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## Branching

Ed Harris

*University of Northern Iowa*

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### BRANCHING

Ed Harris

Associate Professor of Teaching: Art  
Price Laboratory School  
University of Northern Iowa  
Cedar Falls, Iowa 50613

For many years I have observed and photographed visual patterns. Sometimes I stumble upon them, and other times I search to find them, record them and perhaps make some sense of the relationships I see in the many variations. In the early '70s I began to put these observations together and to classify the many patterns into branching and layering. These two systems I see as primal information from which the human can better understand an underlying structure in the universe. These universal patterns act as building blocks to many diverse and complex forms and phenomena. The images and ideas continue to excite me as an artist-teacher and science student. My slide collection continues to grow and my notes reflect the ever changing relationships I see.

A few years ago I found examples of ideas that seemed to relate to my earlier thoughts. These related ideas first surfaced in computer graphics publications and more recently in current books and periodicals concerned with new directions in science. A particularly exciting direction is presented in the graphic images of Japan's Yoichiro Kawaguchi which simulate the growth patterns of animal and plant forms; these are found in books by Deken and Prueitt. A simple computer program in the Jan. 1985 issue of *Nibble* generates several levels of growth detail (lower right part of the cover illustration). An early primary source is Benoit B. Mandelbrot's book, *Fractals, Form, Chance and Dimension*.

Beyond the obvious visual beauty of the branching examples, lies much basic information for the science teacher. I list reference materials from which the teacher can build an inquiry and discovery base for classroom studies.

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