
none	paper crayons assortment of moving toys

Hints and Tips

- Have children bring toys from home to share. Make sure they put their names on their toys.
- Avoid battery-operated toys.

Compare loud and soft sounds.

Explore Activity (B17)

Materials (per group)

Kit Items	School-Supplied Items
none	none

Advance Prep

Plan the path for your Sound Hike to include areas both in and around the school building.

Explore how sounds are made.

Explore Activity (B17)

Materials (per group)

Kit Items	School-Supplied Items
plastic film containers	cotton balls paper clips pieces of yarn pennies chalk

Material Substitutions

Any items that make different noises, such as beans or rice, can be put into the film containers.

Advance Prep

Place cotton balls in some film containers and pennies into other film containers.

Safety Note

Children should be careful when opening the film containers as items may spill out.

Explore sounds.

Science Center Activity (B17a)

Materials (per group)

Kit Items	School-Supplied Items
none	paper variety of paper tubes ticking timer

Advance Prep

Collect paper tubes from toilet paper, wrapping paper, paper towels, and so on. You may want to ask children to bring cardboard tubes from home.

Hints and Tips

Allow children to manipulate the tubes by taping them together, bending them, and stuffing them with paper.

Safety Note

Do not allow children to yell through the cardboard tubes into one another's ears.

Classify objects as hot or cold.

Explore Activity (B19)

Materials (per group)

Kit Items	School-Supplied Items
none	paper crayons old magazines

Hints and Tips

The magazines you select should have a variety of pictures displaying the concepts of hot and cold.

Observe the effects of heat and cold.

Explore Activity (B19)

Materials (per group)

Kit Items	School-Supplied Items
aluminum foil	water freezer

Material Substitutions

Instead of aluminum foil, use containers of different shapes and sizes.

Advance Prep

Cut pieces of aluminum foil for each child or group. A 6-inch square should be an appropriate size.

Hints and Tips

Have children think about the shape they would like to make with the foil. Planning will help them complete the task successfully.

Explore ice.

Science Center Activity (B19a)

Materials (per group)

Kit Items	School-Supplied Items
balloons of assorted shapes and sizes funnel	water freezer lunch tray scissors paper crayons

Material Substitutions

The balloons can be any size and shape as long as the sizes and shapes are distinct from one another.

Advance Prep

Make sure there is a freezer available to accommodate children's balloons.

Safety Note

Do not fill the balloons more than half full before freezing or they may burst.

Identify sources of light.

Explore Activity (B21)

Materials (per group)

Kit Items	School-Supplied Items
flashlight with D batteries birthday cake candle	objects that produce light objects that do not produce light

Material Substitutions

Any light-producing objects, such as lamps or holiday lights, can be used.

Explore traffic lights.

Explore Activity (B21)

Materials (per group)

Kit Items	School-Supplied Items
green cellophane red cellophane yellow cellophane flashlight with D batteries	red crayon yellow crayon green crayon chairs rubber band

Material Substitutions

Colored acetate can be taped over the flashlight instead of cellophane.

Advance Prep

Cut cellophane to fit the head of the flashlight. A 6 x 6-inch square fits nicely.

Hints and Tips

Double the yellow cellophane to produce a visible yellow light. Then attach the cellophane to the head of the flashlight.

Safety Note

Remind children not to look directly at a lit flashlight.

Additional Comments

Invite the school crossing guard to speak to children about traffic safety and rules.

Explore light.

Science Center Activity (B21a)

Materials (per group)

Kit Items	School-Supplied Items
none	blocks of different shapes colored construction paper

Material Substitutions

Light-sensitive paper can replace construction paper. Children will need to develop the light-sensitive paper in water.

Advance Prep

Locate areas in the classroom that get various amounts of sunlight. Be sure there is enough space for children to lay their papers for several days.

Hints and Tips

Do not use fadeless construction paper in this activity.

Experiment with a shadow.

Experiment Activity (B22–B23)

Video Segment 2**Materials (per group)**

Kit Items	School-Supplied Items
flashlight with D batteries	opaque objects such as small toys or building blocks clear plastic sheet butcher paper

Hints and Tips

Make sure children are holding the flashlight at the same distance for each trial to ensure consistent results.

Safety Note

Remind children not to shine the flashlight in the eyes of other children.

Describe how people move.

Explore Activity (B29)

Materials (per group)

Kit Items	School-Supplied Items
none	fastener cardboard paper clip

Material Substitutions

If you are unable to make a new spinner, use an existing one from a board game. Use tape or paper to create labels on the spinner.

Hints and Tips

- Use a cardboard circle, a paper fastener, and a paper clip to make a spinner. Divide the circle into sixths labeled *run*, *walk*, *hop*, *tiptoe*, *gallop*, *march*.
- This activity requires a large amount of space for children to perform the various body movements.

Describe how objects move.

Explore Activity (B29)

Materials (per group)

Kit Items	School-Supplied Items
marble	variety of objects such as a chalkboard eraser, crayons, coins, balls, blocks, toy vehicles old magazines (for pictures of toys that move) scissors

Hints and Tips

Good resources for pictures of toys that move are advertisements for toy stores, catalogs, or children's magazines.

Explore movement.

Science Center Activity (B29a)

Materials (per group)

Kit Items	School-Supplied Items
none	variety of balls such as a tennis ball, soccer ball, beach ball

Material Substitutions

Balls of any size or type can be used in this activity.

Hints and Tips

Remind children to merely drop, not to throw, the balls from the various heights being tested.

Safety Note

Children should not throw the balls at each other.

Classify objects that float or sink.

Explore Activity (B31)

Materials (per group)

Kit Items	School-Supplied Items
none	small classroom objects that can be tested safely in water tub or pail of water

Advance Prep

- If children are going to glue pictures of objects in the workbook, be sure to have pictures similar to the items you are testing for floating and sinking ability.
- Use a plastic tub, pail, or sink filled with water to test the objects.

Observe how objects sink.

Explore Activity (B31)

Materials (per group)

Kit Items	School-Supplied Items
aluminum foil	plastic tub of water materials to make a boat (such as margarine tubs, corks, corkboard, foam trays, egg cartons, sponges, toothpicks, craft sticks, plastic counters or cubes, aluminum foil, modeling clay)

Advance Prep

Prepare tubs, pails, or a sink filled with water for floating the boats.

Hints and Tips

Experiment with boat-building methods to get an idea of which materials or combination of materials work well.

Explore floating and sinking.

Science Center Activity (B31a)

Materials (per group)

Kit Items	School-Supplied Items
2 plastic cups, 10 oz	club soda raisins water drawing paper

Material Substitutions

Any clear carbonated liquid such as a clear soda drink may be used. Small pieces of pasta, such as angel hair pasta, may be used instead of raisins.

Advance Prep

Fill cups with water and club soda immediately before doing the activity.

Safety Note

Do not allow children to eat the raisins or drink the club soda.

Hints and Tips

- Smaller, drier raisins may work better than large, moist raisins.
- Cold, highly carbonated soda drinks work well in this activity.
- You may want to have children test other materials such as unpopped popcorn, uncooked rice, and so on.

Observe magnetic attraction.

Explore Activity (B33)

Materials (per group)

Kit Items	School-Supplied Items
bar magnet	magnetic and nonmagnetic objects

Material Substitutions

You can use other kinds of magnets such as horseshoe, disc, or donut-style magnets.

Safety Note

Do not use magnets around computers, cassette tapes, computer disks, and so on.

Use magnets.

Explore Activity (B33)

Materials (per group)

Kit Items	School-Supplied Items
bar magnet	magnetic and nonmagnetic objects paper clip

Hints and Tips

Provide a variety of items for children to test, such as envelopes, plastic bags, socks, and wooden rulers.

Explore pushing and pulling with magnets.

Science Center Activity (B33a)

Materials (per group)

Kit Items	School-Supplied Items
bar magnet	drawing paper

Material Substitutions

Other magnets, such as donut or disc magnets, can be used in this activity.

Safety Note

Children should be careful not to drop the magnets as this could affect their magnetism.