

Scott Foresman
SCIENCE

Grade 5

**Equipment Kit
Guide**

Unit D

Human Body

Contents

Equipment Kits and Teacher’s Guide. i

Activity Notes for Unit D Human Body

Exploring Lung Volume (D6) **1**
Making a Breathing Model (D14–D15) **1**
Experimenting with Exercise and Carbon Dioxide (D25–D27) **2**
Exploring How Diseases Spread (D32) **3**
Measuring Heart Rates (D56–D57) **3**

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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.

Exploring Lung Volume

Explore Activity (D6)

Materials (per group)

Kit Items	School-Supplied Items
liquid dishwashing detergent glycerin plastic graduated cup, 10 oz 4 plastic straws half-meter stick	garbage bag masking tape water paper towel

Material Substitutions

A flat tray may be used in place of the garbage bag, or students may use the desktop.

Advance Prep

Prepare the bubble solution in advance. Mix 1 gallon water, 1 cup liquid dishwashing detergent, and 40–50 drops of glycerin. Glycerin helps the bubbles to last longer.

Hints and Tips

- Allow students a little time to explore and practice blowing the bubble domes.
- Moisture is a key to making bubbles last. The surface and the straw must be kept moistened with bubble solution.

Safety Notes

Remind students not to taste the bubble solution or share straws. Have students wipe up spills immediately.

Additional Comments

- Students may repeat the activity several times and find the average of the trials. Repeated trials will increase the reliability of the results.
- If students used desk surfaces in this activity, desktops may be cleaned with a vinegar/water solution.
- The method for calculating the volume of the bubble domes is to calculate the volume of a sphere and divide the value by 2 (assuming the dome is half of a sphere). The formula to find the volume of a sphere is $\frac{4}{3} \pi r^3$. To find the volume of half a sphere, divide the value by 2.

Making a Breathing Model

Investigate Activity (D14–D15)

Video Segment 1

Materials (per group)

Kit Items	School-Supplied Items
small balloon (5") plastic straw twist tie plastic cup, 10 oz modeling clay large balloon (13")	safety goggles scissors

Material Substitutions

A small rubber band may be used in place of the twist tie.

Advance Prep

Use an awl or sharp scissors to poke a hole in the bottom of each plastic cup. Nesting two cups makes them sturdier when punching the holes. Enlarge each hole by twisting the blade of a pair of scissors in the hole. The hole should be large enough to fit the diameter of the straw.

Hints and Tips

Students may require assistance when stretching the cut balloon over the end of the cup.

Safety Note

Remind students to be careful when stretching the larger balloon over the cup and when pulling it down or pushing it up.

Experimenting with Exercise and Carbon Dioxide

Investigate Activity (D25–D27)

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

Kit Items	School-Supplied Items
3 plastic cups, 10 oz bromothymol blue solution measuring cup 3 plastic straws	safety goggles masking tape marker clock with a second hand

Advance Prep

- Prepare bromothymol blue solution by adding 60 drops of bromothymol blue to 150 mL of water for each group.
- You may consider sending permission slips home with students. Students with heart conditions, asthma, or other health problems should check with their doctor before participating in this activity.

Hints and Tips

- Make sure students walk briskly for the full two minutes.
- Make sure students run in place for the full two minutes.

Safety Note

Caution students neither to taste the solution nor to inhale through the straw.

Additional Comments

Make sure students understand how to make a bar for their graph if the number they are graphing falls between two numbers on the y-axis.

Exploring How Diseases Spread

Explore Activity (D32)

Materials (per group)

Kit Items	School-Supplied Items
plastic pail hand lens	marker 4 sheets of dark construction paper flour

Safety Notes

Have students immediately wipe up any spilled flour. Students should wash their hands thoroughly after completing the activity.

Measuring Heart Rates

Investigate Activity (D56–D57)

Video Segment 3

Materials (per group)

Kit Items	School-Supplied Items
none	clock with a second hand

Advance Prep

You may consider sending permission slips home with students. Students with heart conditions, asthma, or other health problems should check with their doctor before participating in this activity.

Hints and Tips

Prior to the activity, students should practice counting their heartbeats.