

no. A-165



counting critters

instructional computing courseware
for the **apple® II** computer



a product from the
mecc early learning series



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for the **apple**® II computer



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This manual is compatible
with
the Counting Critters diskette
Version 1.x

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INTRODUCTION

Counting Critters is a series of five programs designed to give preschool and kindergarten children individual practice on number and counting concepts.

In MATCH MAGIC, students practice visual discrimination of the numerals 1 through 20 by matching a numeral on a hat with the same numeral in a list.

COUNTING SAFARI helps students practice counting one to twelve safari animals.

In PET STORE, students are shown numerals from 1 to 12 and asked to put the corresponding number of puppies in a pet store window.

Two types of animals appear on the screen in COUNTING POND. Students distinguish between the groups and count just one type of animal.

In CIRCUS PUZZLES, students put numerals from 1 to 20 in sequence. As they enter the correct numerals, a dot-to-dot puzzle is completed.

Management Options allow you to modify the programs to meet the needs of your students. To access the Management Options, go to the main menu. While holding down the Control Key, type the letter A (Control-A). For complete instructions on using these options, refer to the "Use in an Instructional Setting" sections in this manual.

A hand-shaped pointer allows students to enter their answers easily. They need only move the hand to the answer they wish to choose and then press the Return Key. They can move the hand to their next choice by pressing the Space Bar, the Right-Arrow Key, or the Down-Arrow Key. If they wish to move to a previous choice, they can press the Left-Arrow Key or the Up-Arrow Key. Students who are familiar with the keyboard can enter their response by simply typing the number keys.

You may turn the sound effects off **before** you begin a program by selecting Option 7 on the main menu, or you may turn them off **during** a program by holding down the Control Key and typing the letter S (Control-S).

You may leave a program by pressing the Escape (Esc) Key twice anytime the program is waiting for a response.

To use Counting Critters, you will need a Counting Critters program diskette, a 64K Apple computer, a monochrome or color monitor, and a disk drive.

Counting Critters is a product from the MECC Early Learning Series. This series presents opportunities for children to practice a wide variety of readiness skills. Additional products currently available include Arithmetic Critters, First-Letter Fun, Fun from A to Z, and Paint with Words.

DESCRIPTION

In MATCH MAGIC, students practice visual discrimination of the numerals 1 through 20 by matching a numeral on a magician's hat with the same numeral as it appears in a list. When students correctly match a numeral, the program illustrates the meaning of the numeral by showing the corresponding number of animals.

Curriculum Area: Mathematics
Subject: Arithmetic
Topic: Visual Discrimination, Number
Type: Drill and Practice
Reading Level: Pre-reading
Grade Range: Preschool - Kindergarten
Classroom Use: Individual

LEARNING OBJECTIVES

After using this courseware, the student should be able to:

- discriminate between the numerals 1 through 20;
- recognize that numerals are symbols used to represent numbers.

MATCH MAGIC

PROGRAM PREVIEW

MATCH MAGIC allows students two chances to match one of four numerals in a list with a numeral shown on a hat. When students answer correctly (Figure 1), a set of objects appears. The set contains the number of rabbits, birds, or fish shown on the hat, thus illustrating the concept of number. Then the animals disappear one at a time and are replaced by numerals in sequence; this shows students how the objects can be counted.

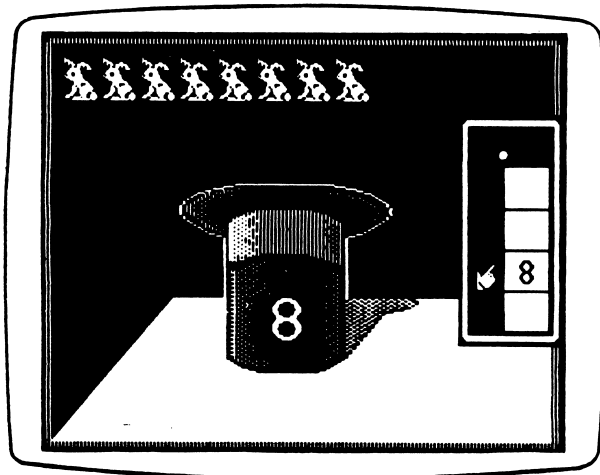


Figure 1

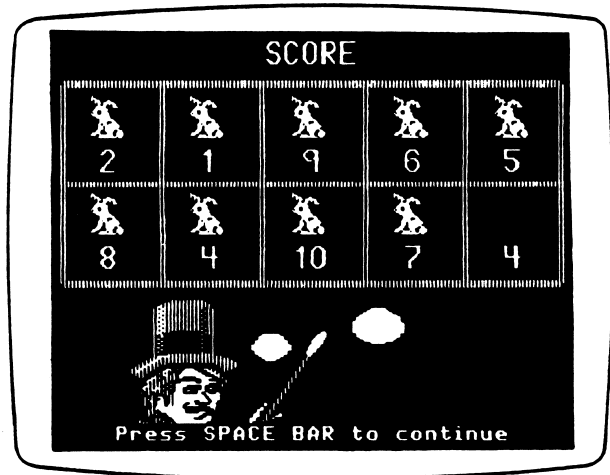


Figure 2

When students answer incorrectly, a slash is drawn through their answer. If their first answer is incorrect, the slash is removed from the numeral before their second attempt. If their second answer is incorrect, all choices except the correct one are erased. The correct numeral and the numeral on the hat flash. The program does **not** illustrate the numeral with a set of objects.

After students have answered a problem correctly or after they have missed it twice, the program pauses ten seconds so that they can examine the correct answer. Students can override this pause by pressing the Space Bar.

When they have completed ten items, students see a screen that shows their score (Figure 2). Ten boxes, each containing a numeral, appear at the top. For each problem answered correctly on the first try, an animal appears in the box along with the numeral.

USE IN AN INSTRUCTIONAL SETTING

Preparation

MATCH MAGIC is already set to drill the numerals 1 through 10. If you would like to drill different numerals, use the Management Options to select numerals between 1 and 20. To access the Management Options, go to the main menu. While holding down the Control Key, type the letter A (Control-A). Select the first option, "Modify number ranges," on the Management Options menu. To modify the range shown for MATCH MAGIC, select Option 1.

Before students use the program, you should teach them to enter their answers either by moving the hand to their choice and pressing the Return Key or by typing the correct numeral. You may want to put a brightly colored sticker on the Return Key to help students identify it.

Using the Program

Encourage students to name out loud the numerals that appear on the hat.

When the students answer correctly, encourage them to count the rabbits, birds, or fish as they emerge from the hat and appear at the top of the screen.

Follow-up

- Create a set of forty cards containing two copies of each numeral from 1 through 20. Let the students use the cards to play Concentration or Fish. Add an additional card that has a picture of a clown and let the students play Old Maid.
- Give students several old magazines or workbooks and several sheets of construction paper. On the top of each sheet of paper draw a different numeral (1 through 9). Direct the students to look through the magazines and workbooks, cut out examples of the numerals, and paste the examples on the correct sheets.
- Have students identify numerals on Handout 1, "Numbers, Numbers, Numbers." Use either of the following suggestions:
 - a. Direct students to circle all of the examples of a given number. For example, your instructions might be "Circle each number 6."
 - b. Direct students to color examples of each numeral different colors. For example, your instructions might be "Color these numbers: 1 = Red, 2 = Blue, 3 = Yellow."
- Have students use the COUNTING SAFARI program.

DESCRIPTION

In COUNTING SAFARI, students practice counting one to twelve safari animals that Charlie Chimp sees from his tree.

Curriculum Area: Mathematics
Subject: Arithmetic
Topic: Counting
Type: Drill and Practice
Reading Level: Pre-reading
Grade Range: Preschool - Kindergarten
Classroom Use: Individual

LEARNING OBJECTIVES

After using this courseware, the student should be able to:

- count one to twelve identical objects;
- identify the numeral that represents the corresponding number of objects.

COUNTING SAFARI

PROGRAM PREVIEW

COUNTING SAFARI gives students three chances to help Charlie Chimp count the animals he sees. Students match the number of animals they count with one of four numerals in a list. When students answer correctly on the first attempt (Figure 1), Charlie Chimp jumps up and down, swings from a branch, claps, or runs to the end of the limb and back. If students answer correctly on the second or third attempt, Charlie Chimp claps.

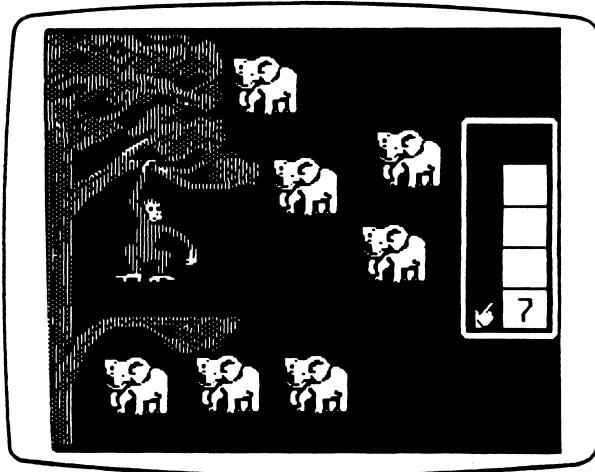


Figure 1

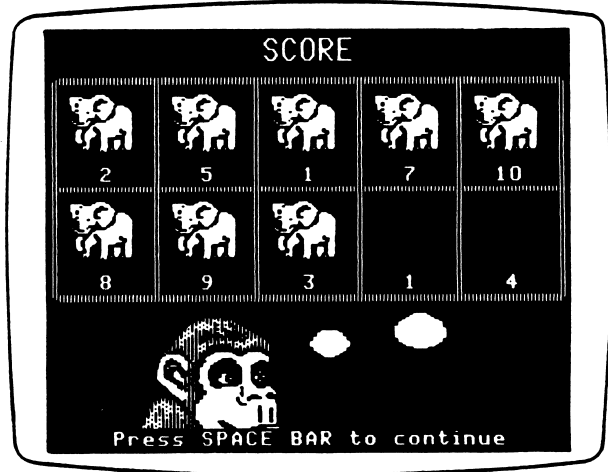


Figure 2

When students answer incorrectly, a slash is immediately drawn through their answer, and Charlie Chimp shakes his head. On the first incorrect answer, each of the safari animals flashes one at a time. A note on an ascending scale is played when each animal flashes. On the second incorrect answer, the program numbers the animals as the ascending scale is played again. After a moment, the numbers disappear. If students miss the problem a third time, the numbers reappear below the animals and all choices except the correct one are erased.

After students have answered a problem correctly or after they have missed it three times, the program pauses ten seconds for them to examine the correct answer. Students can override this pause by pressing the Space Bar.

When they have completed ten items, students see a screen that shows their score (Figure 2). Ten boxes, each containing a numeral, appear at the top. For each problem answered correctly on the first try, an animal appears in the box along with the numeral.

USE IN AN INSTRUCTIONAL SETTING

Preparation

COUNTING SAFARI is already set to drill the numbers 1 through 10. If you would like to drill different numbers, use the Management Options to select numbers between 1 and 12. To access the Management Options, go to the main menu. While holding down the Control Key, type the letter A (Control-A). Select the first option, "Modify number ranges," on the Management Options menu. To modify the range shown for COUNTING SAFARI, select Option 2.

Before students use the program, you should teach them to enter their answers either by moving the hand to their choice and pressing the Return Key or by typing the correct numeral.

A common problem for students learning to count is not knowing where to start and stop counting objects. As a result, they may count some objects more than once or not count all the objects. If you have students with this problem, you should teach them a systematic pattern for counting a group of objects before they use COUNTING SAFARI. The feedback for incorrect answers in COUNTING SAFARI teaches students to start at the top left and count one row at a time, moving from left to right and from top to bottom.

Using the Program

You may wish to encourage students to touch each animal by placing their finger on the screen as they count them.

When students answer incorrectly, encourage them to count the animals as they flash on the screen or as they are numbered by the program.

Follow-up

- In an open area of your classroom, prepare ten boxes. In each box put one to twelve of one of the items found on Handout 2, "Counting in Our Classroom." Copy the handout and distribute it to the students. Then allow them to come to the area, count the objects in the boxes, and record the number of each item on their handout. When they have finished, you may ask them to compare their answers.
- Have students use the PET STORE and COUNTING POND programs.

DESCRIPTION

In PET STORE, students put one to twelve identical puppies in Suzy Shopkeeper's pet store window.

Curriculum Area: Mathematics

Subject: Arithmetic

Topic: Counting

Type: Drill and Practice

Reading Level: Pre-reading

Grade Range: Preschool - Kindergarten

Classroom Use: Individual

LEARNING OBJECTIVES

After using this courseware, the student should be able to:

- create a group of one to twelve identical objects;
- identify the number of objects represented by a numeral.

PROGRAM PREVIEW

In PET STORE, students must put the correct number of puppies into the window of Suzy Shopkeeper's pet store. The correct number is shown on the sign that appears below the window.

To put puppies in the window, students either move the hand to the box labeled IN and then press the Return Key, or they type the letter I. Each time they press the Return Key or type the letter I, another puppy appears. If they have added too many puppies, they can remove them either by selecting the box labeled OUT and pressing the Return Key or by typing the letter O. When students have finished adding puppies, they move the hand to the stop sign and press the Return Key, or they type the letter S.

When students put the correct number of puppies in the window, Suzy Shopkeeper nods her head (Figure 1). If their answer is correct on the first attempt, the puppies also wag their tails.



Figure 1

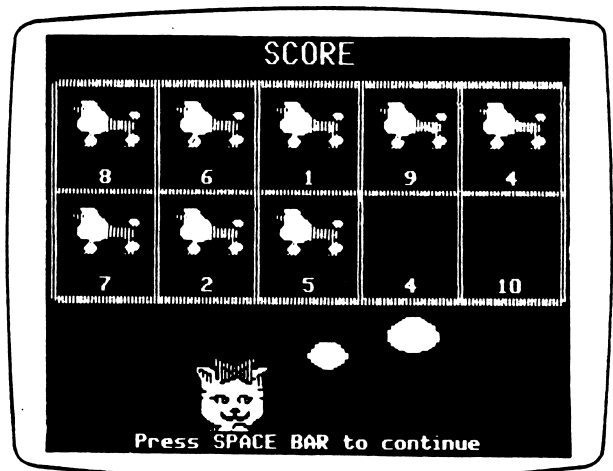


Figure 2

When students answer incorrectly, Suzy shakes her head. On the first incorrect answer, all of the puppies disappear from the window. On the second incorrect answer, the program numbers the puppies. If the students have not put enough puppies in the window, the program will add them automatically. If the students have put too many puppies in the window, the program will make the extra ones disappear. The numeral on the "for sale" sign flashes.

After students have answered a problem correctly or after they have missed it twice, the program pauses ten seconds for them to examine the correct answer. Students can override this pause by pressing the Space Bar.

When they have completed ten items, students see a screen that shows their score (Figure 2). Ten boxes, each containing a numeral, appear at the top. For each problem answered correctly on the first try, a puppy appears in the box along with the numeral.

USE IN AN INSTRUCTIONAL SETTING

Preparation

PET STORE is already set to drill the numbers 1 through 10. If you would like to drill different numbers, use the Management Options to select numbers between 1 and 12. To access the Management Options, go to the main menu. While holding down the Control Key, type the letter A (Control-A). Select the first option, "Modify number ranges," on the Management Options menu. To modify the range shown for PET STORE, select Option 3.

Note that answering questions in PET STORE is a two-step process. Make sure that your students understand that they must put puppies in the window and, when finished, they must tell the computer. Refer to page 9 for complete details.

You will need to tell non-reading students what the "for sale" sign says.

Using the Program

You may wish to encourage students to count out loud as they add or remove puppies; this will help them keep track of the puppies they have entered.

Follow-up

- Gather twenty popsicle sticks and a set of cards containing the numerals 1 through 12. Students in groups of two can use the materials to practice creating sets of one to twelve objects. Have the first student take a card. The second student should then create a set containing the corresponding number of popsicle sticks. Students take turns drawing a card and creating a set of popsicle sticks.
- Give students several old magazines or mail-order catalogs and several sheets of construction paper. On the top of each sheet of paper draw a different numeral (1 through 12). Direct the students to look through the magazines and catalogs, cut out enough similar objects (such as shoes) to create a set of the size shown at the top of each page, and paste the pictures on the sheets. For example, students might cut and paste five shoes on a sheet that has the numeral 5 at the top.
- Have students use the COUNTING POND program.

DESCRIPTION

In COUNTING POND, students feed a frog as they correctly count one to twelve identical objects in a pond that contains two types of objects.

Curriculum Area: Mathematics

Subject: Arithmetic

Topic: Counting

Type: Drill and Practice

Reading Level: Pre-reading

Grade Range: Preschool - Kindergarten

Classroom Use: Individual

LEARNING OBJECTIVES

After using this courseware, the student should be able to:

- distinguish between two types of objects and count only the type requested;
- count one to twelve identical objects;
- identify the numeral that represents the corresponding number of objects.

COUNTING POND

PROGRAM PREVIEW

In COUNTING POND, students get three chances to count mixed groups of objects in a pond. Students match the number of animals they count with one of four numerals in a list.

When students answer correctly (Figure 1), the frog in the foreground extends its tongue. As students get consecutive problems correct on first attempts, the frog's tongue gets longer. On the third consecutive correct answer, the frog's tongue reaches the dragonfly, and the frog eats it.

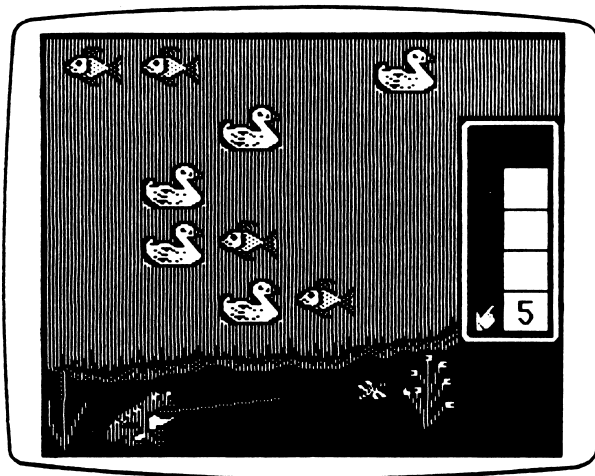


Figure 1

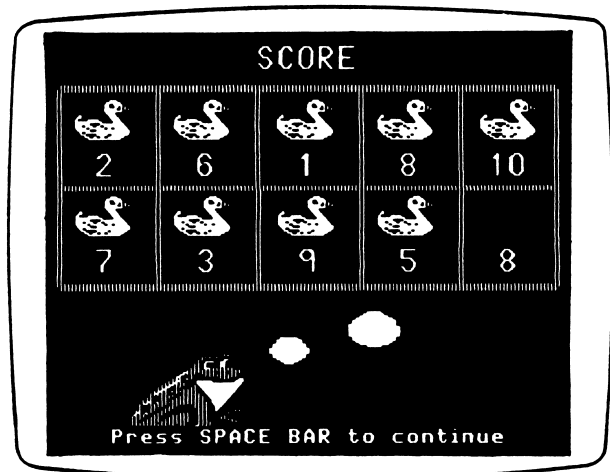


Figure 2

When students answer incorrectly, a slash is immediately drawn through their answer. On the first incorrect answer, the objects in the group to be counted flash one at a time. A note on an ascending scale is played for each object that flashes. On the second incorrect answer, all objects in the group **not** being counted are erased. If students miss the problem a third time, all answers except the correct one are erased.

After students have answered a problem correctly or after they have missed it three times, the program pauses ten seconds so that they can examine the correct answer. Students can override this pause by pressing the Space Bar.

When they have completed ten items, students see a screen that shows their score (Figure 2). Ten boxes, each containing a numeral, appear at the top. For each problem answered correctly on the first try, an animal appears in the box along with the numeral.

USE IN AN INSTRUCTIONAL SETTING

Preparation

COUNTING POND is already set to drill the numbers 1 through 10. If you would like to drill different numbers, use the Management Options to select numbers between 1 and 12. To access the Management Options, go to the main menu. While holding down the Control Key, type the letter A (Control-A). Select the first option, "Modify number ranges," on the Management Options menu. To modify the range shown for COUNTING POND, select Option 4.

Before students use the program, you should teach them to enter their answers either by moving the hand to their choice and pressing the Return Key or by typing the correct numeral.

You will want to tell non-reading students that the phrase "How many" means that they should count the objects shown.

Using the Program

You may wish to encourage students to touch each object by placing their finger on the screen as they count them.

When students answer incorrectly, encourage them to count the objects as they flash on the screen.

Follow-up

- Have students count the examples of one or more numerals on Handout 1, "Numbers, Numbers, Numbers." For example, your instructions might be "Circle each 2. How many are there?"
- In an open area of your classroom, prepare five boxes. In each box put one to twelve of two of the items found on Handout 2, "Counting in Our Classroom." Copy and distribute the handout to the students. Then allow them to come to the area, count the objects in the boxes, and record the number of each item on their handout. When they have finished, you may have them compare their answers.
- Have students use the CIRCUS PUZZLES program.

DESCRIPTION

CIRCUS PUZZLES reveals a dot-to-dot picture as students identify the numerals that complete the sequence in the puzzle.

Curriculum Area: Mathematics

Subject: Arithmetic

Topic: Numerical Sequence

Type: Drill and Practice

Reading Level: Pre-reading

Grade Range: Preschool - Kindergarten

Classroom Use: Individual

LEARNING OBJECTIVES

After using this courseware, the student should be able to:

- put the numerals 1 to 20 in order;
- identify a missing numeral in a sequence from 1 to 20.

C I R C U S P U Z Z L E S

PROGRAM PREVIEW

As the program starts, students see the beginning of a dot-to-dot puzzle (Figure 1). As each new dot is added to the puzzle, one of two things happens. The first possibility is that students will be asked to label the new dot. In this case, a question mark will appear next to the new dot, and four choices for labeling it will be shown in the boxes to the right (Figure 2). Students then select the numeral that goes with the dot. The second possibility is that the program will label the new dot and connect it to the previous dot. Note: Specifications set in the Management Options determine how many of the dots students must label.

When students answer correctly (Figure 3), the correct numeral replaces the box and the question mark next to the dot. The clown smiles and nods. The dotted line changes to a solid line, and the program goes on to the next dot.

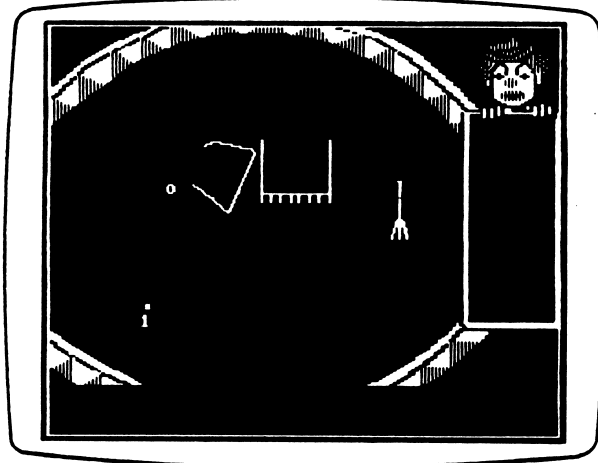


Figure 1

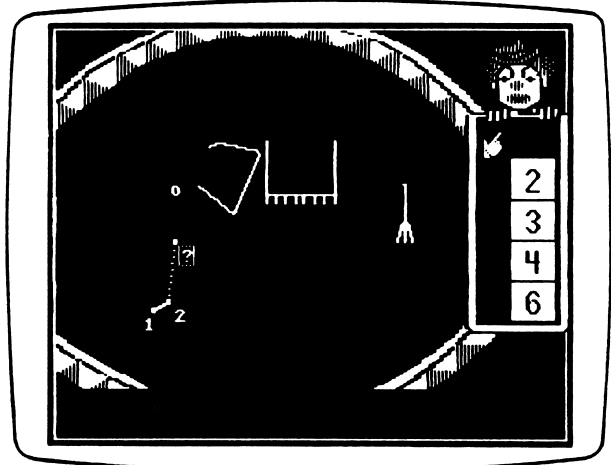


Figure 2

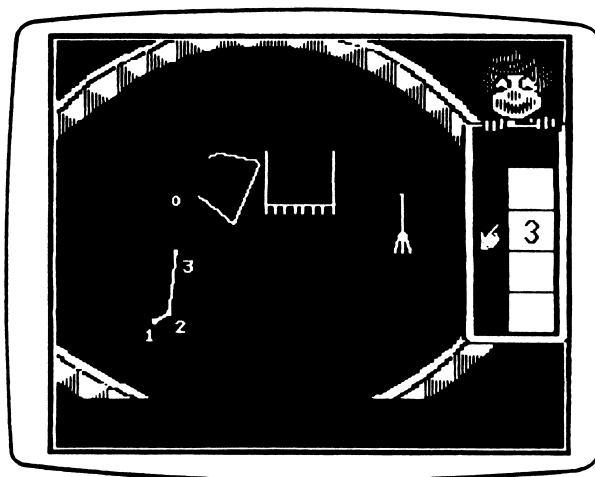


Figure 3

C I R C U S P U Z Z L E S

PROGRAM PREVIEW (continued)

If students answer incorrectly, a slash is drawn through their answer (Figure 4). The clown frowns and shakes his head. On the first incorrect answer, a sequence of numbers appears across the bottom of the screen. A box appears in the sequence in place of the correct answer. On the second incorrect answer, the correct answer replaces the box in the sequence at the bottom. If students miss the problem a third time, all choices except the correct one are erased from the list on the right side of the screen. The correct answer also appears next to the dot.

When all the dots have been connected, the puzzle in color and plays a little tune. Students may then view their final score on a screen that shows circus pedestals (Figure 5). The number of pedestals is the same as the number of dots that students were asked to label. A dog jumps from pedestal to pedestal, landing on one for each answer that was correct on the first attempt. If all of the answers were correct on the first try, the dog jumps through a hoop at the end of the pedestals.

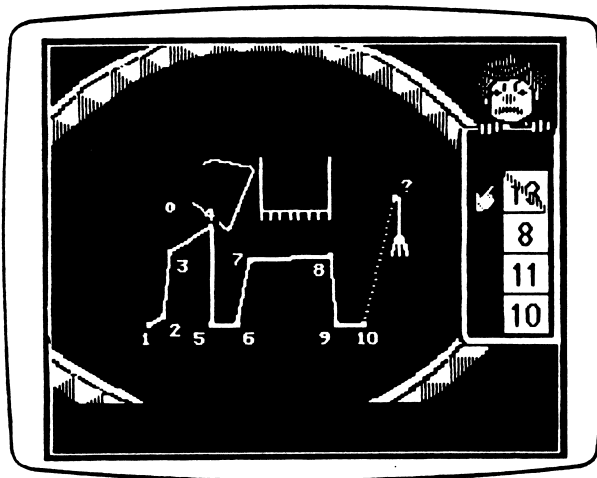


Figure 4

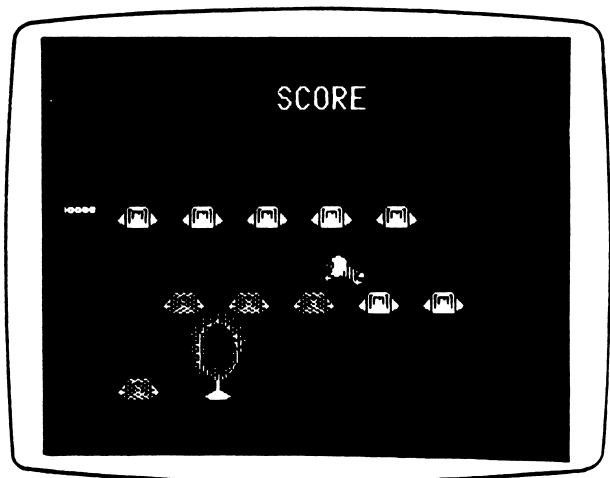


Figure 5

USE IN AN INSTRUCTIONAL SETTING

Preparation

CIRCUS PUZZLES is already set to present ten-dot puzzles that start with the numeral 1. The program gives one puzzle per session and requires the students to provide the number for every other dot in the puzzle. If you want to change the type of puzzles that are presented, you can use the Management Options to modify:

- the number of dots that appear in each puzzle;
- the frequency with which unlabeled dots appear;
- the starting number in each puzzle;
- the number of puzzles presented each time students use the program.

To access the Management Options, go to the main menu. While holding down the Control Key, type the letter A (Control-A). Choose the second option, "Select puzzle type in CIRCUS PUZZLES," on the Management Options menu. The program will show you the current puzzle description. If you want to modify it, choose the first option. The program will then show you menus for each of the four features of the puzzles. The Management Options automatically save your new puzzle description when you are done. Note that if you select twenty-dot puzzles, you are not allowed to choose the starting number. The program automatically starts twenty-dot puzzles with the numeral 1.

Before students use the program, you should teach them to enter their answers by moving the hand to their choice and pressing the Return Key or by typing the correct numeral.

Using the Program

When students have difficulty deciding on the numeral for a new dot, have them go back several dots and count up to the missing dot.

Follow-up

Create a set of twenty cards containing one copy of each numeral from 1 through 20. Use the cards for the following activities:

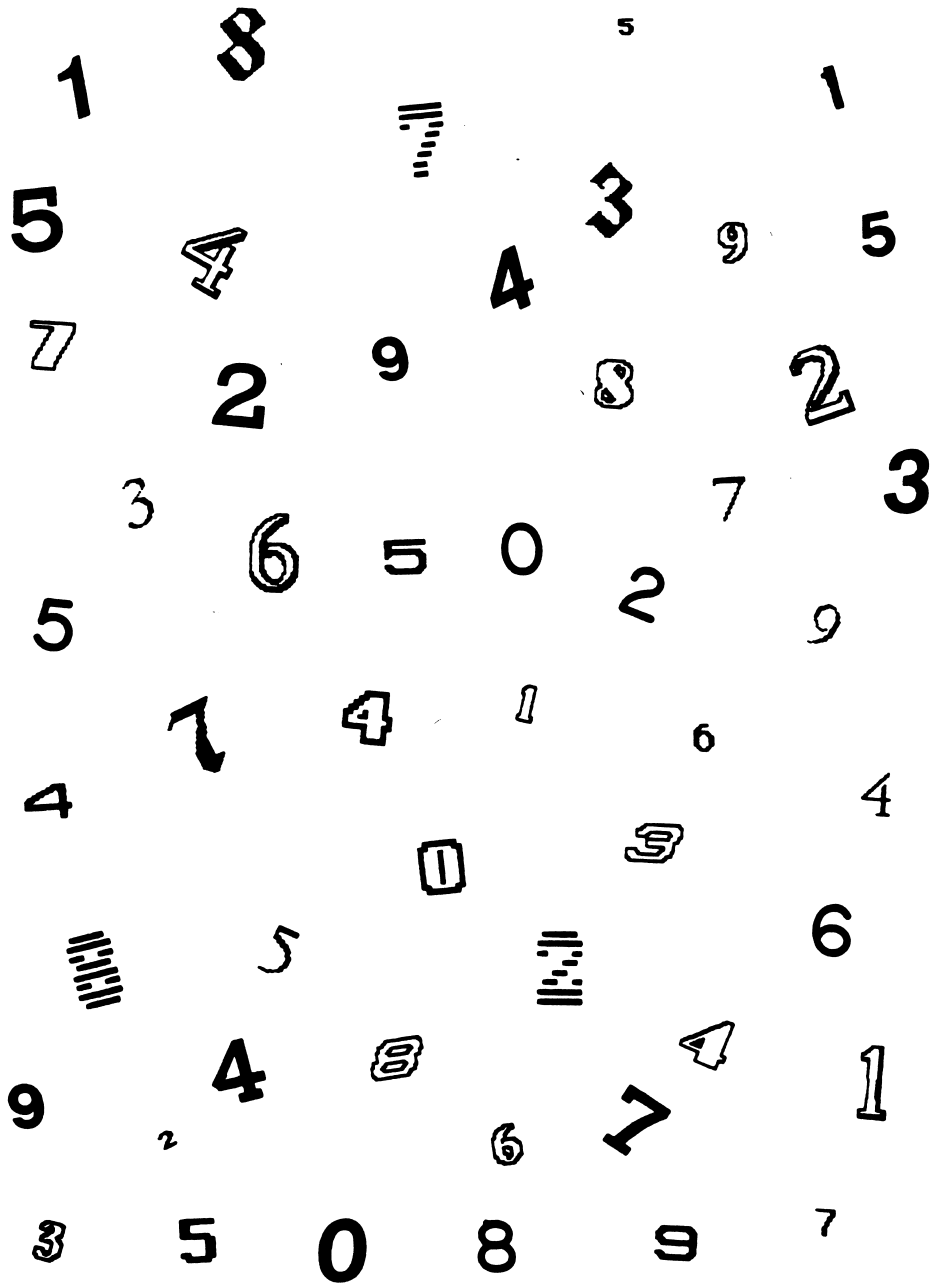
- Mix the cards and give the set to one student at a time. Time each student to see how quickly he or she can put the cards in order. Repeat the exercise on other days to give the students opportunities to improve their speed.
- Hand one card face down to twenty different students. Have the students turn their cards over. Then they can line up at the front of the room in the order of their cards.

STUDENT HANDOUTS

NUMBERS, NUMBERS, NUMBERS

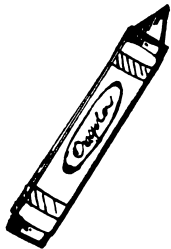
Name: _____

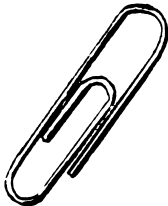
Directions: _____



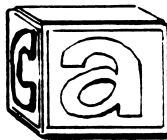
COUNTING IN OUR CLASSROOM

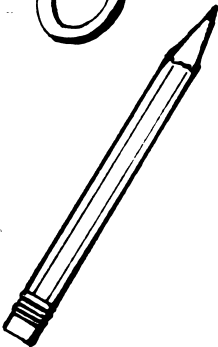
Name: _____

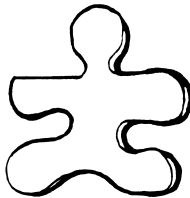


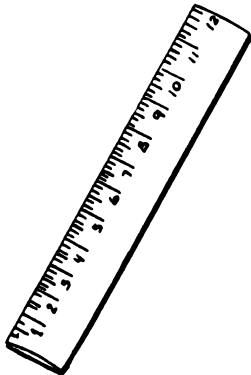


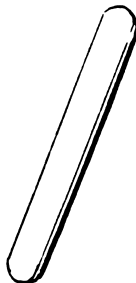












APPENDICES

CREDITS

Counting Critters was produced by a MECC development team that included Rich Childers, Susan Gabrys, Robert J. Granvin, Charolyn Kapplinger, and Loren Sucher.

MECC wishes to extend a special thanks to the following teachers and their students for their assistance in developing this package: Margaret Johnson, Clear Springs Elementary School, Minnetonka, Minnesota; and Bonnie Oxtan and Cheryl Ford, Central Park Elementary School, Roseville, Minnesota.

TO THE READER:

MECC has made every effort to ensure the instructional and technical quality of this courseware package. Your comments—as user or reviewer—are valued and will be considered for inclusion in any future version of the product. Please address comments to:

MECC Courseware Development
3490 Lexington Avenue North
St. Paul, MN 55126

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MECC conducts educational computing workshops for educators throughout the United States. For information on workshop schedules or to arrange a special training activity, write or call MECC Training Services.
- **Administrative Software**
MECC provides a variety of quality administrative microcomputer packages. For information on available packages and on training and maintenance contracts, write or call MECC Management Information Services.
- **MECC Network Newsletter**
Published regularly throughout the school year, MECC's newsletter focuses on MECC activities, services, and products. To obtain, write or call indicating your interest in the MECC Network newsletter.

For information on all the above items, use the MECC General Information telephone number: 612/481-3500.

- **Help Line**
If you have any problems using MECC software:
 - 1) make note of the name and version number of the product;
 - 2) note the brand and model of the equipment involved, as well as the type of printer card used if the problem concerns a printer;
 - 3) write or call the Help Line to describe the problem **(612/481-3660)**.

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