## Odd One Out

Teacher's Guide

Apple
Commodore 64


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## INTRODUCTION

Most teachers will agree that problem-solving skills are important in preparing students for living in a complex world. The concern has been how to teach these skills so that students are presented with real problems and different strategies for their solution. ODD ONE OUT, and other Sunburst programs, identify specific problem-solving skills, and then offer opportunities to practice those skills.

As a basis for the development of problem solving material, we have adapted a Problem Solving Skill Matrix devised by a group of teachers in Rochester, Minnesota under the direction of Donna Stanger. The matrix (see page 3) divides problem solving into four categories:

```
Memory
Cognitive Skills (Discrimination, Rules and Attributes)
Cognitive Control Strategies
Creativity
```

ODD ONE OUT can be used to provide practice in both the second and third columns, DISCRIMINATION, ATTRIBUTES and RULES and COGNITIVE CONTROL STRATEGIES. Depending on the game (set of problems) created by the teacher, students must discriminate, analyze and/or look for patterns and sequences in order to decide which item of four presented is the "odd one out." In playing the five games: PICTURES, LETTERS, NUMBERS, WORDS and MATH, students may use many skills and strategies, but ODD ONE OUT is particularly appropriate for practice with the following:

1. DISCRIMINATION, ATTRIBUTES, and RULES

Discrimination - the ability to determine that one object is different from others, for example: three identical trees from one fish, simple letter discrimination I I B I, or simple number discrimination 2 (3) 22.

Concrete Concepts - using critical attributes to classify examples that may be directly perceived, (visual, auditory, or tactile) and can be learned without verbal explanation. For example, $\triangle \Delta \Delta$ - pointing out the shape that is not a triangle would indicate some awareness of the concept of a triangle.

Defined Concepts - concepts which require a verbal explanation to be learned. Defined concepts require definitions using previously acquired concrete concepts. For example, bread, house, run, cat - pointing out the word that is not a noun would indicate some awareness of the concept "noun."
2. COGNITIVE CONTROL STRATEGIES
Scanning for Clues and Hints - looking for critical information. Each
game of ODD ONE OUT requires students
to seek clues from the examples
given in order to determine what three
of the objects have in common and
thereby eliminate the "odd" one.

ODD ONE OUT has five sections that will allow you to provide problems that utilize the specific skills and strategies that your students need to practice. All sections (except PICTURES) can be edited, and up to ten different games can be saved for each section. (If you are using the Commodore 64, twenty games can be saved for each section.)

| PICTURES - | involves simple discrimination or classification while <br> looking for similarities and differences in objects <br> belonging to the same group or class. PICTURES <br> games can not be created or edited by the teacher, but <br> three levels of difficulty are provided. |
| :--- | :--- |
| LETTERS - | can be used to familiarize students with letters of the <br> alphabet, practice recognition of upper/lower case, <br> vowels, consonants, and alphabetical order. |
| NUMBERS - $\quad$can be used to provide practice in identifying odd and <br> even numbers, counting and recognizing numbers in <br> order, and other single-digit concepts. |  |
| WORDS - $\quad$can be used for vocabulary development, parts of <br> speech, recognition of words based on specific <br> patterns, spelling, words associated with specific <br> subject areas, and classification. |  |
| MATH - $\quad$can provide practice in identifying operations, <br> comparing equations, restating numbers, finding <br> properties of numerals, and using basic math facts. |  |

ODD ONE OUT is designed for a 48 K Apple or Commodore 64 with disk drive. If you need assistance in operating your computer, check the sections of this Teacher's Guide entitled "Apple II: Working With Your Computer," "Commodore 64: Working With Your Computer," and "What Happens If...?" You can also call Sunburst Communications, toll-free at (800) 431-1934.

## Problem Solving Skill Matrix




SKILL OR STRATEGY:

GRADE:

READING LEVEL:

TIME REQUIRED:
TEACHING OBJECTIVES:

Discrimination
Concrete Concepts
Defined Concepts
Scanning for Clues and Hints Looking for a Pattern or Sequence

K-6 (depending upon the games created by the teacher)

Varies with what the teacher chooses to include in each game.

3-5 minutes per game
To build strength in the problem-solving strategies and skills above.

Note: Be sure to design your own games before using the LETTERS, NUMBERS, WORDS, or MATH sections with your students. The problems on the diskette are a mixture ( $\mathrm{K}-6$ ) to suggest what might be included.

## OVERVIEW

ODD ONE OUT has five sections: PICTURES, LETTERS, NUMBERS, WORDS, and MATH. In each, students must discriminate and classify in order to decide which item of four presented is the "odd one out."

In LETTERS, NUMBERS, WORDS, and MATH, the games (problem sets) are created by the teacher (see page 10 of this guide for editing instructions). This allows for flexibility in meeting specific student needs. Through your creativity, a wide variety of applications are possible. Because the content can be easily changed, this program can remain useful for an extended time period.

When the program begins, students are shown a main menu. This is where they select the game they want to play.


Once the students have selected which program they want to play, they must answer two questions:


Note: The teacher or a helper may answer these questions for very young students.

When playing a game, students are shown four objects and asked to identify which one does not belong with the group--the "odd one out." Each object is located in a colored box--one purple, one green, one blue and one orange. The students press a key on the keyboard to indicate which box contains the odd one--"P" for purple, "G" for green, "B" for blue, and "O" for orange.


For younger students, you may want to put colored stickers on the keys. A self-adhesive label, colored with a marker and cut to fit, works well.

Note: For students who are color-blind, or if a color monitor is not available, the teacher can change the TV type from color to black and white. (This is done from the CHANGE OPTIONS MENU. See page 9.) When set to black and white, the boxes surrounding the objects are made up of symbols instead of colors. You could also use the black and white version on a color monitor if preferred. The pictures will be in color, but the boxes will be made of the symbols above.

## Correct Answers

In the PICTURES games, if the students answer correctly, the box containing the odd item flashes and the computer prints "Blue is right" (Orange is right, Green is right). An audio response is also given unless the teacher has turned off the sound. (The teacher can control the sound by using the CHANGE OPTIONS. See page 9.)

In LETTERS, NUMBERS, WORDS, or MATH games, the computer responds to a correct answer by restating that answer in a colored box. (On the Commodore 64, the answer is printed in the color of the box.)

Incorrect Answers

If the students answer incorrectly, the computer will do one of two things: either 1) show the correct answer, or 2) give a "Think About" hint.


After the "Think About" hint is given, students are given another chance to select the "odd one." If a second wrong answer is given, the correct answer is then displayed. For example, the following problem gives the hint, "Think about food."

The "Think About" hint is optional. (Use the editing features to write your own "Think About" or choose to eliminate it.) In some cases, a "Think About" would be inappropriate.

After the Game
Once the students have completed their problems, the computer displays the number of correct answers out of the total possible.

```
You played "ODD ONE OUT"
        with PICTURES - 1.
    You got Bright out of \(B\).
```

A Student Record Sheet is provided for students to record their scores. Scores of very young students may be recorded by the teacher or an older student.


SLABMRSTM....

Note: The Student Record Sheet can also serve as an assignment sheet. Fill in some columns before giving the sheet to the student. After playing, the student can enter the number of problems correct and return the sheet to you.

## Stopping the Program

If you want to stop playing a game before it is completed, hold the Control key down while you press the E key. This will allow you to use another disk or to return to the main menu of ODD ONE OUT.

The CHANGE OPTIONS MENU is accessed by holding down the CONTROL key and typing " $T$ " while the Main Menu is being displayed. (On a Commodore 64, hold down the Commodore key ( $\mathbb{C}$ while you type "T.")


The CHANGE OPTIONS MENU displays the options you can change on the left and the current setting for each option on the right.
[S] allows you to turn the sound on or off.
[T] allows you to set the TV type to color or black and white.
[1-4] takes you to an editing menu for the section selected from which you can:

- Set the game students can play
- Create a new game
- Edit an existing game
- Delete a game
- Return to the CHANGE OPTIONS MENU

The write-protect sticker must be removed before making any changes on your disk.

By creating your own ODD ONE OUT games, you can provide experiences that fit your special classroom needs. You can create or edit games for any section except PICTURES. In LETTERS, NUMBERS, WORDS, and MATH, you can save up to 10 games ( 20 on the Commodore version). Each game includes nine sets of boxes.

## TO USE THE EDITING FEATURES:

Remove the write protect sticker from your diskette before editing. Display the main menu.

2. LETTERS . . . . . . . . . . ABC
3. NUMBERS . . . . . . . . . . . 123
4. HORDS . . . . . . . . . . . . . 'HORD'
5. MATH. .................. . $1+2$

Which one (1-5)?

While the main menu (above) is displayed, hold down the CONTROL key and then type "T." (On the Commodore 64 hold down $\Theta$ and then type "T.") The CHANGE OPTIONS MENU will appear.


From the CHANGE OPTIONS MENU, select the section (LETTERS, NUMBERS, WORDS, or MATH) you want to use.

## TO CREATE A NEW GAME:

The CREATE GAME option will allow you to create up to 10 games in each section. (Commodore version will allow 20 games.) The example that follows is based on the WORDS section.

Select CREATE GAME from the section menu (LETTERS, NUMBERS, WORDS, or MATH). You will see the NEW GAME screen.


Each game is composed of nine sets of boxes (problems). The "set number" in the upper left corner indicates the set on which you are working. Information is entered at the flashing cursor (box or arrow). Pressing RETURN will move the cursor to the next box. Up to eight characters can be entered in each box in WORDS or MATH games. One character can be entered in each box in LETTERS or NUMBERS games.
"Think About" hints are optional. Up to twenty characters can be entered in the "Think About" box. In some problems, "Think About" hints are not appropriate or necessary. To pass this option, press RETURN.

When you have completed a set of boxes, press to see the next set. You can view previous sets by pressing $\longleftarrow$. To exit the Create game process, press ESC. (On the Commodore 64 press Fl for the next set of boxes, F3 for the previous set, and F7 to exit the Create game process.)

Select Edit Game from the section menu, then choose the game you want to edit.


The editing screen you see will be like the Create Game screen, except that the name of the game you chose to edit will be displayed at the top.


From this editing screen, you can change or complete any finished or unfinished game.

## TO DELETE A GAME:

Select Delete Game from the section menu.


Choose the game you want to delete.


You will be asked if you are sure you want to delete the game you have chosen. If you answer "yes," it will be deleted. You can not delete the game set as the "current game." At least one game for each section (LETTERS, NUMBERS, WORDS, MATH) must remain on the disk.

Each section has its own menu showing the current game selected and listing any other finished or unfinished games that have been saved.


## TO SET THE GAME:

This option allows you to set the game students can play (current game) to any completed game listed. An ${ }^{*}$ is used to indicate an unfinished game.

The following pages suggest a variety of concepts that can be used in ODD ONE OUT. Create and save your own games before allowing students to play LETTERS, NUMBERS, WORDS, or MATH. The DEMO games on the disk are only included to suggest possible problems. Some of the DEMO games cover too wide a range to be appropriate for students.

For very young students a concrete experience with discrimination or classification should precede use of the program. Be sure that the concrete example utilizes the same type of discrimination or classification as the game they play will require. For example:

PICTURES 1 - Hold up 3 identical pencils and 1 scarf (or other unassociated object). Ask students to identify the "odd" one.

PICTURES 2 - Hold up 3 identical pencils and 1 pen. Discuss "identical" (the three pencils) and "class or group" (writing instruments).

PICTURES 3 - Hold up a ballpoint pen, a magic marker, a pencil and a pair of scissors. Discuss the relationship between the first three items and why scissors is the "odd one out."

Older students can create games for younger students. During field-testing, one sixth grade class that had an on-going "big brother/sister" relationship with a second grade class created a personalized game for each second grade student. The games included words from individual creative writings, spelling lists, and reading group stories.

Challenge games can be created by using unusual or subtle categories in which the associations are more remote. For example:

| blue <br> Earth | green | four | like | - four letter words |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| red | blue | Coptune | Mercury | - | planets in order |

## PICTURES



SKILLS:
GRADE LEVEL:

TIME REQUIRED:
OBJECTIVES:

Visual discrimination, Classification
Preschool, kindergarten, first grade, special education

3-5 minutes

1. To practice distinguishing objects.
2. To practice principles of classification.
3. To help students find order and discover relationships by looking for similarities and differences.

PICTURES gives students practice in recognizing similarities and differences, and in grouping and classifying objects. The program has three levels of difficulty. Students are asked to choose which level they want to play.

The PICTURES games are the only games that can not be edited.

Level 1 - shows three identical objects and one other object from a different group. For example, three ducks and one igloo:


Level 2 - shows three identical objects and one other object from the same group. For example, three cats and one giraffe:


Level 3 - shows three different objects from one group and one other object from another group. For example, three different aircraft and one animal:



## SKILLS:

GRADE LEVEL:

TIME REQUIRED:
OBJECTIVES:

Visual discrimination, Classification, Sequence
Preschool, kindergarten, first grade, special education

3-5 minutes

1. To practice single-letter discrimination.
2. To practice recognizing upper and lowercase letters.
3. To practice recognizing alphabetical order.
4. To practice identifying vowels and consonants.

LETTERS uses single letters of the alphabet. LETTERS games are created by the teacher. Any LETTERS game can be edited. A LETTERS game could offer practice with a single concept, or with a variety of concepts. The following examples illustrate some of the possible uses for LETTERS games.

3. Alphabetical order:
4. Consonants or vowels:



SKILLS:
GRADE LEVEL:

TIME REQUIRED:
OBJECTIVES:

Visual discrimination, Classification, Counting
Preschool, kindergarten, grades l-6, (depending on concept used), special education

3-5 minutes

1. To practice simple number discrimination.
2. To practice identifying odd and even numbers.
3. To practice counting and recognizing numbers in order.

NUMBERS uses single digits. It may be used to provide practice with a wide variety of concepts:

1. Simple number identification:

2. Odd or even numbers:


3. Counting:

4. Divisible by 3:

5. Skip counting:

6. Multiples of 2 :



## SKILLS:

GRADE LEVEL:
TIME REQUIRED:
OBJECTIVES:

Visual discrimination, Spelling, Reading, Grammar, Classification

2-6
3-5 minutes

1. To produce varied situations in which words must be analyzed.
2. To recognize combinations of letters which form words.
3. To associate words as composites of letters.
4. To identify words as belonging to a specific group.
5. To provide practice in recognizing correct spelling.
6. To emphasize terms in a given subject area.

WORDS can be an exciting and challenging game. The difficulty level and classroom uses are quite varied, depending upon your objectives. WORDS does not have to be limited to use of complete words. You an use parts of words, such as prefixes and suffixes, digraphs and diphthongs. The following are just a few possibilities for WORDS games:

1. Simple words:

2. Visually similar words:


## 4. Homonyms:

3. Parts of words:



## 5. Parts of speech:



## 6. Synonyms:


7. Classification - for example, words dealing with transportation:

8. Vocabulary - words that pertain to a subject you are teaching. For example, if you are teaching the Gettysburg Address, you might use words like the following:



Hhich one?
Please type $=$ PFOR PURPLE G EgR GREEN

SKILLS:
GRADE LEVEL:
TIME REQUIRED:
OBJECTIVES:

Visual discrimination, Numeration, Operations
2-6
3-5 minutes

1. To practice identifying operations.
2. To practice working math problems.
3. To produce varied situations in which numbers can be analyzed.

The MATH games section of ODD ONE OUT can be the most complex of the five sections. Not only must the students be able to identify which is the "odd one" but they must also be able to work the math problems. The classroom uses for MATH games are numerous. "Think About" hints will be particularly helpful in these MATH games.

The following examples illustrate a few of the many possible uses for MATH games.

1. Equivalent sums, differences, products, quotients:

2. True or false equations:

3. Prime numbers:

4. Same operation:

5. Perfect squares:

6. Multiples of ten:


Which one?


## 7. Divisible by:


9. Decimals:

8. Equivalent fractions:

10. Percentages



SUMBURST .

## APPLE II: WORKING WITH YOUR COMPUTER

TURNING ON THE COMPUTER:
(1) Turn on the television or monitor.
(2) Insert the diskette into the disk drive with the label facing up and on the right.
(3) Close the door to the disk drive.
(4) Turn on the Apple II. (The on-off switch is on the back left side of the computer.)
(5) You will see a red light on the disk drive turn on. If the disk drive light does not turn off after about 10 seconds, turn the Apple off and make sure your diskette is placed correctly in the disk drive.
(6) SUNBURST will appear on the screen.
(7) Follow directions given in the program.

TURNING OFF THE COMPUTER:
(1) Remove the diskette from the disk drive and return it to its place of storage.
(2) Turn off the Apple.
(3) Turn off the television or monitor.

TURNING ON THE COMPUTER:
(1) Turn on the television or monitor.
(2) The disk drive must be turned on before the computer. Turn on the disk drive. (The switch is located at the back right side of the drive.)
(3) Open the door of the drive by pressing in on the door. Insert the diskette with the exposed oval window inserted first and the label up.
(4) Close the door on the disk drive.
(5) Turn on the computer. You will see the words--

> ****COMMODORE 64 BASIC V2****
> 64K RAM SYSTEM 38911 BASIC BYTES FREE READY.
(6) Type LOAD " $\emptyset: * ", 8$ and press the Return key. The red light on the disk drive will come on. The computer will print--
"Searching for 0 "
LOADING.
READY.
(7) Type RUN.
(8) If at any time during the program you want to stop, hold the CTRL (Control) key and press the E key.

TURNING OFF THE COMPUTER:
(1) Remove the diskette.
(2) Turn off the disk drive, computer, and television.

What happens if a program will not load or run?
Call us toll-free at (800) 431-1934 and we will send you a new diskette. In New York, Alaska, Hawaii, and Canada call collect (914) 769-5030.

What if $I$ find an error in the program?
We have thoroughly tested the programs that SUNBURST carries so we hope this does not happen. But if you find an error, please note what you did before the error occurred. Also if a message appears on the screen, please write the message down. Then fill out the evaluation form or call us with the information. We will correct the error and send you a new diskette.

What happens if the courseware is accidentally destroyed?
SUNBURST has a lifetime guarantee on its courseware. Send us the product that was damaged and we will send you a new one.

How do I stop a program in the middle to go on to something new?
Hold the Control (CTRL) key down and press the E key.

Can I copy this diskette?
The material on the diskette is copyrighted. You should not copy the diskette.

Can I take this diskette out of the computer after the program has been loaded and put it into another computer?

Yes, after the options have been selected and the passage is on the screen, the diskette can be removed. But after the student has completed the passage and seen the final score, the diskette must be reinserted in the disk drive before the student can play the game again.

