

ONE DAY PROFESSIONAL DEVELOPMENT WORKSHOP

CHAOS AND FRACTALS

For Mathematics and Other Teachers, ACT Secondary Colleges & High Schools

When: Friday May 18, 9.30am--4.00pm

Where: ANU campus

Morning: Lecture Theatre Floor 1, Sir Roland Wilson Building, McCoy Circuit.

Afternoon: Dept of Mathematics, John Dedman Building, end of Kingsley Street, off Barry Drive.

Cost: \$25, Morning tea, lunch and afternoon tea provided

Organised by the Mathematical Sciences Institute, ANU.



Sierpinski Garden (1997)
Khaldoun Khashanah

Chaos and Fractals: these are now almost household words. Chaotic processes behave in an erratic and essentially non-predictable manner. Fractals exhibit self similarity across a range of scales. These ideas are applied extensively in biology, chemistry, physics, geology, computer science, engineering and financial analysis.

We will examine the underlying concepts, look at some applications and do some computer experiments. Topics to be discussed include chaos in biology, the game of life, the Sierpinski triangle, self similarity, iterated function systems, chaos game, image compression, Julia sets, Mandelbrot set, and non integer dimensions.

Preliminary Reading: See “Professional Development Workshops for Teachers” at www.maths.anu.edu.au/DoM/secondary/ , *An Introduction to Contemporary Mathematics*.

ANU secondary college: Chaos and Fractals is the third of the four half units in the new maths minor course for selected years 11 and 12 students. The texts are *The Heart of Mathematics* by Burger and Starbird and the notes *An Introduction to Contemporary Mathematics* (see the above website).

The teachers involved will discuss their experiences with the course. There will be time for discussion of pedagogy.

We are planning one another such course in 2007 on Geometry & Topology. In 2008 and 2009 we hope to offer two courses a year on current developments and applications for topics taught in college/high school mathematics.

MORE INFORMATION

Registration and Payment, Administrative Information, Parking Vouchers: Katie.Lau@maths.anu.edu.au
(Please register early, we may need to restrict numbers and we would appreciate an early estimate anyway)

Course Information: John.Hutchinson@anu.edu.au