

Transition Year **Chaos**

Fractal

A curve or a surface generated by some repeated process involving successive subdivision.

Benoit Mandelbrot

Exercise:

To input the following program, save, recall and display the fractal picture of Sierpinski's Triangle.

Program:

```
PROGRAM:SIERPINS
:FnOff:ClrDraw
:PlotsOff
:AxesOff
:0→Xmin:1→Xmax
:0→Ymin:1→Ymax
:rand→X:rand→Y
:For(K,1,3000)
:rand→N
:If N≤1/3
:Then
:.5X→X
:.5Y→Y
:End
:If 1/3'N and N≤2/3
:Then
:.5(.5+X) →X
:.5(1+Y) →Y
:End
:If 2/3'N
:Then
:.5(1+X) →X
:.5Y→Y
:End
:Pt-On(X,Y)
:End
:StorePic 6
```

To display the picture of the fractal, use the instruction **RecallPic 6**