

Scott Foresman
SCIENCE

Grade 1
Equipment Kit
Guide

Unit B
Physical Science

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ISBN: 0-673-62751-9

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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.

Float and sink objects.

Explore Activity (B7)

Materials (per group)

Kit Items	School-Supplied Items
none	classroom objects water large container

Advance Prep

Fill the large container with water prior to beginning this activity.

Hints and Tips

Make sure the assortment of classroom objects contains items that float and items that sink.

Use objects to make bubbles.

Explore Activity (B11)

Materials (per group)

Kit Items	School-Supplied Items
none	safety goggles objects for making bubbles soapy water

Advance Prep

Mix soapy water in advance: 10 parts water with 1 part liquid dishwashing detergent.

Hints and Tips

Objects for making bubbles may include sieves, slotted spoons, funnels, and straws.

Experiment with bubbles.

Experiment Activity (B14–B15)

Video Segment 1

Materials (per group)

Kit Items	School-Supplied Items
2 plastic straws	safety goggles water with hand soap water with dish soap 2 plastic lids

Advance Prep

Prepare the hand-soap and dish-soap mixtures before class. Mixtures should be 1 part soap to 10 parts water. Make sure you label each mixture with the soap type. Use liquid dishwashing detergent to prepare the dish-soap mixture.

Hints and Tips

- When making bubbles, children should first spread a little soapy water on each lid.
- Bubbles should be as close to the same size as possible.

Safety Note

Caution children not to inhale while using the straws.

Draw and graph shoes.

Science Center Activity (B15a)

Materials (per group)

Kit Items	School-Supplied Items
none	shoes paper scissors crayons

Safety Note

Make sure the shoe soles are clean before tracing them.

What happens when water evaporates?

Investigate Activity (B18–B19)

Video Segment 2

Materials (per group)

Kit Items	School-Supplied Items
dropper	safety goggles black construction paper crayon salt water tap water

Advance Prep

Prepare salt water by mixing 1 tablespoon salt per 1 cup of water.

Hints and Tips

- It may be helpful to let children practice using the droppers prior to performing this activity.
- Have children stir the salt solution just before putting a drop onto the construction paper.
- To make sure the water evaporates, tell children to put only a few drops of salt solution onto the paper.
- Allow the construction paper to dry in an area that has low humidity.

Additional Comments

Children may use the dropper with colored water and white paper for an art activity extension. This can also function as practice for using the droppers.

Draw with ice cubes.

Science Center Activity (B19a)

Materials (per group)

Kit Items	School-Supplied Items
none	craft sticks ice cubes

Advance Prep

Pour water into an ice cube tray. Cover the tray with foil and poke craft sticks through the top of the foil before freezing.

Safety Note

Do not allow children to put the ice cubes in their mouths.

Make a drum.

Explore Activity (B25)

Kit Items	School-Supplied Items
balloon	safety goggles pencil, unsharpened small container scissors

Materials (per group)

Hints and Tips

Make sure the balloon is stretched tightly across the top of the container. It is important that the surface of the balloon is firm so it will vibrate when struck with a pencil.

Kit Items	School-Supplied Items
none	safety goggles plastic ruler

Use a ruler to make sounds.

Explore Activity (B27)

Materials (per group)

Hints and Tips

- Demonstrate the plucking motion used to snap the ruler, then invite children to try.
- It is best to use plastic rulers for this activity.

Does sound travel through things?

Investigate Activity (B28–B29)

Video Segment 3

Materials (per group)

Kit Items	School-Supplied Items
3 plastic resealable bags	water pencil book

Advance Prep

Fill one plastic bag about half full with water. Place this bag inside another resealable bag with the seals at opposite ends. This will help prevent leakage.

Hints and Tips

Have children place the book, bag of water, and bag of air in a row on a table or desk.

Make an instrument.

Science Center Activity (B29a)

Materials (per group)

Kit Items	School-Supplied Items
none	safety goggles materials for making instruments, such as cardboard tubes, containers, balloons, tape, beans, pebbles, box tops and bottoms, rubber bands of different sizes, paper clips, scissors, wax paper, paper, paints, glue

Advance Prep

Gather materials that children can use to make musical instruments.

Safety Note

Remind children to wear safety goggles for this activity.

Observe shadows.

Explore Activity (B31)

Materials (per group)

Kit Items	School-Supplied Items
none	paper pencil

Safety Notes

Make sure children look for shadows in safe and secure areas, particularly if you are conducting the activity outside. Remind children not to look directly at the sun.

How do shadows change?

Investigate Activity (B34–B35)

Video Segment 4

Materials (per group)

Kit Items	School-Supplied Items
none	crayon large paper object clock

Advance Prep

- Plan to begin this activity in the morning. Schedule time for checking the object's shadow around lunchtime and before going home.
- Look for places with significant sunlight in your classroom or elsewhere in the school so children will have an area to place their objects.

Hints and Tips

- Taller, larger objects with little detail will give shadows that are easier for children to trace.

Guess what made the shadow.

Science Center Activity (B35a)

Materials (per group)

Kit Items	School-Supplied Items
flashlight with D batteries	crayons classroom objects paper

Hints and Tips

Have children work in pairs. Each child picks an object. One child can hold the flashlight while the other child traces the object.

Safety Note

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

How can you keep an ice cube frozen?

Investigate Activity (B40–B41)

Video Segment 5

Materials (per group)

Kit Items	School-Supplied Items
plastic sandwich bag twist ties	ice cubes materials such as newspaper, packing materials, sand, pebbles, cloth, plastic wrap, foil, leaves, cups (paper, plastic, or foam), boxes, cans

Advance Prep

Be sure that the materials you have collected have different insulating capacities. Some examples are newspaper, sand, pebbles, foil, various types of cups, cans, and boxes.

Hints and Tips

- Ice cubes should be as similar in size as possible.
- Squeeze all of the air out of the plastic bag and use a twist tie to close it.
- Children should put the plastic bags with the ice cubes into the insulated containers at the same time.

Make a trivet.

Science Center Activity (B41a)

Materials (per group)

Kit Items	School-Supplied Items
none	craft sticks glue

Hints and Tips

Place newspaper or other covering on the table to protect the tabletop from dripped or spilled glue.

Push and pull a boat.

Explore Activity (B47)

Materials (per group)

Kit Items	School-Supplied Items
aluminum foil	bowl of water

Advance Prep

- Try folding the aluminum foil in various ways to make a boat. Determine which designs float best.
- Prepare 3 x 3-inch squares of aluminum foil for children to use to make their boats.

Safety Notes

Children should not splash the water in the bowl. Wipe up any spilled water immediately.

Make a maze.

Explore Activity (B51)

Materials (per group)

Kit Items	School-Supplied Items
table tennis ball plastic straw	wooden blocks or other materials such as drink cartons, place-value blocks, books, pencil boxes

Material Substitutions

Blocks can be replaced with any building toys that can be constructed into a maze.

Hints and Tips

Avoid creating a maze that has too many small corridors or sharp turns. The table tennis ball should have space to travel freely through the maze.

Make a marble maze.

Science Center Activity (B51a)

Materials (per group)

Kit Items	School-Supplied Items
marbles tagboard	box lid glue scissors

Advance Prep

Cut each piece of 9 x 12-inch tagboard into eight strips prior to beginning this activity.

Safety Note

Review the proper use of scissors with children.

Find out what a magnet attracts.

Explore Activity (B53)

Materials (per group)

Kit Items	School-Supplied Items
donut magnet	paper classroom objects such as paper clips, scissors, coins, crayons, and erasers

Material Substitutions

Other magnets may be used in place of the donut magnet (bar magnet, horseshoe magnet, disc magnet, etc.).

Advance Prep

- Gather objects that are both magnetic and nonmagnetic.
- Designate an area of the classroom that is safe for using magnets (away from computers and other electronic equipment).

Can magnets push and pull?

Investigate Activity (B54–B55)

Video Segment 6

Materials (per group)

Kit Items	School-Supplied Items
donut magnet	pencils dot stickers

Hints and Tips

One side of the donut magnet is the north pole and the other side is the south pole. When opposite poles are placed faceup on a flat surface, the magnets attract. When the like poles are faceup, the magnets will repel.

Safety Notes

Children should hold the magnets carefully on the sides or push a magnet with one finger on top. This will avoid pinched fingers when magnets are attracted to each other.

Search with a magnet.

Science Center Activity (B55a)

Materials (per group)

Kit Items	School-Supplied Items
donut magnet	classroom objects

Safety Note

Remind children to keep magnets away from computers, computer disks, cassette tapes, and other electronic devices.

How does a lever work?

Investigate Activity (B58–B59)

Video Segment 7

Materials (per group)

Kit Items	School-Supplied Items
wooden ruler	pencil book

Hints and Tips

Use an average-sized book—not too thick, tall, or wide.

Safety Notes

Make sure children are using wooden rulers. Plastic rulers may be too weak to support the weight of the book.

Play with ramps and marbles.

Science Center Activity (B59a)

Materials (per group)

Kit Items	School-Supplied Items
marbles	ruler with a groove books

Advance Prep

Make sure you have enough grooved rulers for all groups of children.

Safety Note

Make sure children pick up stray marbles off of the floor.