The 17 Worlds of Planar Ants


There are exactly 17 of those, no more, no less. It is an addicting challenge to walk around looking at buildings, brick walls, people's ties, fabrics, what's not, and to try figure out which of the 17 is each one.

What would history look like if we were living on Venus? What do the ants on Lou Kauffman's tie think? Which symmetry group appears twice in the pictures below?

4-page handout.

Brian Sanderson's Pattern Recognition Algorithm

Is the maximum rotation order 1, 2, 3, 4 or 6? Is there a mirror (m)? Is there an indecomposable glide reflection (g)? Is there a rotation axis on a mirror? Is there a rotation axis not on a mirror?

Note: Every pattern is identified according to three systems of notation, as in the example below:

442: The Conway-Thurston notation, as used in my tilings page.
p4: The International Union of Crystallography notation.
S442: The Montesinos notation, as in his book Classical Tesselations and Three Manifolds

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