SVE

SVE Basic Skill Boosters

Teacher's Manual

**Science Corner:
Weather Watch**

20607-DS1
Dewey Decimal Number 551.5

SVE

SVE Basic Skill Boosters

Teacher's Manual

**Science Corner:
Weather Watch**

Credits and Copyright

Consultants:
Christine Borland
Boston Museum of Science, Boston, MA

Ann Koufman
Computer Specialist, Driscoll School, Brookline, MA

Curriculum Designer:
Henry F. Olds, Jr.

Managing Editor:
Clare Siska

SVE Producer:
Nancy L. Davis

Manual and Skill Booster Writers:
Nancy L. Davis
Ellen Kisslinger

Production Assistant:
Christine Smith

Software Programming:
Peter Andrews
Rob Shaver

Software Art/Design and Animation:
Angela Faeth

Software Art Direction:
Laura Koller

Contents

Introduction

Science Corner: Weather Watch is intended to enhance students' basic understanding of our weather. After a brief introduction to the Earth's atmosphere, students are provided opportunities to explore various aspects of our weather. The program is designed to provide general information, to demystify some of the ongoing changes in the weather that affect our daily lives, and to stimulate further inquiry and exploration by students. Students are provided with opportunities to explore and interact with the material in several ways. To take full advantage of the program, students need to read and follow directions carefully, take measurements, read illustrations, record data, hypothesize causes and effects, make predictions, draw conclusions, and make generalizations. A Notebook in the program enables students to record some of their work while at the computer. They are thus provided numerous opportunities to develop study skills and the "tools" of scientific inquiry as they expand their knowledge of the world in which they live.

Learning Objectives
Science Corner: Weather Watch is designed with the following learning objectives in mind:
- to help students understand characteristics of Earth's atmosphere
- to illustrate how the water cycle works
- to study different cloud types and what causes precipitation
- to understand why there are changes in the weather
- to understand how storms work

Program Description
On the Program Disk, the user is first given an opportunity to receive instruction in using the program. Then, after loading the Student Disk, the user views two introductory scenes, then goes to the *Selection Screen,* from which five units can be explored. The units are: Earth's Atmosphere, The Water Cycle, Clouds, Changes in the Weather, and Storms. Each unit has two types of scenes: a main scene that provides an interactive simulation, and one or more supporting scenes. When a unit is selected, it opens to either an introductory supporting scene or to the main scene. The user explores and interacts with the main scene by following the on-screen instructions. Other supporting scenes provide additional learning and interactive activities.

Each unit includes a Notebook page on which students may record their observations and ideas. Students should be encouraged to use the Notebook throughout to help them express concepts in their own words. Notebook pages can be printed.

Students can work through the units as they choose. It is often worthwhile to work with the simulation first. Each simulation can be replayed as often as desired. Then students can use the supporting scenes to help them reflect on what they observed in the simulation. They can return to the simulation with an improved awareness of what is going on. They can also work on the main and supporting scenes concurrently, by "flipping" back and forth, if this helps them to understand the concepts better. Thus, students can vary their approaches to suit individual learning styles.

Grade Level
This program is designed for the upper primary and lower intermediate grades.

The following is a simple flowchart of the program organization.

Flowchart

```
        ┌─────────────────────┐
        │  Load Program Disk   │
        └──────────┬──────────┘
                   │
                   ▼
        ┌─────────────────────┐
        │    Read Program      │
        │    Instructions      │
        └──────────┬──────────┘
                   │
                   ▼
        ┌─────────────────────┐
        │   Load Student Disk  │
        └──────────┬──────────┘
                   │
                   ▼
        ┌─────────────────────┐
        │ Introductory Screens │
        └──────────┬──────────┘
                   │
                   ▼
        ┌─────────────────────┐
   ┌──→│   Selection Screen   │
   │    └──────────┬──────────┘
   │               │
   │               ▼
   │    ┌─────────────────────┐        ┌──────────────┐
   ├──←─│     Main Scene       │──→────│   Notebook   │
   │    └──────────┬──────────┘   │    └──────────────┘
   │               │              │    ┌──────────────┐
   │               ▼              ├──→─│   Menu Bar   │
   │    ┌─────────────────────┐   │    └──────────────┘
   └──←─│  Supporting Scenes   │──→┤    ┌──────────────┐
        └─────────────────────┘   ├──→─│     SAVE     │
                                  │    └──────────────┘
                                  │    ┌──────────────┐
                                  └──→─│    PRINT     │
                                       └──────────────┘
```
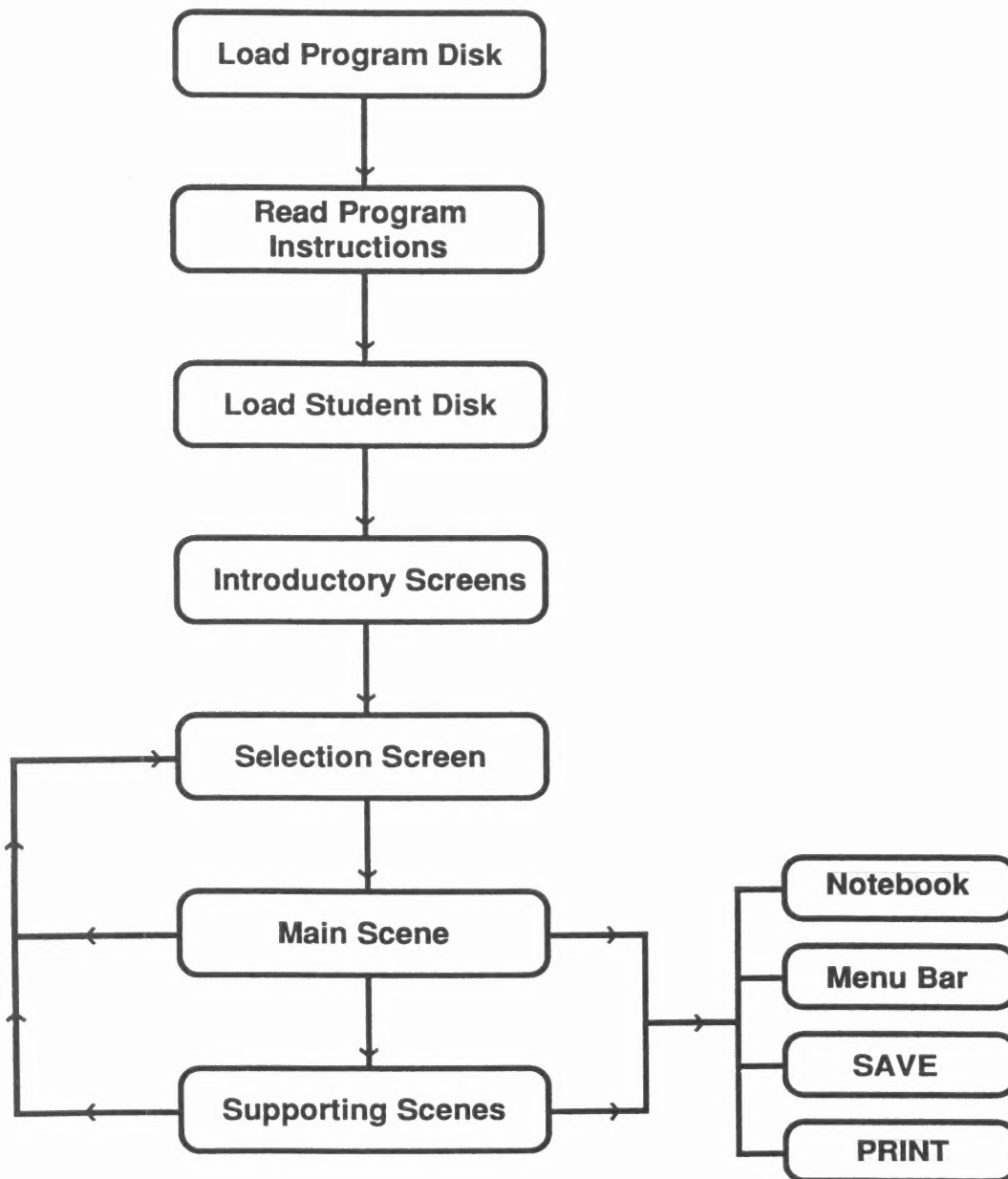
Getting Started

The *Science Corner: Weather Watch* package comes with one copy of each disk. See SVE's "Copy Our Disks" program sheet at the back of this manual for information on how to make copies of the Program Disk. The Student Disk is a data disk and is not copy protected. You may make as many copies of it as you need.

Equipment Needed
This program will operate on an Apple IIc, IIGS, or an Apple IIe with 128K. One disk drive is required. A mouse and color monitor are strongly recommended.

Cautions
Disks should always be handled with extreme care to avoid erasing the information stored on them. The following precautions will minimize problems:
- Never touch the magnetic surface of the disk.
- Do not leave disks where they can collect dust. Always keep disks in disk jackets unless they are being used in disk drives.
- Do not turn the disk system off with a disk in the drive. Magnetic fields generated by the drive's motor may alter the data in the disk.
- Do not press any keys when the red light on the disk drive is on. This means the disk is turning and the computer is searching for information.

Loading the Program
1 Insert the Program Disk into the disk drive.
Note: *Science Corner: Weather Watch* works best with a single disk drive. If you wish to use a second drive, change the SETUP only when you are ready to use the Student Disk. (See the **SETUP** section in this guide.)

2 Close the door to the disk drive.

3 Turn on the Apple computer and the monitor. This will load the program.

4 A red light on the disk drive will turn on. If the disk drive light does not turn off in about ten seconds, turn the Apple computer off and make sure your disk is placed correctly in the disk drive.

5 The SVE screen will appear, followed by the title screen of *Science Corner: Weather Watch* and an information screen. For program instructions, click on 📃. To continue, follow the instructions as indicated on the instruction screen.

Turning Off the System
1 Remove the disk.

2 Turn off the Apple computer.

3 Turn off the monitor.

Disk Program Instructions

From the instruction screen on the Program Disk, the user can click on ▤ to gain access to the program instructions. The program instructions include information about how to select and explore. It is important to become familiar with the program instructions before continuing.

How to Select
Science Corner: Weather Watch functions in a "point and select" fashion. When the program has been loaded, you will notice a small white arrow at the top of your screen. This is called the "pointer." To work with an item on the screen, move the pointer to point to the item and "click" on the item.

Mouse: If using a mouse, "clicking" means pressing the mouse button. To"drop" something, click again.

Keyboard: If using the keyboard, press the ⇧⇩⇦⇨ keys to move the cursor. Hold down the ⌘ to move faster. To "click," press the option key (or). To "drop" something, press the option key (or key) again.

Other Input Devices: With a joystick, a Touch Screen, or a KoalaPad, "clicking" means pressing the control button.

How to Explore
Select one of the five units from the *Selection Screen*. Clicking on these signs takes you to other screens.

▤ gives you general instructions or information in a text window. To close the text window, click on it.

⊙ gives you more specific information or directions in a text window. To close the text window, click on it.

☀ gives you questions to think about and possibly answer in your Notebook. To close the text window, click on it.

▦ takes you back to the *Selection Screen*. From there you can choose another unit to work on.

⤵ takes you to the Notebook, where you can record your observations and do individualized writing.

⇨ takes you to the next scene.

⇦ takes you back to the previous scene. From the Notebook, ⇦ takes you back to the scene you were just on.

▣ reopens the scene you are on.

You are sometimes told to explore by "dropping" or "waving" items in the scene.

Dropping
In this program, to "drop" something means to do the following:
1 Click on it to pick it up.

2 Move it to the right place.

3 Click again to drop it.

4 Move the pointer away.

Waving
In this program, to "wave" something means to do the following:
1 Click on it to pick it up.

2 Move it over a target.

3 Move it away.

4 Click again to drop it.

Writing
To write in the Notebook or on any scene, place the pointer where you would like your text to begin, and start to type. When you want to go to the next line, press the RETURN key. The computer will "beep" if your typing reaches the end of the screen. If you have begun a word you can't finish on a line, use the DELETE key to erase the last few letters, and start the word over on the next line.

Some of the more important words associated with the scene are available in the menu and can be put into the scene as labels or as part of some writing (see **How to Use the Menu Bar**).

You can reposition any line of text on the screen by clicking on it, moving it, and clicking again to drop it. When you are handling text, you can also use the RETURN key to drop something.

You can edit a line of text by clicking on it and erasing

one letter at a time from the end of the line by pressing the DELETE key (backspace delete). You must then retype any letters you want to replace. If you want to delete something on another line, position the pointer where you want to start deleting, click on that spot, then press DELETE.

If you wish to save your writing, you must save the scene before going on to another scene (see **SAVE**). Students can also print any Notebook page or any scene (see **PRINT**).

Suggested Steps for Using the Program

This program allows for variation and flexibility as the student explores. However, the following general procedure is a good one to use, especially when becoming familiar with the program.

Encourage students to:

1 Form a team of two or three people. Encourage them to discuss what they discover and what they want to learn. (Answer questions that are asked and ask students questions of your own.)

2 Select the topic their team wishes to explore, and then review the main scene. (The main scene is the first scene for each topic in this program.)

3 Select ▤ to read the general directions about what to do in the scene.

4 Use the directions as a guide to exploring the scene. If there are several steps to take, remind students that they can always reopen the directions.

5 Click on ⊙ to get more specific information and directions as needed.

6 Click on any ☼ they may find and read over the questions to think about.

7 Click on the ⇨ to go to a supporting scene. Explore and study this scene. There may be another ⇨ to go to another supporting scene. If so, follow it and explore and study that scene.

8 Use the Notebook option to record observations, discoveries, answers, and questions (using pen and paper is another option). There is at least one Notebook per unit. The Notebook provides an easy way of "thinking on the screen." Write in their own words what they saw or questions about things they don't understand. (See **Writing.**)
Note: Any writing in the Notebook should be saved before continuing (see **SAVE**). Notebook pages can also be printed (see **PRINT**).

9 Use ▣ to review or replay any scene.

10 Stop work on a topic at any time and return to the main selection screen by clicking on ⊞ .

Research
The five topics in this program initiate a process of inquiry. Students will broaden and deepen their understanding by extending their inquiry with further research. They will find additional information in library books, film or filmstrip collections, magazines, and on TV.

Writing
It is very important that students express in writing what they have learned. While the Notebook is a convenient means for on-screen note-taking, the program does not permit students to do extensive writing. Therefore, students should be encouraged to do further individualized writing about the unit, with pencil and paper or, preferably, with a word processor. In many cases, this writing might be based on the notes they have taken in their Notebooks. They can develop their personal reactions to the ideas presented, report on additional research they have done that is related to the unit, or elaborate on answers to questions posed by the program or by them.

Illustrating Reports
Scenes from the program can be printed to illustrate reports that students might create. To some extent, students can rearrange the scene, add characters and objects to it, and write directly on it. These new scenes can be saved and printed in color or black and white. (See **How to Use the Menu Bar, SAVE,** and **PRINT**.)

The Units: Organization and Description

Unit Introductory Scene 1: The weather and seasons change because the Earth revolves around the sun
Unit Introductory Scene 2: An overview of different global weather conditions

Earth's Atmosphere: Organization and Description
- **Main Scene:** Students observe and learn the names of the layers of the atmosphere. They move a rocket and a barometer through the layers and make observations.
- **Supporting Scene:** Students read about each of the atmosphere's layers, and observe objects visible in each layer.
- **Notebook**

The Water Cycle: Organization and Description
- **Main Scene:** Students learn about a water cycle in nature by manipulating a lake and observing what happens.
- **Supporting Scene:** Students read about the parts of the water cycle. The terms condensation, precipitation, and transpiration are introduced.
- **Notebook**

Clouds: Organization and Description
- **Main Scene:** Students learn about types of clouds and the impact of water vapor by positioning three types of clouds at different altitudes in the sky, then adding water vapor to observe what happens.
- **Supporting Scene:** Students study how temperature affects precipitation by moving a saturated cloud through three different temperature zones.
- **Notebook**

Changes in the Weather: Organization and Description
- **Main Scene:** Students look at a weather map and study cold and warm fronts, their west-to-east movement, changes in temperature near fronts, and the influence of air-pressure changes on our weather.
- **Supporting Scene:** Instruments used to predict and measure weather are presented.
- **Notebook**

Storms: Organization and Description
- **Main Scene:** Students observe air movement inside a hurricane, air pressure, and temperature differences in and around it.
- **First Supporting Scene:** Students receive background information on different parts of a hurricane.
- **Second Supporting Scene:** Students track a hurricane along its path from Cuba to Virginia.
- **Notebook**
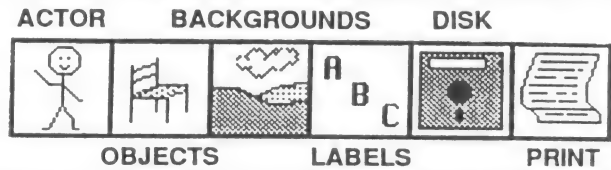
How to Use the Menu Bar

The **Menu Bar** is available on the Program Disk instructions screens and all Student Disk screens by pressing ESC. If you have selected an ACTOR, OBJECT, or line of text, you must first drop it before you can select the **Menu Bar.**

The **Menu Bar** is also available at any other time by pressing the ESC key.

The **Menu Bar** contains six options: ACTORS, OBJECTS, BACKGROUNDS, LABELS or WORDS, DISK OPTIONS, and PRINT OPTIONS. To close the **Menu Bar,** click anywhere else on the screen, except on the **Menu Bar.**

ACTORS are animated characters and things that can be added to scenes. Click on ACTORS (the "dancing person" icon) to open it. Then click on either arrow to scroll through the actors. To add an actor to your scene, click on it, put it in your scene, and click again to drop it.

OBJECTS are inanimate things; BACKGROUNDS allow you to change scene background colors. LABELS are words associated with things for that topic. All of these can be added to the scene in the same way as the ACTORS.

DISK gives you disk operating tools. Two options are visible when DISK is selected: OPEN and SAVE. Two other options, SETUP and DISK UTILITIES, are not visible. They are made available by pressing Control-T (TEACHER UTILITIES) after clicking on the DISK icon.

Visible Disk Options
OPEN: This option makes it possible to open any of the files on disk, either those that came with the disk or those saved by users. After clicking on OPEN, click on the arrows below the file name to scroll through the names of any other files on the disk until you find the one you want (if no files have been saved, the only name will be WEATHER). Next, click on the arrow under the scene number to pick the scene you want to open. To open the scene, click anywhere in the long upper box containing the name and number.

The scene number for the Weather Watch selection screen is:
WEATHER 3.
The scene numbers for the five main scenes of this program are:

>Earth's Atmosphere–WEATHER19
>The Water Cycle–WEATHER 4
>Clouds–WEATHER 6
>Changes in Weather–WEATHER 10
>Storms–WEATHER 14.

SAVE: The SAVE option is used to save scenes created or changed by users on the Student Disk. To save a new scene, you must give it a new name (it should *not* be named WEATHER). After clicking on SAVE, you will see the name of the scene you were working on. Click on NEW NAME, and then type in a meaningful file name (you may want to use your own name or the name of your team). Select NEW NUMBER, then type a number for your scene. Then click on the box that has your new name and new number in it to save your scene.

Make sure students understand that any work or writing they have done on a scene will be lost if they move on to another scene without saving.

A red "thermometer" line at the bottom of the SAVE box indicates how much space is left on the disk for saving files. If the red line approaches the right, the disk is almost full. If the disk is full, delete unwanted scenes, or save on another Student Disk. The original disk scenes are locked to protect them. Students can also save their own files on blank, PRODOS-formatted disks, if they choose.

Once you have saved a scene under a new name, you may want to return to it. You can do so at any time the **Menu Bar** is visible (see **OPEN**).

Invisible Disk Options
As noted above, to view the teacher utilities, it is necessary to press CTRL-T while the visible disk options are displayed.

SETUP

Normal setup:

Print	Current Page
Printer Type	ImageWriter II
Card Type	Serial
Printer Slot	1
Student Disk	Slot 6 Drive 1
Setup and	
Disk Utilities	Off Menu

Alternative setups:

Print	Entire Book
Printer Type	Scribe
	Epson
	Okidata
	ImageWriter
Card Type	Parallel
	Grappler
	Automatic Ice
	Digicard
	Appletalk
Printer Slot	2, 3, 4, 5, 6, 7
Student Disk	Slot 6 Drive 2

Note: Other alternative student disk settings will be determined by your particular computer system.

Setup and	
Disk Utilities	On Menu

You may need or wish to change these settings to use the program on your system.

To change SETUP, click on any one of the right-facing arrows to scroll through the options until you find the one you want. If your printer type does not appear, try several of the options offered and attempt to print. It is likely that one of the options will work with your printer. You can try the same procedure if you have a printer card that is not listed. To save the settings you have changed, put your Program Disk in the disk drive. Move the pointer to SAVE TO DISK and select it. Doing so will make these changes available the next time you use the program. If you do not save the changes, they will not be available and it will be necessary to change the setup again.

Note: Changes to *Slot* and *Drive* for Student Disk cannot be saved on the Program Disk. If you wish to use a different drive setup you must change the setting each time. Because the program only uses one disk at a time, it is recommended that the Student Disk be put in your boot drive.

DISK UTILITIES

This allows the teacher to lock, unlock, or delete scenes on a Student Disk. From the expanded CTRL-T Disk menu, click on DISK UTILITIES, then choose the name of the scene you want to work with by clicking on the arrows under the name. Select the number of the scene you want to work with by clicking on the arrow under the scene number.

LOCK: Locking a scene protects it from being deleted or replaced by accident. To lock a scene you have chosen, click on LOCK, then click on the name box. The * which appears to the left of the page number tells you that the scene is locked. A locked scene can always be unlocked to save new changes.

UNLOCK: By unlocking a scene, it is possible to delete, replace, or resave it. To unlock a scene you have chosen, click on UNLOCK, then click on the name box.

DELETE: Deleting removes a scene permanently from the disk. Use DELETE to remove scenes you no longer want to keep. To delete a scene you have chosen, click on DELETE, then click on the name box. You are asked to verify if you want to delete that scene. Select YES to delete.
Note: Always be very careful when you delete a scene. Be sure you are deleting the scene you want to delete. Student files are locked on the disks provided. Unlocking or deleting any WEATHER files will seriously damage your disks!

PRINT OPTIONS

This is the last option on the **Menu Bar**. Any scene can be printed. Before printing, check the SETUP to make sure your printer card and printer selections are correct. Also, make sure your printer is connected and turned on. To print a scene, click on PRINT from the **Menu Bar** and follow the directions.

Only your setup is set to ImageWriter II printer will you be given the option to select LARGE COLOR, SMALL COLOR, or BLACK and WHITE printing. Of course, you must have a color ribbon installed before you can print in color. A large color image will cover about one half of a page of paper. A small color image will cover about one eighth of your printer paper.

Trouble-Shooting Guide

This section lists problems that sometimes occur, along with likely causes. If these solutions do not help, try running the program on another computer to determine if there is a hardware problem.

If the Program Disk will not load, check the following:

Do you have the Program Disk in Drive 1?
Is the disk inserted with the correct side up?
Is the disk drive door closed?
Is the disk drive properly connected to the computer?
Is the computer's memory at least 128K?
Does the computer have a high-resolution graphics chip?
Has the high-resolution graphics block been connected to the 128K card?

If the program does not move past the title screen,

Have you inserted a Student Disk?

If you cannot open another unit or file, check the following:

Is the Student Disk on the correct side?
Are all necessary files on the disk?

If the pointer does not move, check the following:

Was your inputting device plugged in before loading?
Is it correctly plugged in?
Is your mouse card connected properly in Slot 4?

If the pointer has disappeared, check the following:

Has the pointer been completely moved off the screen?
Is the computer trying to print?
Have you selected an actor, object, background, or word, and not yet clicked to position it on the scene?

If an actor has disappeared, check the following:

Has the actor been completely moved off the screen?
Did you press the DELETE key while the actor was selected?

If ESC will not open the Menu Bar, check the following:

Have you selected an actor, object, background, or word and not yet clicked to position it on the screen?

If an actor's animation has stopped, check the following:

Has another actor, object, or label been placed on top of it?
Are there too many actors in the scene?
Was this character a duplicate created with the SPACE BAR? (Duplicates will not animate.)

If the computer displays an error message, check the following:

Is the disk drive open?
Is the correct disk in the drive?
Are there too many objects, actors, or text letters in your scene?

If you cannot save a scene, check the following:

Is the scene locked?
Does a scene with the same name and number already exist?
Is the Student Disk in the correct drive according to SETUP?
Is the disk full?
Is the disk damaged?
Is the disk drive malfunctioning?

If the actors will not move, check the following:

Are there too many actors and objects in the scene?
Is the actor behind another actor, object, or label? (Only the character on top will move.)

If a scene will not print or prints incorrectly, check the following:

Is the SETUP correct?
Is the printer's "select" button on?
Is the printer hooked up, turned on, and plugged in properly?
Is the paper centered properly?
If you were using another program, did you shut off the printer and restart it after loading the SVE Program Disk?

Permission to Reproduce

The purchase of this SVE Basic Skill Booster
program carries with it the permission to
reproduce the worksheets by the purchasing
organization only for the exclusive educational
use of that organization. Reproduction must be
for noncommercial purposes only.
All material is protected by copyright. Reproduc-
tion, in whole or in part, for any other segment of the
material, or for any other purposes, is
prohibited unless written permission is obtained
from the copyright owner.

SVE Basic Skill Boosters 20607-SB

Science Corner: Weather Watch

Know These Words!

Getting Ready

Thin Air?

A Growing Problem

The Water Cycle

Try It Yourself!

Cloud Charting

You Be the Scientist!

Changing Weather

Be the Forecaster!

Tornado! Take Cover!

Hurricane Alert!

Use with the program: Weather Watch

Name_____

Know These Words!

Look at the words in the box at the bottom of the page. Try to find them in the puzzle.
Circle them as you find them, then check off each word. The first one has been
done for you.

```
S  A  C  S  M  O  U  C  L  P
T  O  T  E  O  D  R  L  A  R
U  P  E  L  N  R  E  I  T  O
D  E  T  E  I  I  S  C  A  G
E  N  A  C  T  V  O  K  R  R
N  I  L  T  O  E  R  R  A  A
T  A  L  L  R  I  L  D  O  M
D  R (S  A  V  E) L  E  T  D
I  N  P  R  I  N  T  L  O  I
S  T  R  I  N  G  L  E  R  S
K  A  M  O  U  S  L  E  A  K
O  M  E  N  U  T  R  E  N  D
L  O  P  O  I  N  T  E  R  S
```

✔ save	__ open	__ program disk
__ pointer	__ menu	__ student disk
__ mouse	__ monitor	__ delete
__ print	__ select	__ click

Note: If you don't know what these words mean, check the user's card before you
start exploring *Weather Watch.*

Science Corner

Skill Objectives:
- to review computer terms
- to decipher a word puzzle

Use with the program: Weather Watch

Answer Key
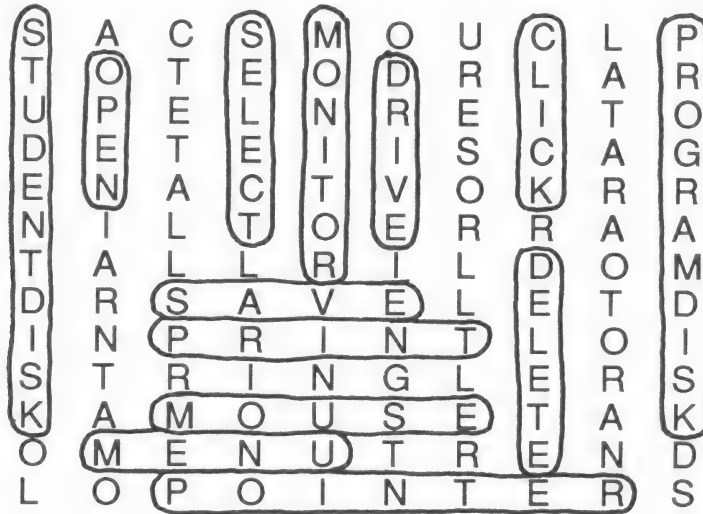
Use with the program: Weather Watch

Name_____

Getting Ready

Fill in the blanks with the following words. Circle the words as you use them.

start	wave	select	print
save	drop	click	move
point	take notes		

1 To_____, we put the program disk into the disk drive.

2 We press the button on the mouse to _____ it.

3 To_____ at something, we move the small white arrow on the screen.

4 To_____ something with the mouse, we click on it.

5 We hold down the open apple key on the keyboard to _____ something.

6 To_____,we click on something we have already selected.

7 To_____, we move something around, then move it away and drop it.

8 We have to use the menu bar if we want to _____.

9 To_____ something, we select DISK in the menu bar.

10 We can use the notebook to _____.

Note: If you don't know any of these words, check the user's card before you start exploring *Weather Watch*.

Use with the program: Weather Watch

Answer Key

1 start

2 click

3 point

4 select

5 move

6 drop

7 wave

8 print

9 save

10 take notes

Science Corner

Skill Objectives:
• to develop an understanding of
  the Earth's atmosphere

Use with the program: Weather Watch

Name_____

Thin Air?

1 Read the descriptions of the layers in the Earth's atmosphere. Draw lines to match each description with its name.

a) It shields the Earth from solar radiation.   stratosphere

b) It goes from about 50-650 miles above the Earth.   troposphere

c) It stretches for about 650 miles into space.   mesosphere

d) It is 5-11 miles above the Earth. Weather is   ozone layer
made here.

e) It goes from about 11-50 miles above the Earth.   thermosphere

2 On the back of this page, draw the layers of the Earth's atmosphere. Label them.

3 Which of the Earth's layers has the thinnest air?_____

4 Which layer of the Earth has the highest air pressure?_____

Science Corner

Skill Objectives:
• to develop an understanding of
  the Earth's atmosphere

Use with the program: Weather Watch

Answer Key

1 a) ozone layer

b) mesosphere

c) thermosphere

d) troposphere

e) stratosphere

2 Students should have drawn the Earth's layers in this order, from top to bottom:

thermosphere

mesosphere

ozone layer

stratosphere

troposphere

3 thermosphere

4 troposphere

Use with the program: Weather Watch

Name_____

A Growing Problem

Write answers to the following questions.

1 What is the ozone layer?

2 Why is it important to us?

Library work

Recently, some scientists have talked about a hole in the ozone layer. They are concerned about how this might affect us.

At the library, try to find the answers to the following questions. Write your answers below or on the back. Compare your answers with your classmates'.

1 Where is the hole?

2 What do scientists think has caused the hole?

3 Why is the hole a problem?

4 Do they know what we can do to stop the hole from getting bigger?

Use with the program: Weather Watch

Answer Key

1 The ozone layer is a layer in the Earth's atmosphere. It is partly in the stratosphere and partly in the mesosphere.

2 The ozone layer protects the Earth from the Sun's harmful radiation.

Library Work

Answers may vary, but should include some variation on the following:

1 The hole is found over Antarctica.

2 The ozone layer has been destroyed by environmental changes and increased pollution, such as automobile and factory emissions.

3 The hole lets in harmful radiation.

4 We should try to control/reduce various types of pollution.

Use with the program: Weather Watch

Name_____

The Water Cycle

Fill in the blanks with the following words. Circle the words as you use them.

sun	transpiration	water vapor	dust
clouds	evaporation	water	rain
condensation	runoff		

1 Energy from the _____ drives the water cycle.

2 The process of forming clouds is called_____.

3 When water vapor rises and meets cool air, it forms_____.

4 Water vapor condenses around_____ to form rain clouds.

5 _____rises from lakes because of the heat of the sun.

6 _____is a kind of precipitation.

7 _____ flows down from mountains to form streams and rivers.

8 Water vapor rising from a lake is called_____.

9 Plants contain a lot of _____.

10 When leaves are heated by the sun_____ occurs.

On the back of this page, make a drawing of the water cycle.

Use with the program: Weather Watch

Answer Key

1 sun
2 condensation
3 clouds
4 dust
5 water vapor
6 rain
7 runoff
8 evaporation
9 water
10 transpiration

Use with the program: Weather Watch

Name_____

Try It Yourself!

Do the following experiments. Write down your observations.

1 Put a plastic bag over a potted plant. Tie it tightly. Put it in a sunny place. Wait three days.

a) What do you see?

b) What part of the water cycle is this an example of?

2 Fill a plate with cold water. Put it on a sunny window sill. Leave it there for three hours.

a) What do you see?

b) What part of the water cycle is this an example of?

3 Take a walk around your neighborhood. Write down what you see and what parts of the water cycle they are examples of. Explore carefully–there are examples everywhere!

For example:
1 laundry on a clothes line: evaporation

2 puddle: precipitation

3 puddle drying up: evaporation

4

5

Continue the list on the back.

Use with the program: Weather Watch

Answer Key

1 a) Moisture collects on the sides of the bag.

b) Transpiration

2 a) There is less water on the plate after it has sat in the sun.

b) Evaporation

3 Answers will vary.

Science Corner

Skill Objectives:
• to develop an understanding of different cloud types
• to organize information into a chart

Use with the program: Weather Watch

Name_____

Cloud Charting

Fill in the chart using the following information:

contain rain   6,500 ft.   large and puffy

mean fair weather   10,000 ft.   look like a heavy blanket

name	height	special features
cirrus	25,000 ft.	Made of ice crystals. Wispy.
cumulus		
stratus		

Library Work

1 Go to the library. Find out about about other types of clouds. Add the information to your chart. Share your information with your classmates and together make a large chart to display in the classroom.

2 Use the chart to take turns making weather forecasts. Try to use some of the words and gestures that the weather forecasters use on TV.

Science Corner

Skill Objectives:
• to develop an understanding of different cloud types
• to organize information into a chart

Use with the program: Weather Watch

Answer Key

name	height	special features
cirrus	25,000 ft.	Made of ice crystals. Wispy.
cumulus	10,000 ft.	Large and puffy. Mean fair weather.
stratus	6,500 ft.	Look like a heavy blanket. Contain rain.

Library Work

1 Answers will vary, but might include additions such as cirrostratus, cirrocumulus, altostratus, altocumulus, stratocumulus, nimbostratus, and cumulonimbus, along with corresponding heights and special features.

2 Answers will vary, but encourage creative presentation.

Skill Objectives:
- to explore precipitation
- to improve experimentation and observation skills

Use with the program: Weather Watch

Name_____

You Be the Scientist!

Do the following experiments. Write down your observations.

1 Boil a kettle of water. Take a chilled spoon (put it in the refrigerator or freezer if possible). Hold the spoon over the boiling water.

a) What do you see?

b) Why do you think this happens?

c) What process in nature is like this?

2 Take a bottle with a narrow opening. Fill it with very hot water. Put an ice cube over the opening.

a) What happens?

b) Why do you think this happens?

Library Work

When it doesn't rain for a long time, sometimes clouds are "seeded." Find out what cloud-seeding is and how it works. Below, write down in your own words what you learn. Compare your answer with your classmates'.

Skill Objectives:
* to explore precipitation
* to improve experimentation and observation skills

Use with the program: Weather Watch

Answer Key

1 a) Moisture drips down.
b) The steam (water vapor) condenses when it contacts the cold spoon.
c) rain

2 a) A small "cloud" forms at the top of the bottle.
b) The hot air rises from the water. When it reaches the cold ice cube, condensation occurs.

Library Work

Answers will vary, but should show that students have done some research.

Science Corner

Skill Objectives:
• to observe weather changes
• to make a basic table

Use with the program: Weather Watch

Name_____

Changing Weather

1 For four days, cut out the weather map from the newspaper.

2 Select six cities from different parts of the country. In the table, write down the high temperature in each city on the four days.

city	day 1	day 2	day 3	day 4

3 Now look at the maps again. Study the movement of hot and cold fronts across the country. Do you see any relationship between the temperatures of the cities over the four-day period and the movement of the fronts? Describe below what you observe. Write one or two sentences about how the temperature changed (or stayed pretty much the same) in each city. Then discuss your observations in small groups.

4 Try to forecast what the weather will be like in the cities in the next few days. Then check the newspaper to see what actually happens. How close were you?

Science Corner

Skill Objectives:
• to observe weather changes
• to make a basic table

Use with the program: Weather Watch

Answer Key

Answers will vary for all questions, depending on the cities chosen, but students should display a basic understanding of fronts and temperature change.

Skill Objectives:
• to explore temperature and clouds
• to observe events and maintain records

Name_____

Be the Forecaster!

Check the temperature where you live for four days. Also, carefully observe the clouds on those four days. Below, fill in the temperatures and draw what the clouds looked like on each day. Is there a relationship between the clouds and the temperature?
Describe your observations on the back of this page.

Day 1

Temperature:

Day 2

Temperature:

Day 3

Temperature:

Day 4

Temperature:

Science Corner

Skill Objectives:
• to explore temperature and clouds
• to observe events and maintain records

Use with the program: Weather Watch

Answer Key

Answers will vary.

Science Corner

Skill Objectives:
• to learn about tornadoes
• to develop basic research skills

Use with the program: Weather Watch

Name_____

Tornado! Take Cover!

Library Work

Go to the library and do some research about tornadoes. Then answer the following questions.

1 Where do tornadoes form?

2 When do they occur?

3 How do they form?

4 How do we know a tornado is coming?

5 For how long do they usually touch down on the ground?

6 What are some of the differences you see between a tornado and a hurricane? In the space below write down your ideas. Then, in small groups, discuss your ideas with your classmates.

Skill Objectives:
• to learn about tornadoes
• to develop basic research skills

Use with the program: Weather Watch

Answer Key

1 Tornadoes occur in inland areas, such as the Midwest in the United States.

2 They occur in the spring and later summer when the weather is changing.

3 They form when a lower layer of cool, moist air meets warm, dry air. The lower layer of air begins to rotate with the upper layer. It rotates faster and faster because of force from the center.

4 By radar.

5 Only minutes.

6 Answers will vary.

Science Corner

Skill Objectives:
- to learn about hurricanes in the past
- to research and report on a historical event

Use with the program: Weather Watch

Name_____

Hurricane Alert!

1 Go to the library. Find out as much as you can about one hurricane that really happened. Fill in the information below.

Name of hurricane:

Date it happened:

Strength:

Path (place it happened):

Damage:

Other facts:

2 Organize your information into a report. Use the back of this paper.

3 Prepare for a TV broadcast, in which you play the reporter. Describe the hurricane you have researched. Arrange a large map at the front of the room. Find a pointer or stick to use to trace the path of the hurricane on the map.

4 Take turns going to the front of the room to present your reports.

Skill Objectives:
- to learn about hurricanes in the past
- to research and report on a historical event

Use with the program: Weather Watch

Answer Key

Answers will vary.

USER'S CARD

The pointer is used to **MOVE**, **SELECT**, or **DROP** things on the screen.

To MOVE
Mouse—Move the mouse.
Keyboard—Press ↑↓←→ keys. Press ⌘ key at the same time to move faster.

To **SELECT**, place the pointer on the word or object and CLICK, like this:
Mouse—Press the mouse button.
Joystick/KoalaPad/Touch Window—Press the CONTROL button.
Keyboard—Press the option key (or key).

To **DROP** something, CLICK or press again.

MENU BAR The Menu Bar has six things you can choose:
ACTORS, OBJECTS, BACKGROUNDS, WORDS, DISK, PRINT.

ESC Press this key to open or to go to the Menu Bar. To close or remove the Menu Bar from the screen, press ESC again.
Note: When typing in text on the screen, you must press RETURN to activate the ESC key.

CLICK on this to see the ACTORS.
ACTORS are things that move. CLICK on ↑ or ↓ to see all the ACTORS. To add an ACTOR to your screen, point to it, CLICK, and move it where you want it. To DROP it, CLICK again.

CLICK on this to see the OBJECTS.
OBJECTS are things that do not move on their own. Follow the same steps as for ACTORS.

CLICK on this to see the BACKGROUNDS.
BACKGROUNDS can be used to change the background color of a scene. Follow the same steps as for ACTORS.

CLICK on this to see the WORDS.
WORDS are labels or names that you can add to your scene. Follow the same steps as for ACTORS.

COPY

To copy an ACTOR or OBJECT in your scene, CLICK on it, then press the SPACE BAR.

Note: The copy of the actor cannot move.

WRITE

Use the keyboard to write. Put the pointer where you want to begin writing. When you get to the end of a line, press RETURN to go to the next line. CLICK on [A B C] in the Menu Bar to find words to label your scenes.

DELETE (to erase)

Press this key to delete a previous letter, number, or character (backspace delete).

Hold down DELETE to erase a line of words.

To delete a line of text other than the one you are on, place the pointer where you want to begin, CLICK on that spot, then press DELETE.

OPEN (to see)

To OPEN a file, CLICK on [icon]. Then CLICK on OPEN. CLICK on ⬆ or ⬇ to see your file names. When you see the file you want, CLICK on ➡ to see the numbers. When you see the number of the file you want, CLICK on OPEN, or anywhere on the bar.

SAVE

TO SAVE a scene, first pick a name and number for your file. **If you change or leave a screen before saving It, your work will be lost.**

CLICK on [icon], then CLICK on SAVE. Move the pointer to NEW NAME and CLICK again. Type your new name. Move the pointer to NEW NUMBER and CLICK. Type your new number.

Note: You can save only one screen at a time. CLICK on the word SAVE or anywhere on the bar to save your file.

PRINT

Turn on the printer. Then CLICK on [icon]. CLICK on your print option and follow the instructions.

Science Corner
Program Features

To WAVE something, CLICK on it, MOVE it back and forth over a target, put it back where you want it, CLICK on it again, then MOVE the pointer away.

CLICK on this to see general directions or information.

CLICK on the information to remove it from the screen.

CLICK on this to see more directions or information.

CLICK on the information to remove it from the screen.

CLICK on this to see questions to think about.

CLICK on the questions to remove them from the screen.

CLICK on this to go to the Selection Screen. From there you can choose another unit to work on.

CLICK on this to go to the Notebook, where you can write down what you have seen, learned, or are thinking about.

CLICK on this to go to the next screen.

CLICK on this to go back a screen.

CLICK on this to clear or reopen a screen.

THANK YOU FOR BUYING
THIS QUALITY SOFTWARE PRODUCT!

Thank you for purchasing this software product from
Mindscape Educational Software and SVE.
We're dedicated to providing you with high quality software
to meet your educational needs. If you have suggestions or ideas
for products to meet those needs, let us hear from you.
Together, we can make a difference in the education of your students.

WE HOPE YOU ENJOY OUR SOFTWARE!

MINDSCAPE
EDUCATIONAL
SOFTWARE
A Division of **SVE**

LIMITED WARRANTY

Mindscape Educational Software and SVE warrant to the original purchaser of this computer software product that the recording medium on which the software programs are recorded will be free from defects in materials and workmanship for six (6) months from the date of purchase. Defective media returned by the purchaser during the six (6) month period will be replaced without charge, provided that the returned media have not been subjected to misuse, damage, or excessive wear.

Return defective media to point of purchase. You must include a dated proof of purchase, a brief statement describing the defect, and your return address.

Mindscape Educational Software and SVE do not warrant that the programs will meet the purchaser's specific requirements. Any statements made concerning the utility of the programs are not to be construed as express of implied warranties.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, WHETHER ORAL OR WRITTEN, EXPRESS OR IMPLIED. ANY IMPLIED WARRANTIES, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE EXCLUDED.

IN NO EVENT WILL MINDSCAPE EDUCATIONAL SOFTWARE OR SVE BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND IN CONNECTION WITH THE SOFTWARE PRODUCTS.

Some states do not allow the exclusion or limitation of incidental or consequential damages or limitations on how long an implied warranty lasts, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Address all correspondence to:

Mindscape Educational Software
A Division of SVE
1345 Diversey Parkway, Chicago, Illinois 60614-1299
312/525-1500

SOFTWARE WARRANTY INFORMATION

Name_____ Title_____

School/Organization_____

Address_____

City_____ State_____ ZIP_____

School Phone (_____)_____ Fax (_____)_____

Name of product purchased:_____

Place of purchase:_____ Date of purchase:_____

Machine type:
    ( ) Apple II   ( ) Macintosh   ( ) IBM
    ( ) Tandy   ( ) Other_____
Grade level:
    ( ) Elementary (K-6)   ( ) Jr. High (7-9)   ( ) Secondary (10-12)
How did you learn of this program? .
    ( ) Catalog   ( ) Exhibit   ( ) Advertising
    ( ) Salesperson   ( ) Product review   ( ) Friend/colleague
    ( ) Other_____

PLEASE FILL OUT THIS CARD AND MAIL IT TODAY!

01582R