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Using mathematics to design costumes: hat making.

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Summary: Costuming and design for theatrical productions requires the creative use of mathematics and mathematical processes. To introduce students to the relationship between mathematics and art in costume design, mathematics educators collaborated with a costuming and design professor from the College Conservatory of Music to create this series of activities based on one expressive element – the hat. A central goal of the series of activities was to help students understand the role of mathematics in both the structural and aesthetic components of the design process. Mathematical practices, ratio and proportion, and geometry common core standards are addressed.

Classification: M83 F83 D83

Keywords: mathematical applications; fashion design; student activities; project method; lower secondary; creativity; structural and aesthetic components; fine arts; elementary geometry; proportion; ratio; scaling; similarity; circles; perimeter; reflections; symmetry