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## INTRODUCTION

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The purpose of this book is to help students develop their innate logical dexterity by stimulating their curiosity with logical problems that are fun to solve. Logic skills have extremely useful applications. Students can improve their conceptualization, critical reading, and debating abilities. Also, the confidence achieved by methodically solving problems and applying creative logic in new situations can greatly increase a student's desire to seek out new learning experiences.

The activities in this book are divided into five parts, each concentrating on a different skill: Classification, Sequencing, Inference, Deduction, and Creative Logic. Each section begins with an introduction to the skills practised in that section. The activities can be worked through systematically; however, this is not necessary. The problems in the latter part of each section are more difficult than those in the beginning.

You can use the activities independently with students who have completed other classwork, or you can distribute the worksheets for a change in class routine. The activities take about ten or fifteen minutes each. Often the skills involved in solving these logical problems will compliment a traditional lesson in science, social studies, or maths.

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# Game, Set, Match

A "set" is a group of people, objects, or words that have something in common. For example, there is a *set* of "games." Basketball and chess would be in the *set* of "games." One member of the *set* "games" is listed below. Write five other games in the spaces provided.

- |                       |          |          |
|-----------------------|----------|----------|
| 1. _____ tennis _____ | 3. _____ | 5. _____ |
| 2. _____              | 4. _____ | 6. _____ |

Sometimes a whole *set* will fit into another *set*. For example, all "board games" are "games." So "board games" are a *subset* of "games." Below is an incomplete list of *members* of *subsets* of the *set* "games." Fill in the blanks to complete the list.

Subset	Member
1. _____ board games _____	_____ chess _____
2. _____	_____
3. _____	_____
4. _____	_____

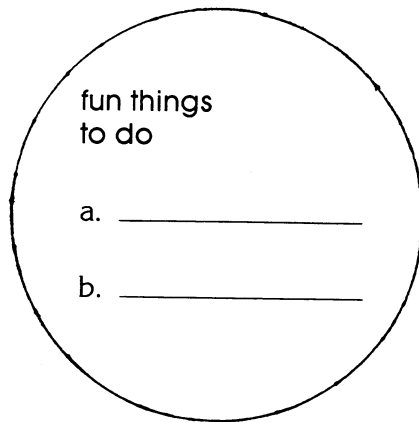
Sometimes some of the members of a *set* will also belong in another set. For example, some "indoor games" are also "ball games"; think of "table tennis." So "indoor games" and "ball games" are *intersecting sets*. Below is an incomplete list of a pair of *intersecting sets* and a common *member* of both sets. Fill in the blanks to complete the list.

Set	Set	Member of Both Sets
1. _____ ball games _____	_____ indoor games _____	_____ table tennis _____
2. _____	_____	_____
3. _____	_____	_____
4. _____	_____	_____

Name \_\_\_\_\_

# Circle Sets

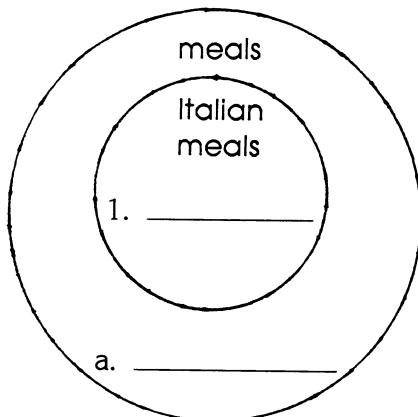
Circles are often used to represent *sets*. The circle below contains the *set* "fun things to do."



Since "a" and "b" are inside the circle they must be fun things to do. Since "c" is outside the circle it must *not* be a fun thing to do. Write some fun things to do in the spaces after "a" and "b" and something that is *not* fun to do in the space after "c."

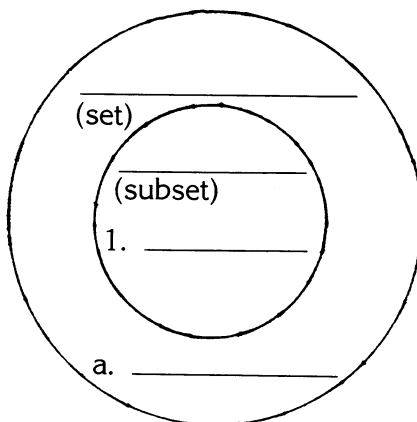
c. \_\_\_\_\_

A circle that is inside another circle represents a *subset*. "Italian meals" are a *subset* of meals.



Write a *member* of the *subset* "Italian meals" in the space after "1." Write a *member* of the set "meals" after "a." Remember, "a" is outside of the *subset* "Italian meals."

Now make up your own *set* and *subset*.



Write the name of the *set* and *subset* and *members* and *nonmembers* of each in the spaces provided.

b. \_\_\_\_\_

# Squiggles, Tiggles, and Zares

As a zoologist on the planet Bruto, you are trying to classify the animals you come across. One of the inhabitants tells you about three types of animals.

A Squiggle is any animal with at least two eyes.

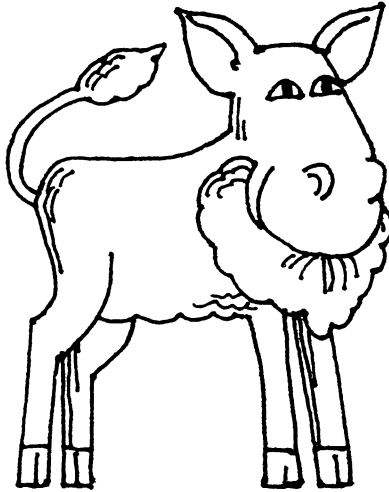
A Tiggle is any Squiggle with a beard.

A Zare is any animal with a beard that is not a Squiggle.

Classify the animals below. Write your answers in the spaces provided.



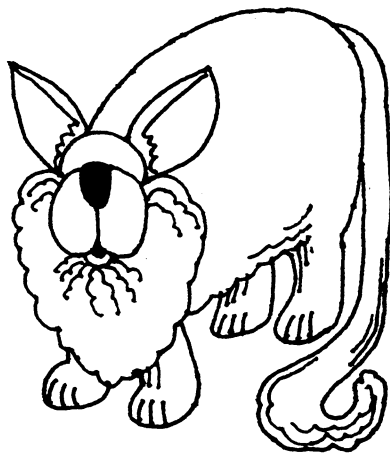
a. \_\_\_\_\_



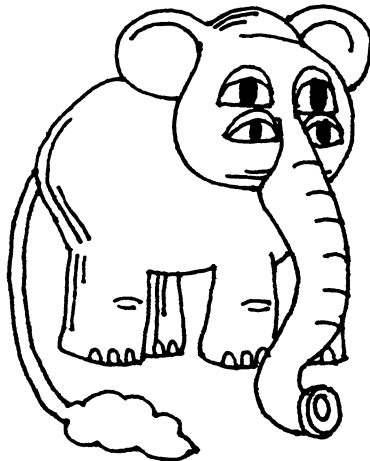
b. \_\_\_\_\_



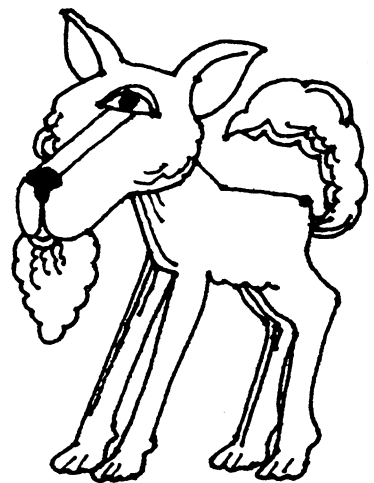
c. \_\_\_\_\_



d. \_\_\_\_\_



e. \_\_\_\_\_



f. \_\_\_\_\_

Circle the correct answer:

Can you draw a Squiggle that is not a Tiggle?

Yes No

Can you draw a Tiggle that is not a Squiggle?

Yes No