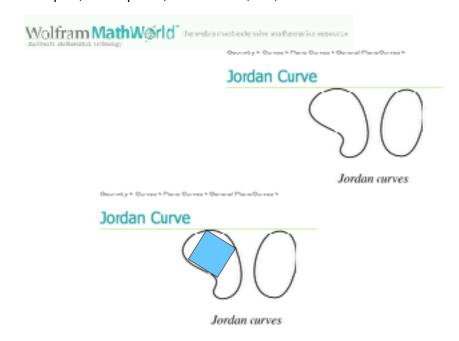Activity February 1: Amoeba covers

You will not need the internet in any way. All information is provided below.

Motivation for your study: In 1911, mathematician Otto Toeplitz wondered if any Jordan Curve can be inscribed by the polygon vertices of a square. A Jordan Curve is a closed loop that can be reshaped, in the plane, into a circle, i.e., it has no intersections while lying in the plane.

We are going to place our closed loop on a grid. That is the sides of the loop follow north-south or east-west grid lines. Consider the number and size of polygons …, It's your journey. An example loop: