The Learning® Company

Rocky's
Boots®

*Learn logic and
basic circuit design by
building machines with this
electronic construction kit.*

Rocky's
Boots®

For:
☐ Ages 9 and up

Rocky's Boots runs on:
☐ Apple II, 48K
☐ Apple II +, 48K
☐ Apple IIe
☐ Apple IIc

☐ Commodore 64
☐ Commodore 128

☐ IBM PC, 128K
☐ IBM PCjr., 128K
☐ IBM PC XT
☐ IBM PC AT
☐ IBM PC Portable
☐ True IBM compatibles

☐ Tandy 1000, 128K

☐ Tandy Color Computer, 64K

With:
☐ Disk II
☐ Color monitor
   or TV required

☐ 1541 Disk Drive
☐ Color monitor
   or TV required

☐ Double-sided Disk Drive
☐ DOS 2.0 or higher
☐ Color/Graphics Monitor
   Adapter (except jr.)
☐ Color monitor or
   TV required

☐ Double-sided Disk Drive
☐ DOS 2.0 or higher
☐ Color monitor
   or TV required

☐ Single-sided Disk Drive
☐ Color monitor
   or TV required

Optional:
☐ Joystick
☐ Mouse (Apple only)

Credits

Author
Warren Robinett

Programmers
Warren Robinett
Leslie Grimm
Pete Rowe

MS-DOS Version Programmers
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Picodyne

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Tandy Color Computer Version
Robert Friele
Andy Stadler
Dave Steckler
Daron Stinnett

Introducing...

The Learning Company

Since its beginning in 1982, The Learning Company has been widely recognized as the leader in educational software. Our innovative products have won "software of the year" awards from *Learning Magazine* and *Parents' Choice*, "critics' choice" awards from *Family Computing*, and earned the coveted approval of the National Education Association. Developed and evaluated by a team of educators, program designers, and educational software specialists, our programs have set the highest industry standards for educational quality and design excellence. We've combined imaginative graphics, the best in animation and program design, and proven educational theory to bring you the finest educational software available today.

Introducing...

Rocky's Boots

Hailed as a software classic by the *New York Times*, the award-winning Rocky's Boots helps develop skills in logical problem solving, abstract reasoning, and creative thinking. The concepts of electronic circuitry, circuit design, and logic are explored in a motivating environment where players invent machines to solve puzzles and win over 30 different games, including games they design themselves. By experimenting with simulated real-world electronic parts and "electricity," players as young as 9 years old learn basic computer logic.

The five interactive tutorials in Rocky's Boots are carefully sequenced and paced to teach the basic moves and the concepts of circuit design. Players are introduced to such electronic components as wires, logic gates (AND, OR, and NOT), flipflops, clocks, and delays, as well as devices unique to Rocky's world, such as clackers, thrusters, and sensors. Orange "electricity" visually flows through the parts and wires, so players can see exactly how their circuits work. Practice rooms at the end of most tutorials encourage players to build imaginative machines and try them out.

Young inventors apply their skills by building logic machines in over 30 games that gradually increase in sophistication and challenge. The program features a "Make Your Own" game where players create their own targets and sensors, as well as the machines to solve the game. Because the games provide almost unlimited possibilities for experimentation, Rocky's Boots will be played again and again, for years to come.

Introducing...

The Author

Warren Robinett, M.S., is the designer and programmer of Rocky's Boots. Robinett was one of Atari, Inc.'s original home video game designers and created one of the game industry's first animated adventure programs. In the award-winning Rocky's Boots, Robinett merges his computer science background with his game design expertise. He earned degrees from the University of California at Berkeley and Rice University.

# Contents

Welcome to Rocky's Boots

Have you ever wondered how your computer works? It's an amazing machine, really, but not as complex as you might think. In Rocky's Boots, you'll work with some of the same electronic parts that engineers use to build computers. The machines you build won't boot disks, but they will boot targets out of a kicking area to win games for you. That's the idea behind Rocky's Boots.

To build winning machines, you learn to connect wires to electronic parts—like logic gates, timers, and switches—and to devices that turn the machines on or make things happen. You'll see orange "electricity" flow through the parts and wires and make the machines work. As you do all this, you will be learning how to reason—figuring out what belongs with what, why things work, and how to form logical solutions. You will also be learning about the basics of the electronic circuitry and logic behind what makes computers "tick." In fact, the logic you use to build machines is the same logic used to write the programs that make computers work.

There are 90 different rooms to explore in Rocky's Boots. Some are for learning. Some are for practice. Some have enough puzzles to challenge you for months, even years. There is even a special game design room called "MAKE YOUR OWN." Here you can apply your creative thinking skills and invent any number of your own mind-boggling games.

What you need to learn is introduced sequentially through the six programs in Rocky's Boots. Begin with the first program, HOW TO MOVE, before going to the second program, BUILDING MACHINES. There you learn things you will need for the third program, then the fourth, and so on. If this is the first time you have played Rocky's Boots, start at the beginning to build the skills you need. Take your time. Learn everything step by step. Then, who knows? Maybe one day you'll be a computer engineer!
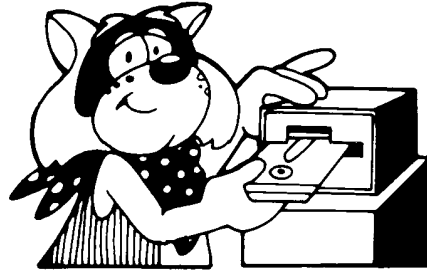
P.S. Some people may think that Rocky's Boots is just for fun. To see what you are learning, turn to THE LEARNING LIST on page 30.
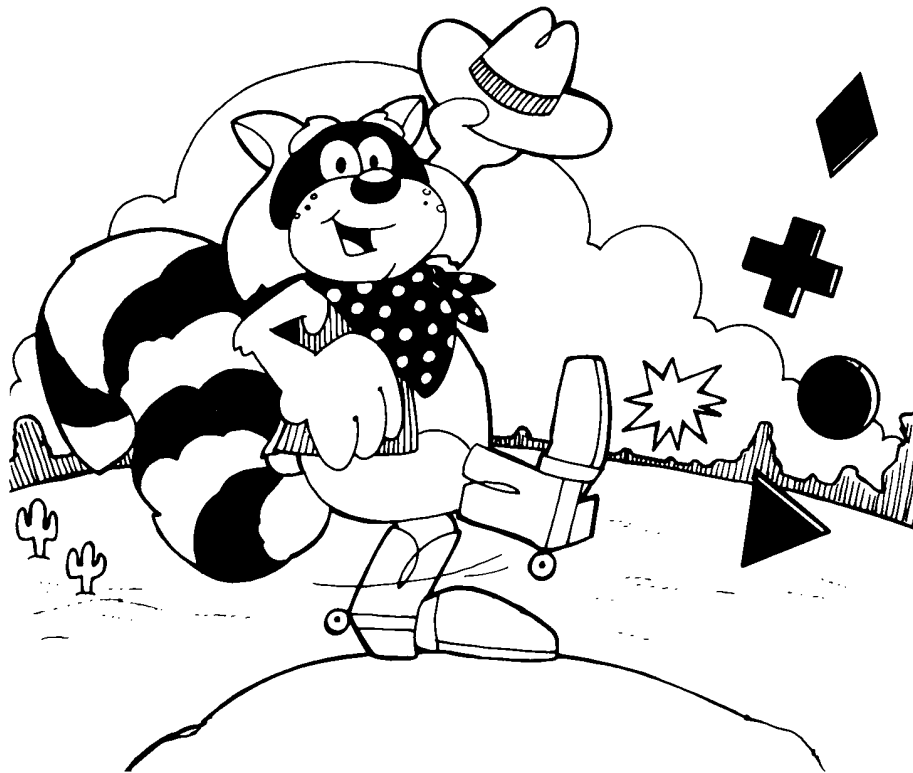
Getting Started

On an Apple Computer:
☐ Put your Rocky's Boots disk
  in the disk drive and close
  the door.
☐ Turn on the computer and
  monitor.

On a Commodore Computer:
☐ Turn on your disk drive, then your monitor. Wait until the red light
  on the disk drive goes out.
☐ Put your Rocky's Boots disk in the disk drive and close the door.
☐ If you are using a joystick, be sure it is plugged into port #2.
☐ Turn on the computer. If you have a Commodore 128, hold down
  the Commodore key for a few seconds when you turn on the com-
  puter.
☐ When you see the READY prompt on the screen, type:
  LOAD "TLC",8,1
☐ Press ⌐RETURN⌐ . You will see:
  SEARCHING FOR TLC
  LOADING

On an IBM, IBM-Compatible, or Tandy 1000 Computer:
Before you use your Rocky's Boots disk for the first time, you need to
add DOS to the game disk. See page 39 (or your DOS manual) for
instructions.

Once DOS is on your game disk, follow these instructions the next
time you want to play Rocky's Boots.
☐ Put your Rocky's Boots disk in the disk drive and close the door.
☐ Turn on the computer and monitor.
☐ On a Tandy 1000 plug the joystick into the right hand game port
  marked JOYSTICK ⓡ .
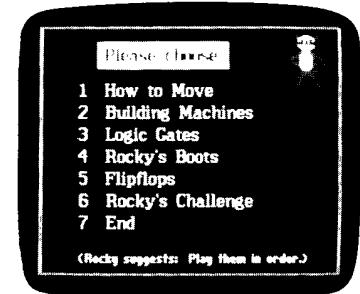
On a Tandy Color Computer:
Before running Rocky's Boots, make a backup of both sides of the pro-
gram diskette that came with the package. (Use the standard backup
procedure.) Place the original program diskette in a safe place and
use only your backup copy for running the program. You can use your
copy of the boot side of the disk to save your games, if desired.

Connect the joystick, if you have one, to your computer by plugging it
in the right joystick port of your computer. Use the OS-9 boot pro-
cedure that you are accustomed to using. If you do not have a stan-
dard OS-9 boot procedure, see Appendix A, Starting OS-9 From Your
Color Computer.

☐ Boot the side of the disk marked "Boot this side."

☐ Follow the instructions on the color adjustment screen.

CHOOSING A PROGRAM:
After the opening picture, the
menu will appear. It lists the
titles of the six programs in
Rocky's Boots. Is this the first
time you have played Rocky's
Boots? Start at the beginning
with 1, HOW TO MOVE. Then
follow the menu in order.

Please choose

1 How to Move
2 Building Machines
3 Logic Gates
4 Rocky's Boots
5 Flipflops
6 Rocky's Challenge
7 End

(Rocky suggests: Play them in order.)

To choose a program, type its number.

The first five titles are learning programs. They show you what you need to know to play the most challenging games in the last program, Rocky's Challenge.

1. How To Move
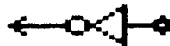Learn how to move around and pick up and drop objects.

2. Building Machines
Learn to connect wires and parts to build simple machines.

3. Logic Gates
Learn about special parts that control the flow of electricity.

4. Rocky's Boots
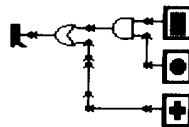Learn how the games are played and play eight different ones.

5. Flipflops
Learn about complex timers and switches.

6. Rocky's Challenge
Play over 30 different games and design your own games.

The Programs

1. HOW TO MOVE
Start here if you have never used Rocky's Boots before. You will learn how to move around and how to pick up and drop objects. You can use a joystick, a mouse, or the keyboard to move.
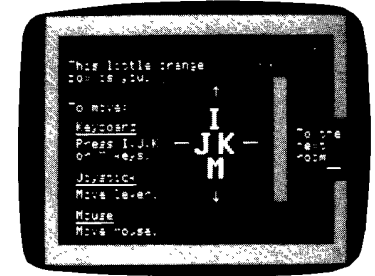
To move with a joystick:
☐ Use the joystick handle to move around.
☐ Press the button to pick up or drop objects.
For best results, use a joystick with a handle that returns to the center when it is released.

To move with a mouse:
☐ Move the mouse around to move the cursor.
☐ Press the button to pick up and drop objects.
Note: Mouse option is only available on Apple computers.

To leave the program at any time:
On an Apple, IBM, IBM-compatible, or Tandy 1000 computer: Press [ESC] .
On a Commodore computer: Press [f1] .
On a Tandy Color Computer: Press [BREAK] .

To turn the sound off or on:

On an Apple, Commodore, or Tandy
Color Computer: Press CONTROL (or
CTRL) and S at the
same time.

On an IBM, IBM-compatible, or
Tandy 1000 computer: Press CONTROL and
G at the same time.

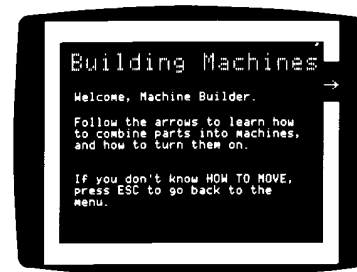**To see a summary of keyboard commands:**
                         Press ? .

2. BUILDING MACHINES

Start here to learn how to build
simple machines and turn them
on.

To build a machine, you need
to connect parts together. All
the parts in Rocky's world have
either an INPUT (circle), an
OUTPUT (arrow), or both, like
this wire.

OUTPUT ◄━━━━━━● INPUT

The inputs and outputs direct the flow of electricity that makes the
machines work. Orange electricity flows in one direction: *into* an
INPUT and *out of* an OUTPUT.

Connecting Parts

To connect parts, you "plug" inputs into outputs by moving the parts
together. The parts do not have to be exactly next to each other. Press
SPACEBAR (or the joystick or mouse button) as soon as you see the
input or output "hopping."

YES   ◄━━━●◄━━━━●

NO   ◄━━━●●━━━►
NO   ●━━━►◄━━━●
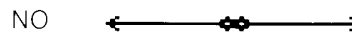
Here are some parts you can use to build machines.

WIRE   A wire directs the flow of electrici-
ty in a machine. Use wires to con-
nect to other parts.

CLACKER   A clacker works like an electronic
bell. It rings when electricity flows
through its input. Clackers are
great for letting you know when
your machine works.

THRUSTER   A thruster moves when electricity
flows through its input. Use the
thruster to build machines that
move.

Disconnecting Parts
Once you connect parts, they will stay together until you disconnect
them with the Splitter.

SPLITTER   Just pick up the Splitter and move
it over the connection between the
parts. They will come apart and
you can redesign your machine.

The Splitter is a special tool for Rocky's world—**only a trained per-
son should disconnect real wires.**

Turning Machines On
To turn a machine on, electricity needs to flow through the inputs and
outputs. You can put electricity in an input with the cursor, which has
electricity. Or, you can turn a machine on using a sensor.

SENSOR   Sensors can detect colors of ob-
jects or shapes of objects. When a
sensor touches an object it is sen-
sitive to, electricity flows through
its output. This turns on a machine
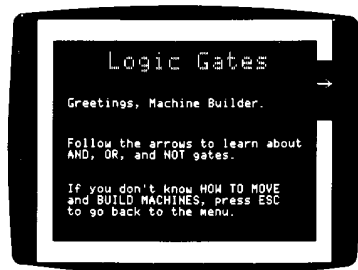connected to the sensor.

In the Practice Rooms
At the end of BUILDING MACHINES, you'll find two practice rooms.
Here you can build machines that move, ring the clacker, and do other
things. How many parts can you connect together in one machine? Try
designing a machine that does two things at the same time. Do you
need more wires, clackers, or thrusters? Go back and collect parts
from any room and carry them here.

Here are some ideas for building machines:
- Find the boot and connect it to a sensor. Can you make it kick?
- Build two machines that move, one in each direction.
- Find two thrusters, the wire with two outputs, and a wire. Connect
  the parts so that both thrusters turn on at the same time. Try the
  same machine with clackers.

3. LOGIC GATES

Start here to find out how to build machines using three special parts: AND, OR, and NOT logic gates. These gates control the flow of electricity through a machine.


```
         Logic Gates
                                →
  Greetings, Machine Builder.

  Follow the arrows to learn about
  AND, OR, and NOT gates.

  If you don't know HOW TO MOVE
  and BUILD MACHINES, press ESC
  to go back to the menu.
```

Using NOT Gates

A **NOT** gate works just the opposite of the way you think it should. When electricity flows through its input, none comes out its output. When its input is on, its output is *not* on and vice versa.

Since a NOT gate contains electricity (when it's input is off), it can turn on a machine or part of a machine. You can use NOT gates with sensors to start and stop machines.

Using OR Gates

When electricity flows through either the top or bottom input of an **OR** gate or through both inputs, electricity flows out its output.

OR gates come in handy when you want to turn on a machine or part of a machine in two different ways. When you use two sensors, your machine will turn on when one or both sensors sends electricity to the OR gate.

Using AND Gates

Electricity flows through the output of an **AND** gate only when electricity comes through the top *and* bottom inputs.

AND gates work well when you want two things to happen to turn on your machine or part of your machine. If your AND gate is connected to two sensors, both sensors must send electricity to the AND gate before its output can send electricity to other parts of the machine.

In the Practice Rooms

At the end of LOGIC GATES are two practice rooms with enough parts to build all kinds of machines. You can collect more parts from any room and bring them here. You might try some of these ideas for building machines:

• Collect two ON/OFF signs and make them blink on and off at different times.
• Find some NOT gates, thrusters, and wires. Build some machines that move.

While you are moving around the practice rooms, you might suddenly discover a secret and dangerous room. Inside, you'll find the parts you need to build machines to help protect yourself. But watch out! If you get "eaten" (your cursor disappears), press SPACEBAR (or the joystick or mouse button) to see an outline of your cursor. Move it out of the room and your cursor will reappear.

4. ROCKY'S BOOTS

Follow the arrows to learn how to play the games by building kicking machines. You'll build machines using these parts: a boot, 3 sensors, a wire, and the NOT, OR, and AND logic gates. The machines you build will make the boot kick targets out of a target kicking area. To score the most points, your machine should kick only the targets with positive numbers. The most you can win is 24 points in any game.

SENSORS | | TARGETS

Start Targets

Diamonds or circles

TARGET KICKING AREA
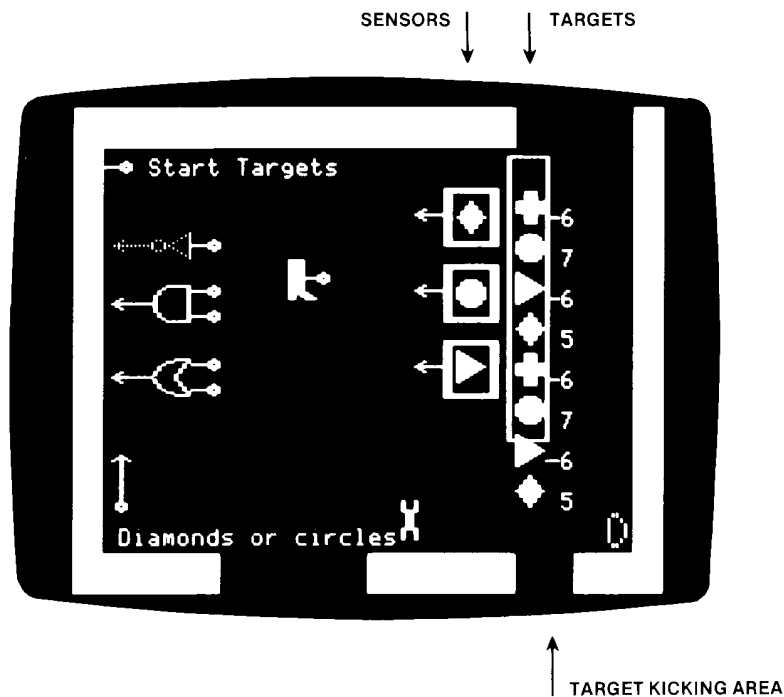
How to Play*

GAME SELECT ROOM

☐ Move to the Game Select Room. Pick the game you want by "stepping on" the input of its name.

☐ Look at the targets that appear on the right. Notice the color and/or shape of the targets with positive numbers. These are the targets you want your machine to kick.

☐ Move upstairs to the game room. Build a machine using the parts here and one or more of the sensors. (All the games can be solved with just the parts in this room.)

☐ Start the game by "stepping on" the Start Targets input in the upper-left corner. The targets will drop down to the room below. Then they will float up one at a time into the target kicking area.

☐ You can watch the game in three places. In the game room you can watch the boot in action. You can also move down to the Game Select Room and watch the targets float up one at a time. Or, you can go above the game room and watch the targets arrive. They arrive in two columns. Those that were kicked are on the right. Those that were not kicked are on the left.

☐ You'll see your score in the lower-right corner. Did your machine score 24 points? If it did, Rocky will make a special appearance. If not, use the Splitter to disconnect your machine and redesign it using different parts or sensors.

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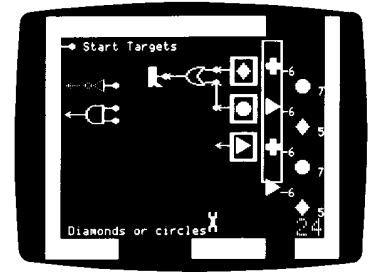
*If you are using an IBM, IBM-compatible, or Tandy 1000 computer: the words "green," "white," "orange," "purple," and "blue" are replaced by colored blocks.

*If you are using a Tandy Color Computer: the color purple has been changed to orange, and the color green has been changed to white.

5. FLIPFLOPS

Here you find out how to build machines using three special parts: FLIPFLOPS, CLOCKS, and DELAYS. These parts time the flow of electricity through a machine.

Using FLIPFLOPS

A FLIPFLOP works like a switch—it switches the direction of electricity. Electricity flows out of one output at a time and flips to the other output when electricity flows into the other input.

Since a FLIPFLOP contains electricity, one side is always on when the other side is off. FLIPFLOPS can make a machine work until something happens to flip the electricity to the other side, which turns the machine off. In the games, use FLIPFLOPS when you want to turn a machine or part of a machine on or off when a certain target appears in the target kicking area.

Using CLOCKS

A CLOCK contains electricity that flows clockwise from one output to the next. CLOCKS turn machines on every so often—whenever electricity flows from the output to the machine it is connected to.

CLOCKS are synchronized to the speed that targets arrive in the target kicking area in the games. The CLOCK will make the boot kick every target. Use CLOCKS with DELAYS to time your machine so it will turn on only at certain times.

Using DELAYS

Just like a floodgate on a dam stops water from flowing, a DELAY temporarily stops electricity from flowing. It delays electricity coming in from the side input until electricity flows in the top input. Then electricity flows through its output.

DELAYS are used with CLOCKS to time machines. Use DELAYS with CLOCKS when you want your machine to turn on before or after a certain target appears in the target kicking area.

In the Practice Rooms

When you've learned about FLIPFLOPS, CLOCKS, and DELAYS, go to the practice rooms and try out these parts. Explore the four practice rooms to find the wires and logic gates you need, or collect parts from any room. You can build your machine in any room and carry it to the room with the moving targets to test it out.

Try out these machine ideas if you like:
- Build a clacker machine that keeps ringing until something happens to turn it off.
- Collect four clackers and four clocks. Make the clackers ring one at a time. It's a clacker symphony!

6. ROCKY'S CHALLENGE

Here you can build machines to play 31 different games or even make your own game! To win the games, you need to build machines that kick the targets with positive numbers out of the target kicking area. All the parts you need are in the six rooms near the game room. See the map on pages 18 to 19 that shows all 15 rooms in Rocky's Challenge.

How to Play*

_ Move down to the four Game Select Rooms. Pick the game you want by "stepping on" the input of its name. (The games get more challenging as you move down through the rooms.)

☐ Look at the targets and sensors that appear on the right. Notice the color and/or shape of the targets with positive numbers. These are the targets you want your machine to kick.

☐ Move upstairs to the game room. The targets and sensors are already there. Build a machine using the parts in the rooms above and below the game room. You can build your machine in any room you like. Then move it to the game room.

☐ Start the game by "stepping on" the Start Targets input in the upper-left corner. The targets will drop down to the room below. Then they will float up one at a time into the target kicking area.
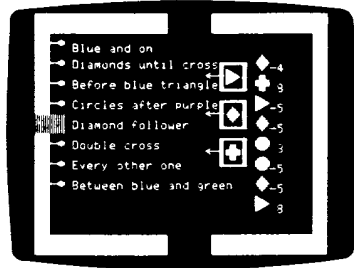
When all the targets have gone by, they will drop back down to the game room in two columns. The targets that were kicked are on the right. Those that were not kicked are on the left. This lets you see how well your machine worked.
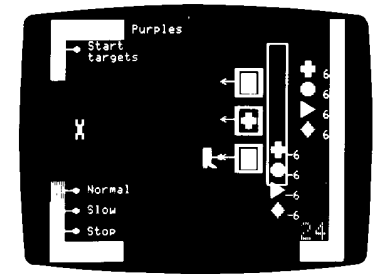
☐ You'll see your score in the lower-right corner. Did your machine score 24 points? If it did, Rocky will come out of hiding. If not, use the Splitter to disconnect your machine and redesign it using different parts or sensors.

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*If you are using an IBM, IBM-compatible, Tandy 1000, or a Tandy Color Computer. see the footnote on page 13.

THE WORLD OF ROCKY'S CHALLENGE

Start Here ⌐

Rocky's Challenge

Welcome, Inventor. Your goal is to create a machine to win each of Rocky's games.

To do that, you first need to learn about FLIPFLOPS and LOGIC GATES, and play ROCKY'S BOOTS.

If you haven't learned these things yet, go back to the Menu by pressing ESC.

Build a machine to kick the positive targets in here. →

Then choose a new game down here. ↓
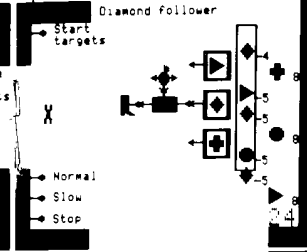
Diamond follower

- Start targets
- Normal
- Slow
- Stop

- Purples
- Crosses
- Diamonds or circles
- Blue triangles
- Un-green
- Blue or round
- Things with corners
- Purple crosses
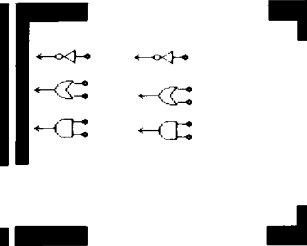
- Circle, diamond or triangle
- Crosses or blue circles
- Non-green triangles
- Unpurple non-diamond
- Blue or green convex
- Blue circles ni
- Green diamonds or blue triangles
- Diamond or purple, but not both
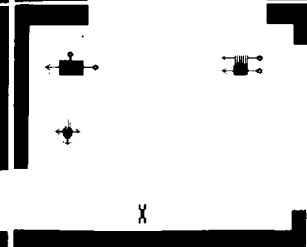
- Blue and on
- Diamonds until cross
- Before blue triangle
- Circles after purple
- Diamond follower
- Double cross
- Every other one
- Between blue and green

- Teri's Teaser
- Ann's Enigma
- Coni's Catastrophe
- Bumble's Boggler
- Rick's Riddle
- Jack's Hunt
- Warren's Widget
- Make your own

TARGETS

Change shape   SENSORS

◆ ▶ ✚ ●

Change color

■ ■ ■

Change point value

↑ ↓
Increase Decrease

In the next room, you can make up your own game.

Pick up a TARGET or SENSOR and run it into the color or shape you want it to have.

A SENSOR can't have both color and shape. It can only sense one thing at a time.

You can change how many points a TARGET is worth by running it into the fat arrows.
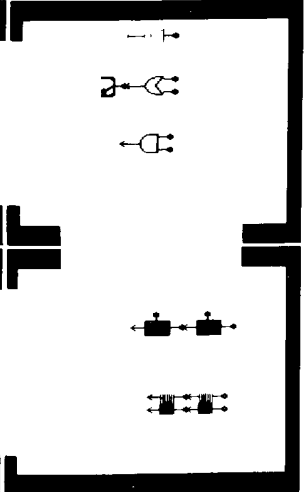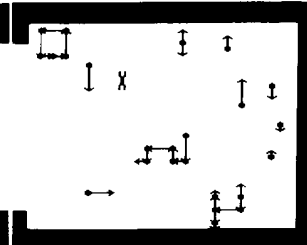
Debugging Machines

Sometimes a machine you build may need to be debugged to make it work right.

If your machine is not working the way you want it to, you can make the electricity run in slow motion. You can even stop it completely. This lets you see what is happening. Use the "Slow" or "Stop" inputs for this. "Normal" is the speed of a game until you step on "Slow" or "Stop."
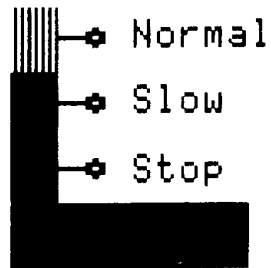
Fixing Glitches

Sometimes you may build a machine which should work but does not. If there are too many wires and gates between the sensors and the boot, the electricity left over from the last target can cause problems. Just reconnect the parts to shorten the paths that the electricity must follow.
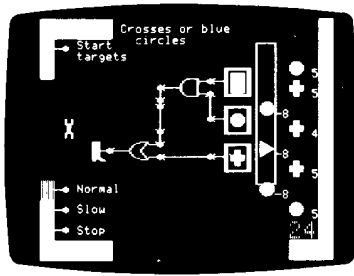
This machine will work.
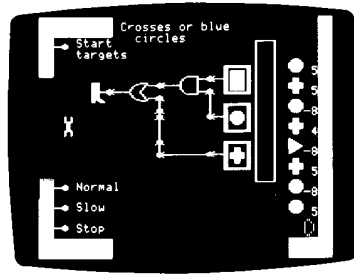
This machine should work but will not because of a glitch. It has too many wires. It needs to be changed.

Rocky's Solutions

Many of the games in Rocky's Challenge can be solved in more than one way. If you build a machine that kicks 24 points, your machine is a good one.

Watch out for glitches. You may build a machine that doesn't work even though you are sure it should. This can happen when there are too many wires and gates between sensors and the boot. Rebuild the machine with shorter paths of wire and it should work.

Also pay attention to the initial settings of some of the logic elements when building the more complicated machines. In "Every Other One," for example, the DELAY must be set ON when the game starts. If it is set OFF, the machine will not kick the correct targets. In fact, whenever they are used in a machine, FLIPFLOPS must be preset a particular way for the machine to score 24 points.

Finally, you can extend the game by making up your own scoring goals. For example, you can build machines that will score the most negative points for each game. You may end up building some great-looking machines.

NOTE: If you are using an IBM, IBM-compatible, Tandy 1000, or a Tandy Color Computer, see the footnote on page 13.
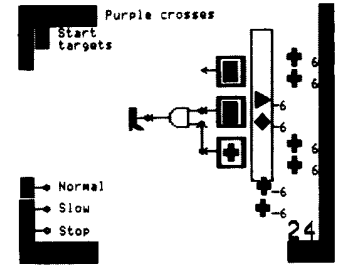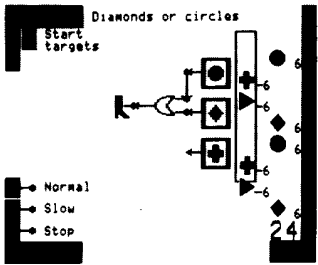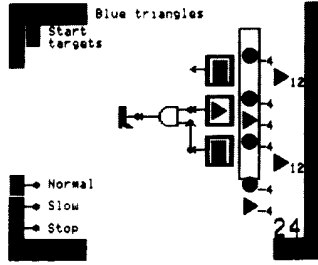
PURPLES
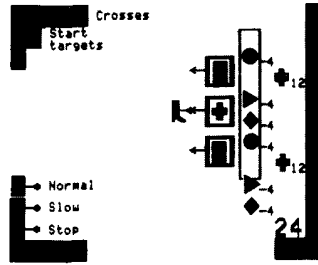
CROSSES
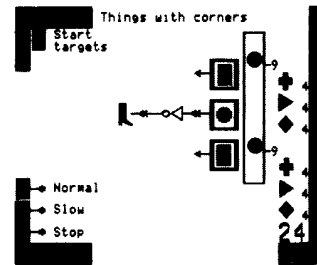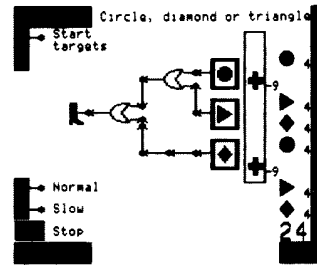
DIAMONDS OR CIRCLES

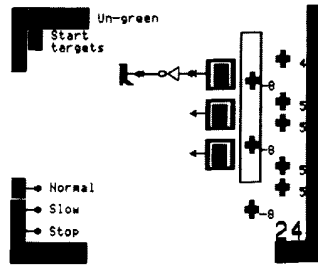BLUE TRIANGLES
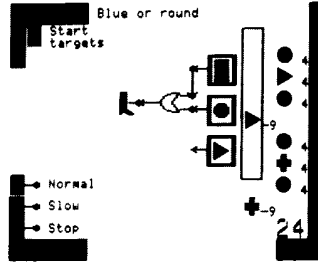
UN-GREEN

BLUE OR ROUND

THINGS WITH CORNERS

PURPLE CROSSES

CIRCLE, DIAMOND
OR TRIANGLE
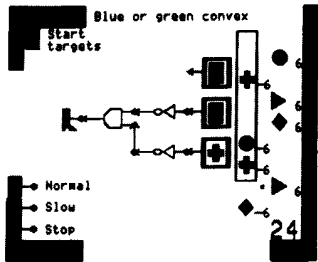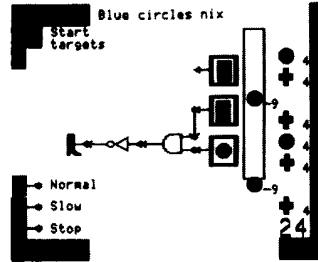
CROSSES OR
BLUE CIRCLES

NON-GREEN TRIANGLES

UNPURPLE
NON-DIAMOND

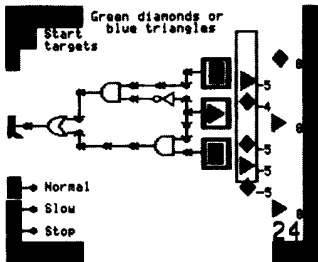Blue or green convex

Start
targets
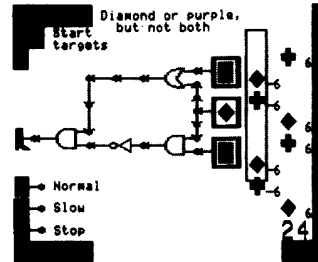
Normal
Slow
Stop

24

BLUE OR GREEN CONVEX

Blue circles nix

Start
targets

Normal
Slow
Stop

24
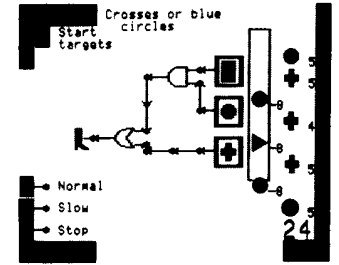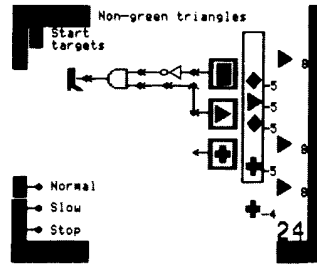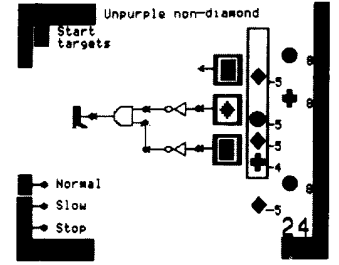
BLUE CIRCLES NIX

Before blue triangle

Start
targets

Normal
Slow
Stop

24

BEFORE BLUE TRIANGLE

Circles after purple

Start
targets

Normal
Slow
Stop

24
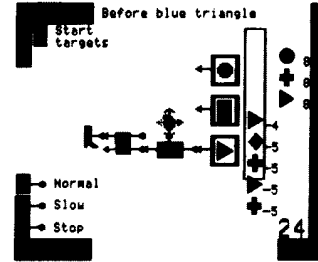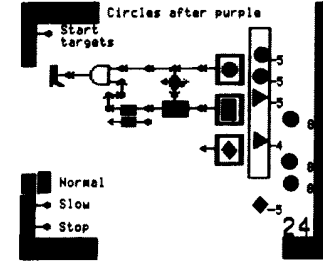
CIRCLES AFTER PURPLE

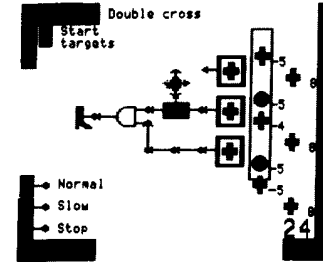Green diamonds or
blue triangles

Start
targets

Normal
Slow
Stop

24

GREEN DIAMONDS OR BLUE TRIANGLES

Diamond or purple,
but not both

Start
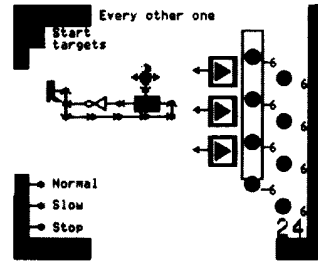targets

Normal
Slow
Stop

24

DIAMOND OR PURPLE, BUT NOT BOTH

Diamond follower

Start
targets

Normal
Slow
Stop

24

DIAMOND FOLLOWER

Double cross

Start
targets

Normal
Slow
Stop

24

DOUBLE CROSS

Blue and on

Start
targets

Normal
Slow
Stop

24

BLUE AND ON

Diamonds until cross

Start
targets

Normal
Slow
Stop

24
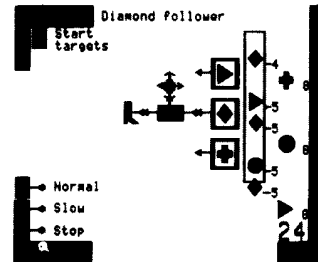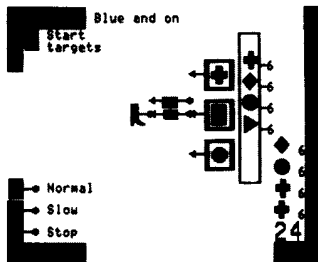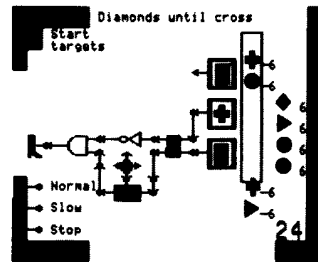
DIAMONDS UNTIL CROSS

Every other one

Start
targets

Normal
Slow
Stop

24

EVERY OTHER ONE

Between blue and green

Start
targets

Normal
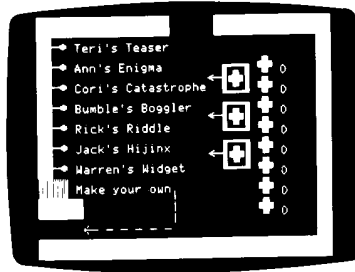Slow
Stop

24
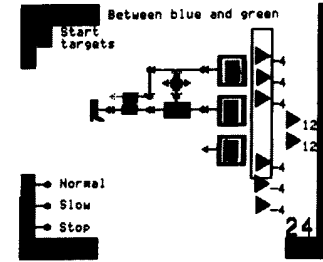
BETWEEN BLUE AND GREEN

Making Your Own Game

Are you ready to create your own games? Go to the bottom Game Select Room in Rocky's Challenge and choose "MAKE YOUR OWN." A door will open so you can move through the instruction room to the edit room.

In the edit room, you can change the color or shape of the sensors. You can also change the color, shape, and point value of the targets.
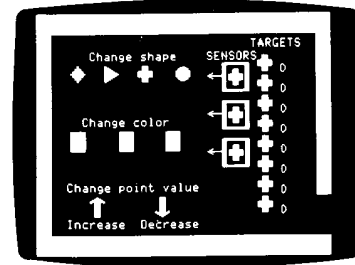
CHANGING SHAPES:
☐ Pick up a target or sensor.
☐ Carry it to the change shape row.
☐ Hold it on top of the shape you want. It will automatically change to that shape.

CHANGING COLORS:
☐ Pick up a target or sensor.
☐ Carry it to the change color row.
☐ Hold it on top of the color you want. It will automatically change to that color.

CHANGING POINT VALUES:
☐ Pick up a target.
☐ Carry it to the arrows. Hold it on top of the arrow you want.

↑   Up arrow increases the value, one point at a time.

↓   Down arrow decreases the value, one point at a time.

☐ Remember the winning score is 24. Be sure you make enough positive targets to equal 24.

When you drop a target or sensor, it will pop back in place. You do not need to carry it back.

Experiment and watch the changes. Can you or a friend build a machine that can win your game?

You may want to save your game so you can play it again later. See page 29 for how to save a game.
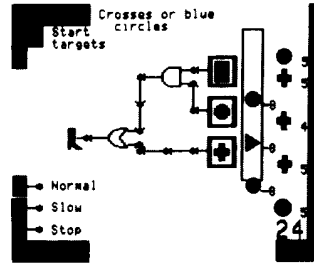
Making Games
Try changing the PURPLE CROSSES game so that a winning machine kicks only the targets that are NOT purple crosses.
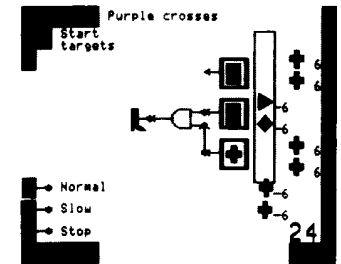
☐ In the MAKE YOUR OWN edit room, change the shape or color of the sensors. You need one cross sensor, one purple sensor, and a sensor with another shape or color.
☐ Now change the shape and color of the targets. Since all the targets are purple crosses, change only four of them. Make them any shape or color you want except purple crosses. (Do not change the targets' point values.)
☐ Go up to the game room and build a machine to kick all the targets that are NOT purple crosses. Start the game to test your machine. Make sure it works.
☐ Go back down to the MAKE YOUR OWN edit room. You'll see your machine there and the targets that were kicked and those that were not.
☐ Change the point value of the targets that were kicked so that the total is 24 points. Change the targets that were not kicked to negative numbers.
☐ Go back up to the game room and try out your game. If you want to remember your machine, draw it on a piece of paper. Then you'll have it next time you play.
☐ Save your game if you like (see page 29) so you or a friend can play it later.

Try changing these games to new
ones*:

Change CROSSES OR BLUE
CIRCLES to DIAMONDS OR GREEN
TRIANGLES

Change NON-GREEN TRIANGLES to
NON-BLUE DIAMONDS

Change BLUE CIRCLES NIX to
BLUE CIRCLES

Saving a Game

Have you built a machine in one of the games that you'd like to use
again? You can save a game in progress to come back to the next
time you play Rocky's Boots. Your game will be saved on a disk even
if you turn the computer off. You can save up to 9 games from
Rocky's Boots or Rocky's Challenge on one disk, depending on the
kind of computer you are using.

NOTE: This feature is not available on IBM, IBM-compatible, or Tandy
1000 computers.

To save a game on an Apple or Tandy Color Computer:
☐ Press ESC or BREAK to leave the game.
☐ Press S to save your game.
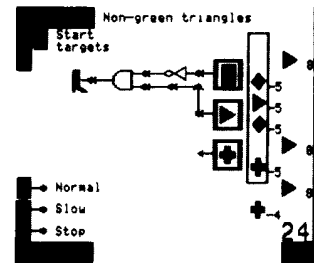☐ Insert your storage disk when prompted.
    On a Tandy Color computer you must have a preformatted
    disk to save your game. See your OS-9 manual for instruc-
    tions. If you don't have OS-9 use your copy of the boot side of
    Rocky's Boots disk.
☐ Choose a name for your game that will help you remember which
    game it is, for example "crosses."
☐ Insert the Rocky's Boots disk in the disk drive when you see the
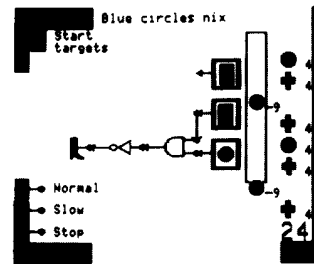   prompt, and press RETURN or ENTER to continue playing.

To save a game on a Commodore computer:
☐ Press f1 to leave the game.
☐ Make sure your Rocky's Boots disk is in the disk drive and the drive
    door is closed. Then press S to "save" the game. You can on-
    ly save one game at a time on your Rocky's Boots game disk.

*If you are using an IBM, IBM-compatible, Tandy 1000, or a Tandy
Color Computer, see the footnote on page 13.

To play a game you saved on an Apple or Tandy Color Computer:

☐ Choose 4 Rocky's Boots or 6 Rocky's Challenge from the menu and press RETURN or ENTER .

☐ When you see the prompt, press O to load an "old" game.

☐ Insert your Rocky's Boots Storage disk at the prompt and press RETURN or ENTER . The storage disk menu appears.

☐ Choose the game you want and wait for it to load.

☐ Insert the Rocky's Boots disk in the disk drive when you see the prompt, and press RETURN or ENTER to play the saved game.

To play a game you saved or a new game on a Commodore computer:

☐ Choose 4 Rocky's Boots or 6 Rocky's Challenge from the menu and press RETURN to play the saved game.

☐ Press SHIFT + 4 or SHIFT + 6 to play a new game.

The Learning List

Here are some of the things you can learn section by section. If you are just beginning, be sure to start with 1, then 2, and so on. Take your time. Learn everything step by step.

Note to Teachers: If you are using Rocky's Boots or any TLC product in your classroom, write us for our scope and sequence of skills. This curriculum interface correlates skills taught in our programs with skills taught in basal textbooks in Grades K to 8.

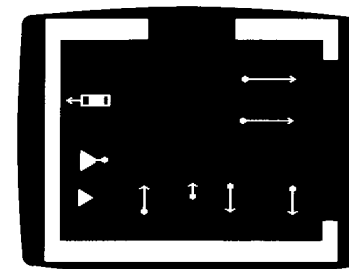| SECTION	SKILLS AND CONCEPTS PRESENTED

1. HOW TO MOVE
   (14 learning and practice rooms)

☐ Using special keys.
☐ Turning sound on and off.
☐ Moving the cursor.
☐ Picking up and dropping objects.
☐ Using the joystick to play.
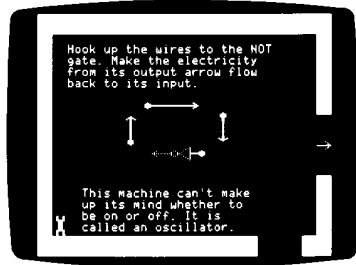
2. BUILDING MACHINES
   (16 learning and practice rooms)

☐ Using inputs and outputs, wires and sensors.
☐ Connecting and disconnecting parts.
☐ Building simple circuits (machines).
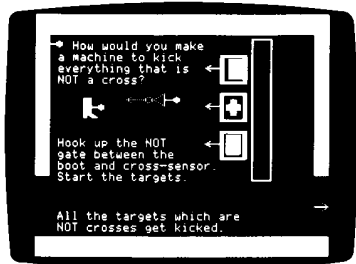☐ Making current flow.

3. LOGIC GATES
(16 learning and practice rooms)

Hook up the wires to the NOT gate. Make the electricity from its output arrow flow back to its input.

This machine can't make up its mind whether to be on or off. It is called an oscillator.

- ☐ Constructing machines using AND, OR and NOT gates (Boolean logic).
- ☐ Using OR trees and NOT gate oscillators.
- ☐ Constructing machines with logic trees and oscillators.

4. ROCKY'S BOOTS
(13 rooms, 8 games)

How would you make a machine to kick everything that is NOT a cross?

Hook up the NOT gate between the boot and cross-sensor. Start the targets.

All the targets which are NOT crosses get kicked.

- ☐ Activating targets.
- ☐ Identifying positive and negative values.
- ☐ Recognizing and avoiding glitches.
- ☐ Building and debugging circuits.
- ☐ Classifying, abstracting, and inferring.
- ☐ Applying (Boolean) logic to solve problems.
- ☐ Using combinatorial logic.

5. FLIPFLOPS
(15 learning and practice rooms)
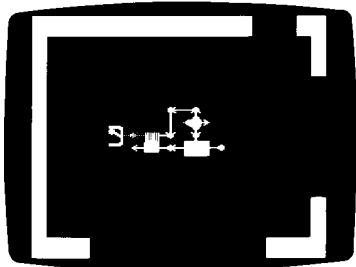
- ☐ Using FLIPFLOPS, CLOCKS, and DELAYS.
- ☐ Applying switching and timing in circuits.
- ☐ Designing more complex circuits.

6. ROCKY'S CHALLENGE
(15 rooms, 31 games plus
MAKE YOUR OWN game room)

Rocky's Challenge

Welcome, Inventor. Your goal is to create a machine to win each of Rocky's games.

To do that, you first need to learn about FLIPFLOPS and LOGIC GATES, and play ROCKY'S BOOTS.

If you haven't learned these things yet, go back to the Menu by pressing ESC.

- ☐ Classifying, abstracting, and inferring.
- ☐ Applying (Boolean) logic to solve simple to complex problems.
- ☐ Debugging circuits.
- ☐ Thinking creatively.
- ☐ Inventing and designing games.
- ☐ Using sequential and combinatorial logic.

Additional Activities

Alligator Detector

An alligator lives in the Secret Room in Logic Gates. You will also find an alligator detector. It looks like this:

Pick up the alligator. Move it around and watch the detector. The outputs go on or off depending on where the alligator is. Get a clacker. Plug it into one output of the detector. See what happens when the alligator comes by. Remove the clacker and attach a bopper in its place. Now what happens?

Get two thrusters and two wires that point the right way. Connect the detector, wires, and thrusters like this:

This machine will follow the alligator. HINT: Make the machine in another room. Then take it to the Secret Room to test it.

Visit Your Local Electronics Shop

Find out how many actual electronics parts you can match to the ones used in Rocky's Boots. Ask about electronic kits that can help you learn more about electronic circuitry. With the information you learn from Rocky's Boots, you should be a real whiz at constructing the items in these kits.

Logical Room Rules

Create a circuitry chart to hang on the door of your room. List all the IF's, AND's, and BUT's people should consider before entering your room. Make a bunch of signs in flip-chart fashion or tack on individual signs, changing them to suit your mood. Here are some examples:

IF: I'm in
           I'm out
           I'm studying
           I'm asleep
AND: I say "Come in"
           I've overslept
           I gave you a written pass to enter
           You're bringing me breakfast in bed
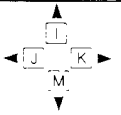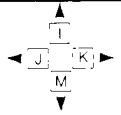   You have the answers to my homework
BUT you're not:
           angry
           dirty
           crying
           bringing your pet snake
           asking for money
THEN: You may enter (at your own risk)!

Special Keys

KEYS

KEYS				FUNCTION
Apple	Commodore	IBM Tandy 1000	Tandy Color Computer	
▲ ↑ ◄ J K ► M ▼	▲ ↑ ◄ J K ► M ▼	arrow keys	arrow keys	*Moves the cursor up, down, right, left**
CTRL or CONTROL		SHIFT	SHIFT	*Press this with I, J, K, or M, or arrow keys to move the cursor a short distance (for fine control)*
REPT + I, J, K, M or Hold down I, J, K, M	Hold down I, J, K, M	Hold down arrow keys	Hold down arrow keys	*Makes the cursor move continuously (REPT means Repeat)*
SPACEBAR	SPACEBAR	SPACEBAR	SPACEBAR	*Picks up or drops objects*
CTRL + S	CONTROL + S	CONTROL + G	CONTROL + S	*Press both keys at the same time to turn the sound ON or OFF*
?	?	?	?	*Shows you the special keys list on the screen*
ESC	←↑	ESC	BREAK	*Lets you leave the game and return to the menu*

*You can also move and pick up and drop objects using a joystick or a mouse. (If you have both a joystick and a mouse plugged in on an Apple IIe, only the joystick will work.) On an IBM, IBM compatible or Tandy 1000, you must press the joystick button to activate the joystick before moving.

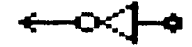‡ CONTROL is labeled CLEAR on some Tandy Color Computers.

Glossary

"REAL WORLD" ELECTRONIC PARTS

This wire has an input and an output. The round end is the INPUT. You send electricity IN through the input. The pointed end is the OUTPUT where the electricity flows OUT.

This is a NOT gate. Its output is on when its input is NOT on, and vica versa.

This is an OR gate. Its output is on when either OR both its inputs are on.

This is an AND gate. Its output is on only when the top AND the bottom inputs are on.

This is a FLIPFLOP. It is like a switch. Electricity comes out of one output at a time and flips to the other output when the other input is turned on.
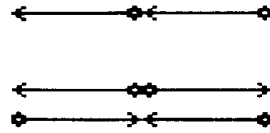
This is a CLOCK. It has four outputs. Electricity flows clockwise from one output to the next. It is used to change the timing of the flow of electricity.

This is a DELAY. It delays the electricity coming from the side until the top input turns on. Then the electricity can get through.

When connecting parts and wires, you "plug" INPUTS into OUTPUTS.

YES

NO

This is a CLACKER. It works like an electronic bell. Turn it on to make it ring.

This is a THRUSTER. Hook it up and watch it move.

This is an ALLIGATOR DETECTOR. The outputs go on or off depending on where the alligator is.

This is a BOPPER. Hook it up to bop the alligator.

This is a SPLITTER. Use this tool to disconnect parts.

This is a SENSOR. Its output turns on when it comes into contact with whatever it is sensitive to.

Appendix A

ADDING DOS TO YOUR IBM DISK

You need to add DOS to your IBM, IBM-compatible, or Tandy 1000 Rocky's Boots disk before you use it for the first time. Just follow the instructions below. (If you are using an IBM compatible computer, the procedure may vary slightly. Just follow the prompts on your screen.)

If You Have Two Disk Drives:
1. Put your DOS disk in drive A.
2. Put your Rocky's Boots disk in drive B.
3. Turn on the computer.
4. When you see **Enter new date:**, press [ENTER] or [⏎].
5. When you see **Enter new time:**, press [ENTER] or [⏎].
6. When you see **A >**, type **B:INSTALL**. Then press [ENTER] or [⏎].
7. When you see **A >REM . . . . . Now your disk is ready to use** . . . turn off the computer.
8. Insert the Rocky's Boots disk in drive A and turn on the computer. Your game disk will load automatically.

If You Have One Disk Drive:
1. Put your DOS disk into the drive.
2. Turn on the computer. Wait.
3. When you see **Enter new date:**, press [ENTER] or [⏎].
4. When you see **Enter new time:**, press [ENTER] or [⏎].
5. When you see the prompt **A >**, type **B:INSTALL**. Then press [ENTER] or [⏎].
6. When you see **Insert diskette for drive B: and strike any key when ready,** remove your DOS disk, put your Rocky's Boots disk in the drive, and strike any key.
7. When you see **Insert diskette for drive A: and strike any key when ready,** remove your game disk, put your DOS disk in the drive, and strike any key.
8. Keep repeating steps 6 and 7 until you see **A >REM . . . . . Now your disk is ready to use . . . . .**
9. Turn off your computer.
10. Turn the computer back on. Your game disk will load automatically.

Appendix A *(continued)*

If You Have One Floppy Disk Drive And A Fixed Disk Drive:

1. Turn on your computer, booting from your fixed disk drive.
2. When you see **Enter new date:**, press ENTER or ⏎ .
3. When you see **Enter new time:**, press ENTER or ⏎ .
6. When you see the prompt **C >**, place your Rocky's Boots disk in your floppy disk drive.
5. Type **SYS A:**. Then press ENTER or ⏎ .
6. When you see the prompt **C >**, type **COPY COMMAND. COM A:** Then press ENTER or ⏎ .
7. When you see the prompt **C >**, type **COPY BASIC*.* A:** Then press ENTER or ⏎ .
8. When you see the prompt **C >**, your disk is ready to use. Turn off your computer or press CTRL , ALT , and DEL all at once to run your TLC program.
9. Turn the computer back on. Your Rocky's Boots disk will load automatically.

Appendix A *(continued)*

STARTING OS-9 FROM BASIC FROM A TANDY COLOR COMPUTER

If you do not have a Color Computer with BASIC version 1.1 or later or if you do not have the OS-9 System, you can type in the following program and use it to start Rocky's Boots.

Enter the following program from disk extended BASIC.

```
10    REM ***************
20    REM * BOOT OS-9 FROM BASIC
30    REM ***************
40    FOR I = 0 TO 70
50    READ A$
60    POKE &H5000 + I,VAL("&H" + A$)
70    NEXT I
80    CLS:PRINT "INSERT OS9 DISKETTE"
90    PRINT "INTO DRIVE 0 AND PRESS A KEY"
100   A$ = INKEY$:IF A$ = " " THEN 100
110   EXEC &H5000
120   DATA 86,22,8E,26,00,8D,0D
130   DATA FC,26,00,10,83,4F,53
140   DATA 26,03,7E,26,02,39,34
150   DATA 20,10,BE,C0,06,A7,22
160   DATA 86,02,A7,A4,6F,21,6F
170   DATA 23,6C,23,AF,24,10,BE
180   DATA C0,06,A6,23,81,13,27
190   DATA 12,AD,9F,C0,04,4D,27
200   DATA 06,6C,23,6C,24,20,E9
210   DATA 7F,FF,40,35,A0,4F,20
220   DATA F8
```

Type the following instruction at the O K prompt to save the above program to a newly formatted disk:

SAVE "*" ENTER

Type the following to use this program to start the application:

RUN "*" ENTER

When the prompt appears, insert the Rocky's Boots diskette and press ENTER . If you boot on a separate OS-9 system disk, put the Rocky's Boots disk in drive 0 and type CHX /D0/CMDS. Type ROCKY ENTER to start Rocky's Boots.

Limited Warranty