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Applications of symmetry

WINTERSTREETURE FOR GRADES 6-10 AMATHLECTURE FOR GRADES 6-10 Abstract: If you want to count the number of tiles in your floor, you will probably look for a shortcut. For instance, if the room is rectangular with 8 tiles along the north wall and 6 tiles along the west wall, you expect 48 tiles total. This shortcut employs the power of symmetry (and some algebra). In this talk, we'll discuss a powerful counting method that is often referred to as Burnside's Lemma. This method uses symmetry and a bit more algebra. We will illustrate the lemma by counting necklaces strung with colored beads, isomers of a given molecule, crystal structures, chords in a twelve-tone musical scale, Latin squares, and finite automata.

May 18, 2025, Sunday, 1-2pm

UN Seattle campus

Architecture Hall