

CAREERS
FOR
PUZZLE
SOLVERS
& Other
Methodical
Thinkers

Do you look forward to doing the Sunday crossword puzzle every week? When others see a problem, do you see the solution? If so, you're a puzzle solver, and you can put your good ideas and forward thinking to work in a range of fascinating fields, including computer science, inventing, interior design, archaeology, and more.

Jan Goldberg

VGM Careers for You Series

CAREERS
FOR
PUZZLE
SOLVERS
& Other
Methodical
Thinkers

Jan Goldberg

VGM Career Books

*Chicago New York San Francisco Lisbon London Madrid Mexico City
Milan New Delhi San Juan Seoul Singapore Sydney Toronto*

VGM Career Books

A Division of The McGraw-Hill Companies



Copyright © 2002 by The McGraw-Hill Companies. All rights reserved. Printed in the United States of America. Except as permitted under the United States Copyright Act of 1976, no part of this publication may be reproduced or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written permission of the publisher.

1 2 3 4 5 6 7 8 9 0 LBM/LBM 1 0 9 8 7 6 5 4 3 2

ISBN 0-658-00180-9 (hardcover)
0-658-00181-7 (paperback)

This book was set in Goudy Old Style by ImPrint Services
Printed and bound by Lake Book Manufacturing

McGraw-Hill books are available at special quantity discounts to use as premiums and sales promotions, or for use in corporate training programs. For more information, please write to the Director of Special Sales, Professional Publishing, McGraw-Hill, Two Penn Plaza, New York, NY 10121-2298. Or contact your local bookstore.

This book is printed on acid-free paper.

CAREERS
FOR
**PUZZLE
SOLVERS**
& Other
Methodical
Thinkers

This book is dedicated to my
very special husband, Larry,
and my precious daughters,
Sherri and Debbie. Thank
you for bringing so much joy
into my life.

Acknowledgments

The author gratefully acknowledges:

- The numerous professionals who graciously agreed to be profiled in this book
- My dear husband, Larry, for his inspiration and vision
- My daughters, Sherri and Deborah, for their encouragement and love
- Family and close friends—Adrienne, Marty, Mindi, Cary, Michele, Paul, Michele, Alison, Steve, Marci, Steve, Brian, Steven, Jesse, Andy, Colin, Bertha, and Aunt Helen—for their faith and support
- Diana Catlin, for her insights and input
- Editors Denise Betts and Betsy Lane, for making all projects rewarding and enjoyable

Contents

Acknowledgments	ix
CHAPTER ONE	
Introduction	1
CHAPTER TWO	
Careers in Interior Design	5
CHAPTER THREE	
Careers in Archaeology	19
CHAPTER FOUR	
Careers in Engineering	29
CHAPTER FIVE	
Careers in Medicine	45
CHAPTER SIX	
Careers in Automobile Mechanics	61
CHAPTER SEVEN	
Careers in Architecture	71
CHAPTER EIGHT	
Careers in Private Detecting and Investigating	85
CHAPTER NINE	
Careers in Investigative Reporting	99

<i>CHAPTER TEN</i>	
Careers in Inventing	113
<i>CHAPTER ELEVEN</i>	
Careers in Computer Science and Mathematics	127
<i>CHAPTER TWELVE</i>	
Careers in Research	149
About the Author	179

CHAPTER ONE

Introduction

When I'm working on a problem, I never think about beauty. I think only how to solve the problem. But when I have finished, if the solution is not beautiful, I know it is wrong. R. BUCKMINSTER FULLER

A mother is watching from across the room as her four-year-old son tries desperately to retrieve the coins that he just deposited into his new piggy bank. He stares at the bank for a moment, then shakes it vigorously. He frowns, then turns it upside down and shakes it again. His scowl deepens as he tugs on the pig's ears, tries to twist its nose, even tries fitting his fingers into the coin slot on top. After several minutes of trial and error, he finally notices the rubber stopper on the bottom. With one firm tug, the stopper comes out, and the coins spill onto the floor. "Mommy, I did it!" he squeals with delight, beaming from ear to ear.

His mother smiles proudly, wondering what great future awaits her son. At his young age, he's already practicing the puzzle-solving skills and methodical thinking that will one day come in handy as he decides which career path to follow.

There are many exciting careers that require the uncovering of clues and other evidence. Such clue gathering is then followed by applying one's skills and experience to put all the evidence together in order to come to a logical conclusion, solve a problem or puzzle, or fix something that is broken. You could say, then, that this book is all about detectives. Private investigators are discussed, of course, but you'll also find profiles of several other careers that employ similar clue-gathering and interpretation methods.

Do you think you'd be good at solving puzzles for a living? Find out if you have what it takes by answering true or false to the following statements.

1. When presented with a problem, I can usually think of more than one way it might be solved.
2. I would welcome the challenge of trying to solve a puzzle that no one has been able to solve before.
3. I am patient long after most people would have given up.
4. The process of trial and error doesn't frustrate me; it challenges me to work harder!
5. Sometimes I take things apart just to see if I can put them back together again.
6. If I were having a hard time solving a puzzle, I would keep at it until I figured it out.
7. I am always looking for new challenges.
8. I am willing to pursue a career that requires that I continually stay abreast of the latest trends and/or advancements in my field.
9. I never get bored when working on the same project for a long time.
10. I don't give up easily.
11. I can usually turn on a dime and change my way of thinking quickly if my first approach to solving a problem doesn't work out.
12. I'm known for always thinking logically.
13. I'm fascinated by the way all the pieces of a puzzle fit together so neatly.

If most of these statements were true for you, you're probably a born puzzle solver! Even if just a handful of them are true, it sounds as if you'll benefit from the information presented in this book. You'll learn all about what it takes to become an archaeologist, architect, automobile mechanic, private investigator, engineer, computer scientist, doctor, inventor, investigative reporter, research scientist, or interior designer. Though this list of careers is seemingly very diverse, they all have one important element in common: they all rely heavily on puzzle solving and methodical thinking skills.

So let's get started in solving our first puzzle: which career path *you* might choose to follow!

Nothing in this world can take the place of persistence. Talent will not; nothing is more common than unsuccessful people with talent. Genius will not; unrewarded genius is almost a proverb. Education will not; the world is full of educated derelicts. Persistence and determination alone are omnipotent. The slogan 'press on' has solved and always will solve the problems of the human race. CALVIN COOLIDGE

For every problem, there is a solution that is simple, neat, and wrong. HENRY LOUIS MENCKEN

The problems that exist in the world today cannot be solved by the level of thinking that created them. ALBERT EINSTEIN

CHAPTER TWO

Careers in Interior Design

Always design a thing by considering it in its next larger context—a chair in a room, a room in a house, a house in an environment, an environment in a city plan. ELIEL SAARINEN

Help Wanted: Interior Designer

We are seeking an interior designer to work full-time for our firm in Arizona. Candidates will be expected to develop and execute a broad spectrum of office-planning projects, maintain control of project costs, and work with senior office-planning staff to assure compliance to all company and governmental regulations.

Requirements include a minimum of three years' experience in office planning, furniture specification, and building-finishes selection. Candidates must also possess the ability to plan and execute office construction and renovation projects. Superior interpersonal skills, the ability to work independently, knowledge of various office furniture brands (such as Herman Miller, Knoll, and Steel Case), and pharmaceutical experience are desired. The job offers a generous benefit package.

Zeroing In on What an Interior Designer Does

If you have a flair for color, shape, balance, pattern, and room furnishings, then interior design may be a perfect fit for your future!

Interior designers design living and working spaces. Glamorous portrayals of the profession show interior designers happily

flitting about mansions, absorbing the “flow” of the place and discussing curtains. But interior designers are actually responsible for the entire inside of a building—the design, decoration, and functionality of it, whether it’s residential, commercial, or industrial. They are concerned with keeping form, color, scale, and arrangement in balance, and they must be familiar with current trends as well as historical periods that have influenced furniture styles and room design. They must be certain that the design works for its purpose; if a building’s pattern of entrances and exits made no sense to the occupants, it would be a failure. Interior designers must also ensure that the building’s inside relates to its outside; a building constructed for use as an industrial warehouse, for instance, would not have an interior design like that of a luxury home.

This profession falls somewhere between a decorator and an architect, for interior designers not only have to know which paint colors and fabrics will look best, but also which walls can be torn down without causing structural damage or where the public rest rooms should be located in an office building. In fact, in some European countries where interior design is a more established profession, it is called interior architecture.

The puzzle that interior designers solve every day is trying to fit their experience, creativity, and good judgment together with the desires and requirements of their clients, while also making everything look attractive, function properly, and stay within budget. And, it all must be in accordance with federal, state, and local laws, taking into account such things as building codes, flammability and toxicity standards, and accessibility. In fact, interior design is the only design field subject to governmental regulations; like doctors and architects, in some states interior designers are required to be licensed in order to practice the profession.

Because they often begin their work before a building is completed, interior designers have to know how to think like architects, using blueprints to guide them as they prepare sketches and

models of their designs. Once those designs are approved by their clients, it's time for meetings (with plumbers, electricians, and other contractors) and shopping (for furniture, wall coverings, floor coverings, and window treatments)—all while making sure every aspect of the project is taken care of, clients are satisfied, directions are being followed, and they are not spending more money than that which has been authorized.

Those who have been in the field a long time and those who are new to it share a common challenge: dealing with difficult clients who might not understand why their vision of how they want their building's interior to look cannot be made a reality due to structural, financial, or other concerns. This is where an interior designer's people skills come into play. Some clients also demand that the interior designers they hire are available whenever they need them, which often results in working long or irregular hours and on weekends. However, experienced and successful interior designers may enjoy many perks, like contact with high-profile and/or wealthy clients, substantial salaries, and frequent travel to meet with clients or to shop for new materials at wholesale markets.

On the Job

People are busier these days than ever before, and many just don't have the time to design and decorate their homes and work spaces. However, because the hiring of an interior designer is still considered by some to be a luxury expense, jobs are more plentiful during prosperous times.

Fledgling designers usually receive on-the-job training for two or three years. Once designers are licensed, there are numerous paths to follow within the two major categories—residential and commercial. Within each are specialized fields and specialties. An interior designer might choose to become a project

manager, drafts person, or specifier of products. One might decide to concentrate on restaurants or residential baths or to specialize even further and design only airplane interiors. A professional might choose to become an expert in another subspecialty, such as lighting, fabrics, or historical restorations.

According to the Bureau of Labor Statistics, “designers of all types are nearly four times as likely to be self-employed as are other specialty professionals,” so many interior designers do eventually move on to owning and operating their own design studios. For those who would rather work for someone else, though, there are plenty of opportunities.

Interior designers employed at large design firms often work toward becoming chief designers or department heads. Large architecture firms often have separate interior design departments, home furnishings stores employ interior designers to help customers make decisions, and universities or art schools hire interior design professionals to teach. Those who choose to leave the interior design field often choose another design-related profession and become interior decorators or graphic artists. Some return to school in order to become architects.

Wherever there are people, there is interior design work to be found. However, jobs will be more plentiful near large metropolitan areas that have more clients and larger budgets. The most elite firms in the country are located in New York City, Chicago, Los Angeles, and Atlanta.

Qualifications and Training

A healthy mix of personality traits, natural talents, and acquired skills are required for individuals who seek to become successful interior designers.

At the top of the list, interior designers must be good listeners, analytical thinkers, and problem solvers. In fact, they must be

visionaries—for the frequent times when they are faced with having to interpret the sometimes vague or unrealistic expectations of their clients. Besides having a natural eye for color, texture, fashion, spatial relations, and the intuition to know what a client wants, candidates must also have specialized knowledge of structural engineering and basic architectural principles. This is not a profession for anyone who is disorganized. Interior designers must be detail-oriented individuals and effective multitaskers, as well as creative, outgoing, and disciplined personalities.

Since licensing is not mandatory in all states, membership in a professional association is the most recognized mark of achievement in the profession. This is because such memberships usually require the completion of three or four years of postsecondary education in design, at least two years of practical experience, and completion of the National Council for Interior Design (NCID) qualification exam. Therefore, candidates should take the exam even if the state they work in doesn't require it because it will assure them a high level of credibility and professionalism.

The postsecondary education required is usually a bachelor of arts or bachelor of fine arts degree. Though a liberal arts education—with classes in merchandising, business administration, marketing, and psychology—is a good background, B.F.A. programs are more geared to the profession, as they include art, art history, computer-aided design, textiles, mechanical and architectural drawing, sculpture, and basic engineering. Formal training is also available at two- and three-year professional schools that award certificates or associates degrees in interior design. More than one hundred colleges and universities in the United States offer programs that have been accredited by the Foundation for Interior Design Education Research (FIDER).

Beginning interior designers usually receive on-the-job training for two or three years—working as an assistant or intern. Though salaries at this stage are often minimal or nonexistent,