PREPARING FOR THE ACTIVITIES—QUARTER 2

CLASSROOM MANAGEMENT

Materials

You may want to familiarize yourself with the kit materials before beginning the activities. The contents of each drawer are listed on the drawer labels. We suggest that you refer to the Materials List on pages 1–3 of this guide as you review the materials in each drawer.

Before beginning each activity, review the Materials list and the Preparation required for the activity. The Materials list indicates which items will be used in the activity, how many of each item will be needed for each individual and each student team, and the size of each team. We recommend that you ask student helpers to assist you in locating materials and preparing for each activity.

After you have completed the quarter, make a list of any items that need to be ordered for the next use. For information, call 1–800–258–1302.

Distribution Stations

The most efficient way to distribute materials during an activity is to set up distribution stations from which students can obtain materials as needed. If space in your classroom is limited, you may have room for only one station. If you have more space, we recommend setting up two or three distribution stations, each containing about a half or a third of all the materials listed in the Materials list for each activity. In this way, each distribution station will contain all of the different items used in the activity, and students will not need to visit more than one station to obtain all of their materials.

Cooperative Learning

The **Broward County Hands-On Science** program encourages and promotes cooperative learning strategies. The quantity of materials included in each kit allows small groups of students to investigate phenomena and each student to make observations and report what he or she has learned. The interaction between team members is an integral part of each activity and enhances individual outcomes.

ADVANCE PREPARATION

Activities 14–19: These activities involve the heating of water that has been left in the Sun. For this reason, the activities would be best conducted during spring, summer, or fall when the days are more likely to be sunny. Two 6-L containers should be filled with tap water and placed outdoors at least two hours before the start of the activity. The containers should be placed in an area where students can conduct their experiments.

MATERIALS MANAGEMENT

Do not store magnets for **Activity 11** in the same containers as compasses. Always keep magnets away from electronic equipment (computers, televisions, digital watches, and so on).

The batteries supplied for **Activity 11** are not rechargeable. A battery tester can be constructed by connecting a light bulb in series with the battery to be tested. The battery's strength can be tested by comparing the brightness of the bulb with the brightness of a bulb attached to a fresh battery. Drained batteries should be discarded and replaced as required.

The batteries supplied contain chemicals. Special precautions should be taken when disposing of dead batteries. Consult with your local disposal service for the preferred method of battery disposal.

Batteries connected in series are connected so that the negative end of one battery is connected to the positive end of another battery, regardless of the number of batteries to be connected.

Wire cutters use sharp edges to cut and strip wire. To cut wire, open the handles of the wire cutters, place the wire in the bottom of the "V" where you want the wire to be cut, and squeeze the handles.

To strip the wires, close the handles of the wire cutters until the notches (‹›) form a "hole." Slide one end of the wire through the hole. Gently squeeze the handles of the wire cutters so that the insulation is nicked but the copper wire is not cut. Adjust the handle using the set-screw; you have now adjusted the wire cutters to strip a wire of this gauge. While holding the wire cutters firmly in one hand, tug on the long end of the wire to remove the insulation from the short end.

After the students prepare, plant, and water the two class terrariums in **Activity 12,** select two areas in which to store the terrariums. One terrarium should be exposed to sunlight during the day, the other should receive no sunlight at all. Both should be accessible, as students will water and observe the growth of the grass every other day for 7–10 days.

The solar collectors used in the activities must be exposed to direct sunlight. Select an area outdoors where the solar trays can be left undisturbed in direct sunlight for the prescribed amount of time (see Preparation for **Activities 14–19**).

Activities 14–19 involve taking students outdoors to conduct their experiments and making sure that they bring with them all of the materials they will need, including their activity sheets and a pencil. A typical activity goes like this: You lead the students to the site, where they set up their equipment and make some notes on their activity sheets. You then lead them back to the classroom for discussion. After the prescribed time has passed, you take them back out to the site to make final observations, record data, and dismantle the setups. Finally, you lead the students back to the classroom for further discussion. You may want to ask another adult or a student assistant to help you, depending on your situation.

The collector in **Activity 19,** when properly constructed, can be quite powerful. Instruct the students to handle it carefully to avoid shining reflected sunlight into their own or a classmate's eyes.