

Resonance! DIY Jigsaw using aperiodic monotile



The inspiration: The aperiodic tile came to my attention through a news item about the same time as I was exploring Ros Bandt's environmental sound compositions and Latitude 23 Arts announced the 2023 exhibition theme. The jigsaw was a way of responding to the aural and visual elements resonating in my head: an "artist's proof" ensured that the DIY element was feasible, hopefully also resonating with youngsters interested in STEM.

Aperiodic Tile: Solving a 60 year old mathematical problem this "einstein" (from the German "ein stein," or "one stone") shape was recently discovered by David Smith, a retired printing technician from Northern England.

"Most wallpapers or tiles in the real world are periodic, meaning you can identify a small cluster that's just constantly repeated to cover the whole surface. 'The hat,' however, is an aperiodic tile, meaning it can still completely cover a surface without any gaps, but you can never identify any cluster that periodically repeats itself to do so." [Jacopo Prisco, CNN, April 6, 2023*]

The Music: Australian sound artist and musician Ros Bandt pioneered interactive sound installa-

tions, sound sculptures, etc. Also aperiodic, "Stack" was recorded inside the 55m cylindrical stack designed to extract fumes from the Citylink tunnel under Melbourne city. The *"resonant surfaces..., along with ambient sounds of the industrial extractor fans and the builders working, are woven into exciting new sonic art."* [Move Records*, to listen scan QR link above.]

The Lotus pond: The lily pads and other pond materials create natural incidental [aperiodic?] patterns, resonating with both the aperiodic tile and Ros Bandt's music.

The Jigsaw: The cutting pattern is on the reverse side of the A4 print. Use a metal straight edge, a sharp knife (pointed scalpel blade or craft knife) and a cutting board. Carefully cut all the lines in one direction, then rotate the puzzle sheet to cut all the lines in the next direction and continue until all directions have been cut.

Be safety aware! Also be patient, successively cutting the lines in each direction rather trying to cut out individual tiles.