

# field guide to SIMPLE GRAPHS

Volume 4: Edges & Components

Peter Steinbach

*Albuquerque Technical-Vocational Institute*



DESIGN LAB

Educational Ideas & Materials

Albuquerque

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**Peter Steinbach** is a mathematics educator and former industrial designer, now teaching at the Albuquerque Technical-Vocational Institute. His current interests include graph theory, combinatorial geometry, early mathematics and elementary education, and development of math classroom manipulatives and games.

# Preface

THESE ARE ODDS & ENDS that I generated over the years because they were useful to me. I hope that others can use them too. Chapter 1 classifies graphs by numbers of edges and components, with vertices as the last consideration. Chapter 2 is on probabilities of graphs generated by random edge addition — the button-and-thread game so popular these days among biochemists and others concerned with emergent properties. Chapter 3, Forests, is a glaring omission from the Book of Trees. Still, it is appropriate here for counting edges and components.

The next chapters apply graph theory to partially ordered sets (posets). A Power Set is the poset of subsets of a finite set. A Finite Topology is a special sub-poset of a power set, containing all internal intersections and unions. Indeterminate Sums, Chapter 6, charts the partial order of sums in a collection of positive numbers. And Hasse Diagrams are blank posets.

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*for Kathleen Ann*

## Volume 4: Edges & Components

# Contents

1	Simple Graphs	
	by Number of Edges	1
2	Probabilities of Random Graphs	22
3	Forests	46
4	Power Sets	55
5	Finite Topologies	60
6	Posets of Indeterminate Sums	73
7	Hasse Diagrams	78
8	Tournaments	87