THE MATHEMATICAL
ASSOCIATION OF VICTORIA

MATH BITES

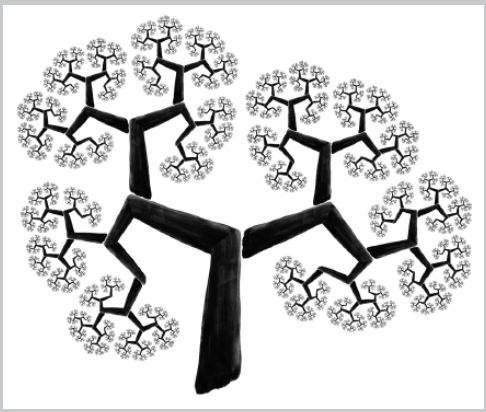
BY CLIFFORD THE DOG

Teachers could photocopy this page to use in class

FRACTAL TREES

In his travels up north the dog saw an Adansonia tree and thought it might be a potential candidate for a real life fractal tree.

Activity
Investigate the topic of fractal trees and see whether this tree or others have the characteristic self-similarity of fractals.



A DIFFERENT LOCAL GEOMETRY?

The Breakaways near Coober Pedy are not just a great location for a fashion shoot, or to mine some opal, but also have some interesting local geometry following water flow down from the escarpment. Is this an example of hyperbolic geometry?

Activity
Investigate the geometry of saddle points and Pringles®. Their shape is a hyperbolic paraboloid and they are constructed using a specially designed machine.

REFERENCES AND FURTHER READING

Fractal trees
http://en.wikipedia.org/wiki/Adansonia
http://en.wikipedia.org/wiki/Fractal
http://fractalfoundation.org/resources/fractivities/fractal-trees/
www.miqel.com/fractals_math_patterns/visual-math-natural-fractals.html
www.cs.berkeley.edu/~sequin/ART/BRIDGES2004/Bridges_04_ART/RobertFathauer/FractalTree.jpg
A different local geometry?
http://en.wikipedia.org/wiki/Hyperbolic_geometry
http://en.wikipedia.org/wiki/Pringles