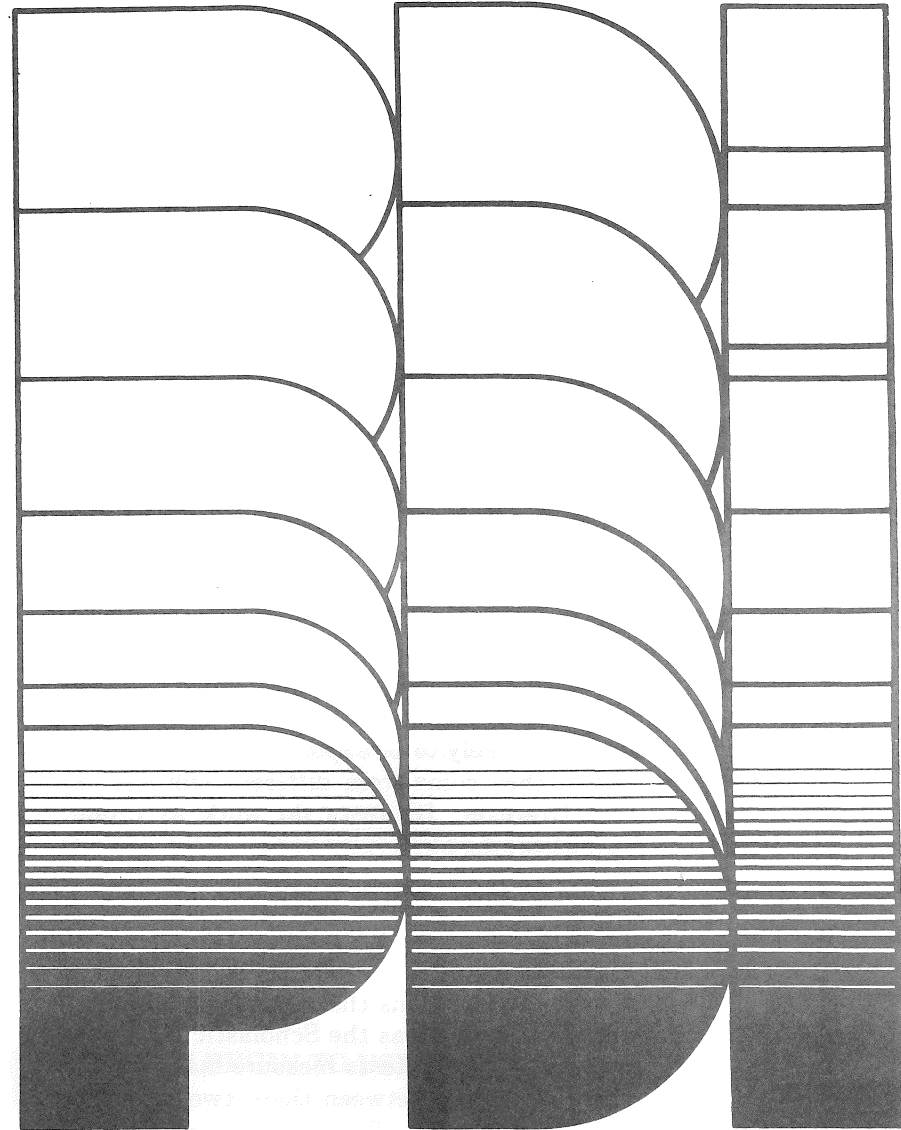


Guide



PROGRAM DESIGN INCORPORATED

Analogies

IQ-Builder

Copyright © 1978 Program Design, Inc. All rights reserved. No part of this material may be reproduced in any form without the written permission of the publisher. Printed in the U.S.A.

*Note: Please read this Guide
before you load the tape.*

WHAT IS IQ?

IQ is shorthand for "intelligence quotient." Quotient is a number resulting from division. The intelligence quotient was calculated from the first IQ tests by dividing someone's "mental age" by their chronological age. A child who had a chronological age of 10 and who scored the same as an average 12-year old had an IQ of 12 divided by 10, or 120 (multiply by 10). Similarly, a child with a chronological age of 8 who scored average for an 8-year old had an IQ of 8 divided by 8 or 100. This system was later dropped in favor of statistical calculations where the average score on an IQ test was set as 100. The name of the score is still called IQ even though it is not calculated from division of mental and chronological ages.

IQ tests are supposed to measure a person's ability to learn. However, to do this the IQ test actually measures what a person has learned in the *past*. The idea is that if two people are exposed to the same experiences and one person learns more, that person is more intelligent. The flaw in this concept is that individuals are not likely to be exposed to the same experiences, especially if they come from different cultures or social backgrounds. However, IQ tests do work as crude measures of a person's learning ability.

WHAT DO TESTS SUCH AS THE SAT MEASURE?

Many of the same types of questions that appear on IQ tests also appear on aptitude tests such as the Scholastic Aptitude Test (SAT). IQ tests and aptitude tests measure many of the same things. The big difference between these two types of tests is the use to which each is put. The SAT is used as a predictor of how well a high school student is going to do in college. The test is designed specifically for this purpose. Evidence shows that the combination of grades, SAT scores, College Board Achievement Test scores and recommendations has proved to be an excellent, though not perfect, predictor of how well a high school student is going to do in college.

Aptitude tests are divided into two separate abilities areas: verbal and mathematical, and two separate scores are usually reported when the tests are processed. Typical verbal aptitude questions are: synonyms and antonyms, analogies (word relationships), sentence completions and reading comprehension. Typical math aptitude questions often involve number series, data interpretation, data comparison, story problems, elementary algebra and elementary geometry.

HOW DOES IQ BUILDER HELP?

Many people who have above-average intelligence do poorly on aptitude and IQ tests. One reason is that these individuals have not developed problem-solving skills needed to answer the types of questions found on these tests. The test taker must be able to analyze a question, separate it into its component parts, and then test a variety of answers to find the one that best fits the problem. The poor problem-solver does not follow any real plan of action. Instead he or she looks for an instant answer, or writes the first solution that comes to mind. On a multiple-choice test, the poor problem-solver usually jumps at the first answer that looks like it might be correct. In short, he or she panics and is unable to think through the problem at hand.

The *IQ Builder* series helps you to develop the problem-solving skills needed to do well on IQ and aptitude tests. Each of the courses in the series contains a group of lessons that help you with a specific category of questions. All of the courses will help you to develop your skills so you can handle even the most complex questions.

HOW DO I BEGIN TO USE IQ BUILDER?

Always begin with the first lesson in the course even if you think you know enough to skip ahead. Follow directions in your Computer Manual to load each lesson. There are several lessons on each side of the tape. Do the programs in order because each lesson builds on the one before. Repeat each lesson until you feel you can handle the examples in that lesson.

HOW LONG WILL A LESSON TAKE?

You can make each session last as long as you wish. You can do each of the lessons in about 30 minutes. If you want to stop for more than a few minutes, it is best to turn off the computer and TV monitor. When you resume, rewind the tape to the beginning of that lesson and reload the lesson.

PROGRESS CHART

The Progress Chart at the end of this Guide has space to write the number of each lesson, your comments and how well you did. You can use it to keep track of where you are in the program and to see your improvement, too.

TEST

There is a test at the end of each course. You can take the test after completing all the lessons—or earlier in the course—to see how well you can handle sample test questions.

WHAT ARE ANALOGIES?

An analogy can be one of the toughest of verbal questions to handle because all of the meanings, connotations and uses of words have to be considered when answering the question. There are twenty-seven basic types of analogies. These basic types are discussed more fully on page 7. Here is a sample of an analogies question:

Big is to little as:

- (1) man is to men
- (2) dog is to cat
- (3) run is to walk
- (4) hot is to cold

A test taker must analyze the relationship between the words “big” and “little” and find the word pair that has the same relationship. Big and little are opposite extremes. Therefore the correct choice in (1), (2), (3) or (4) must also show opposite extremes. The best choice is (4)—hot is to cold. However, (3) might also be thought of as a sort of opposite. The key here is the phrase “best choice.” (4) is more of an opposite than (3).

ORGANIZATION OF THE COURSE

Side A of the tape cassette contains Lessons 1 to 4. Side B contains Lessons 5 and 6 plus a final test of your skill with analogies. Each lesson gives you the opportunity to work with as many or as few problems as you wish. For example, in Lesson 1 you can do anywhere from 1 to 30 problems at one sitting. You can start a lesson at any point you wish from problem 1 to problem 30. You could do problems 1 thru 10 on one day, and then do 10 thru 30 on the next. You may also find certain problems that you must do over several times before you get the “feel” of the problems.

Lessons 1 And 2

In these lessons the student must classify word pairs. This may prove to be a bit more difficult than some analogies problems themselves, but the practice will provide you with the ability to analyze almost any type of analogies problem. Here is a sample:

WRITER is to TYPEWRITER is what type of analogy?

- (1) worker to object created
- (2) person to goal
- (3) worker to tool
- (4) tool to object created
- (5) cause and effect

The correct answer is (3) worker to tool. Each of these lessons consists of 30 problems. An evaluation of your performance is given at the end of each session. It is recommended that you redo the lesson if you score below 60% correct, but you might also want to review the problems until you can easily score 90%.

Lesson 3

Lesson 3 consists of 20 problems in the following form:

MOTHER is to DAUGHTER as FATHER is to:

- (1) boy
- (2) son
- (3) uncle
- (4) child
- (5) sibling

The answer to the above problem is (2) son.

If a mistake is made the program will give you a hint by first telling you what kind of analogy is shown in the problem. The program will give you a second hint if you wish. If you correctly answer the question on the second try, your correct response is worth only .7 of a correct answer. A second error will cause the program to give you the correct answer.

Lessons 4 And 5

Lessons 4 and 5 each consist of 15 questions of the following type:

KENNEL is to BULL TERRIER as:

- (1) dog is to cat
- (2) cage is to bird
- (3) cage is to green parrot
- (4) house is to man

The correct answer is (4) cage is to green parrot. The above problem is specific about the breed of dog kept in the kennel, so the correct matching word pair must also be specific about the breed of bird kept in a cage. Except for the form of the questions, these lessons work like Lesson 3.

Lesson 6

This lesson is similar to the previous lessons except that the problems are presented in a different way:

EROSION : WATER ::

- (1) ocean : wind
- (2) fog : travel
- (3) solid : liquid
- (4) aging : time
- (5) melt : heat

The answer is (5) melt : heat.

TYPES OF ANALOGIES

One way to analyze analogies is to reduce the relationship between the two words to a simple sentence. Here are some examples:

PAINTER is to BRUSH	A uses B in his or her work
DIAMOND is to GEM	A is an example of B
LITERATE is to READ	One who is A can do B
ILLNESS is to FEVER	A can cause B
PAUPER is to MONEY	A does not have B
BLINDERS is to VISION	A interferes with B
POLICE is to	
CRIMINALS	A protects us from B
FOUNDATION is to	
BUILDING	A supports B
SPRINT is to RUN	A is a more violent form of B

The above system is a good way to start to analyze word relationships, but you must do more. For example, how would you analyze DOG is to CAT? A chases B? A is bigger than B? A and B are both pets? Any of these may be correct.

Another more precise way to analyze analogies is to classify the word pairs. Following is a list of our classes of word relationships:

TYPE 1—part to whole

Examples: leg is to man
wheel is to car
lace is to shoe

TYPE 2—type to one of its characteristics

Examples: skunk is to bad smell
elephant is to large
old car is to rusty

TYPE 3—things that are part of the same thing

Examples: ears is to eyes (part of head)
halfback is to center (part of a football team)
branches is to leaves (part of a tree)

TYPE 4—measurement to what is measured

Examples: pint to liquid
meter to distance
decibel to sound

TYPE 5—measurement to object measured

Examples: pint to beer
meter to cloth
decibel to radio speaker

TYPE 6—class to species

Examples: dog to greyhound
insect to fly
vehicle to truck

TYPE 7—group to member

Examples: army to sergeant
pack to wolf
team to player

TYPE 8—things in same class

Examples: truck to car (both vehicles)
boxer to runner (both athletes)
crow to robin

TYPE 9—things with a feature in common

Examples: match to lightbulb (both give off light)
clock to car (both have gears)
bottle to lens (both made of glass)

TYPE 10—measures of the same thing

Examples: pint to gallon (measures of liquid)
pound to kilogram (measures of weight)
goals to touchdowns (measures of score)

TYPE 11—hierarchies

Examples: general to private
president to congressman
parent to child

TYPE 12—cause and effect

Examples: hit to break
fire to burn
switch on to operate

TYPE 13—things to what they do

Examples: cork to plug up
soap to clean
pencil to write

TYPE 14—tools to material

Examples: saw to wood
hammer to nail
sewing machine to cloth

TYPE 15—tools to what they create

Examples: potter's wheel to vase
motor to power
saw to cabinet

TYPE 16—condition to what happens in that condition

Examples: storm to rain
sick to fever
happy to smile

TYPE 17—worker to object created

Examples: carpenter to cabinet
farmer to corn
assembly worker to car

TYPE 18—worker to tool

Examples: carpenter to hammer
mechanic to wrench
surgeon to scalpel

TYPE 19—person to goal

Examples: general to victory
runner to 4-minute mile
climber to mountain peak

TYPE 20—person to something they avoid

Examples: child to the dark
claustrophobic to a closed space
general to defeat

TYPE 21—synonyms and antonyms

Examples: dishonest to unethical (synonym)
strong to weak (antonym)

TYPE 22—things that go together

Examples: cup to saucer
clouds to rain
driver to car

TYPE 23—a thing dependent on another thing

Examples: man to food
fire to fuel
health to clean air

TYPE 24—a thing derived from another thing

Examples: metal to ores
cell growth to protein
cabinet to wood

TYPE 25—a specific condition that occurs on/to a particular thing

Examples: wind to atmosphere
rash to skin
vibrate to violin string

TYPE 26—opposing things or forces

Examples: electron to proton
ying to yang
Republicans to Democrats

TYPE 27—words related by grammar

Examples: man to sky (both nouns)
blue to large (both adjectives)

Of course, some of these classifications overlap. Some word pairs will fit into several classifications. The idea is to pick the class that *best* fits the relationship.

Once the test taker can categorize the relationships between word pairs, he or she can eliminate choices. However, when answering analogy-type questions, there may be more than one relationship involved, as shown in this example:

SELDOM is to FREQUENTLY as:

- (1) occasionally is to rarely
- (2) top is to bottom
- (3) never is to always
- (4) occasionally is to often

SELDOM is to FREQUENTLY is a type 21 relationship — that is, an antonym. These two words have opposite meanings. However, (2), (3) and (4) also are antonyms. Therefore the correct answer is based on an additional relationship.

Seldom and *frequently* are not absolutes. *Seldom* means that something can happen, but not too often. *Top* and *bottom*, and *never* and *always* are absolutes. The best choice here is (4), occasionally is to often.

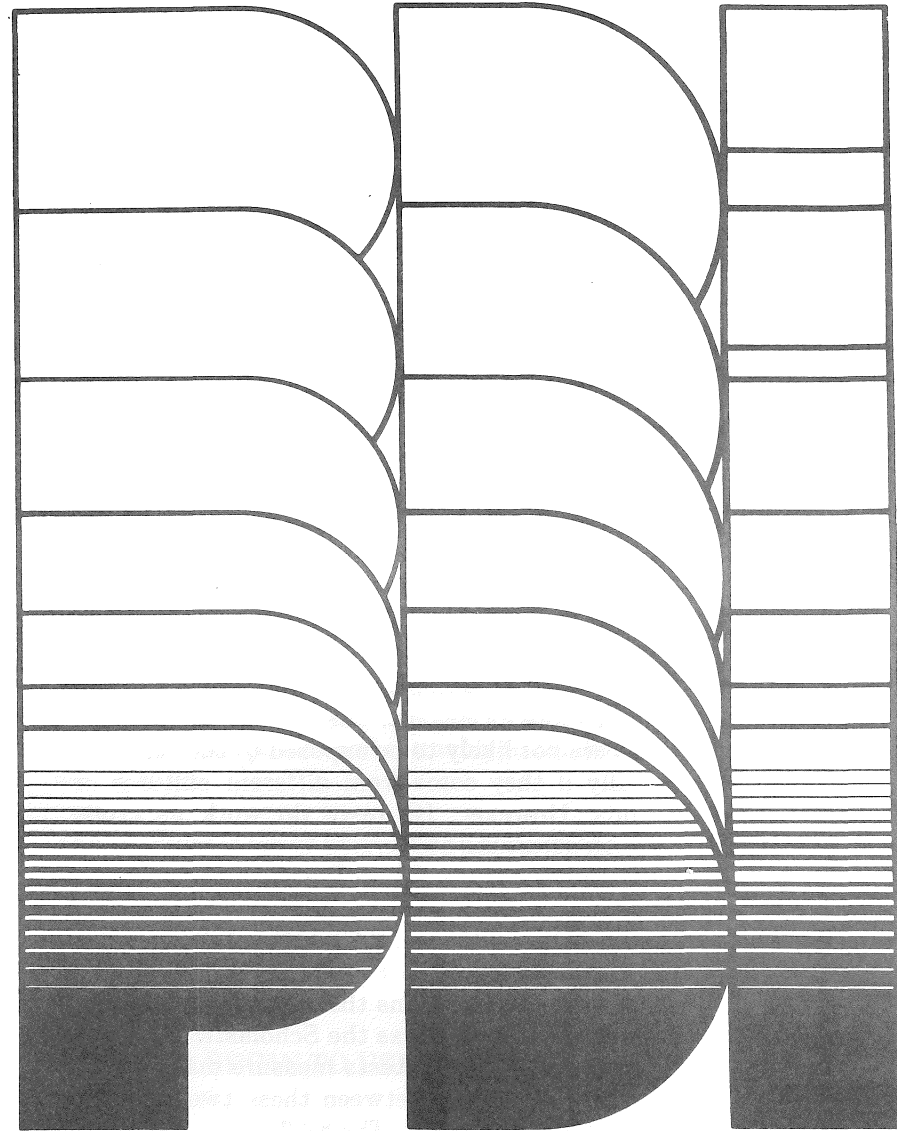
*You are now ready
to load the tape.*

PROGRESS CHART

Student: _____

Lesson Number	Comments									Score

Guide



PROGRAM DESIGN INCORPORATED

Analogies

IQ-Builder

Copyright © 1978 Program Design, Inc. All rights reserved. No part of this material may be reproduced in any form without the written permission of the publisher. Printed in the U.S.A.