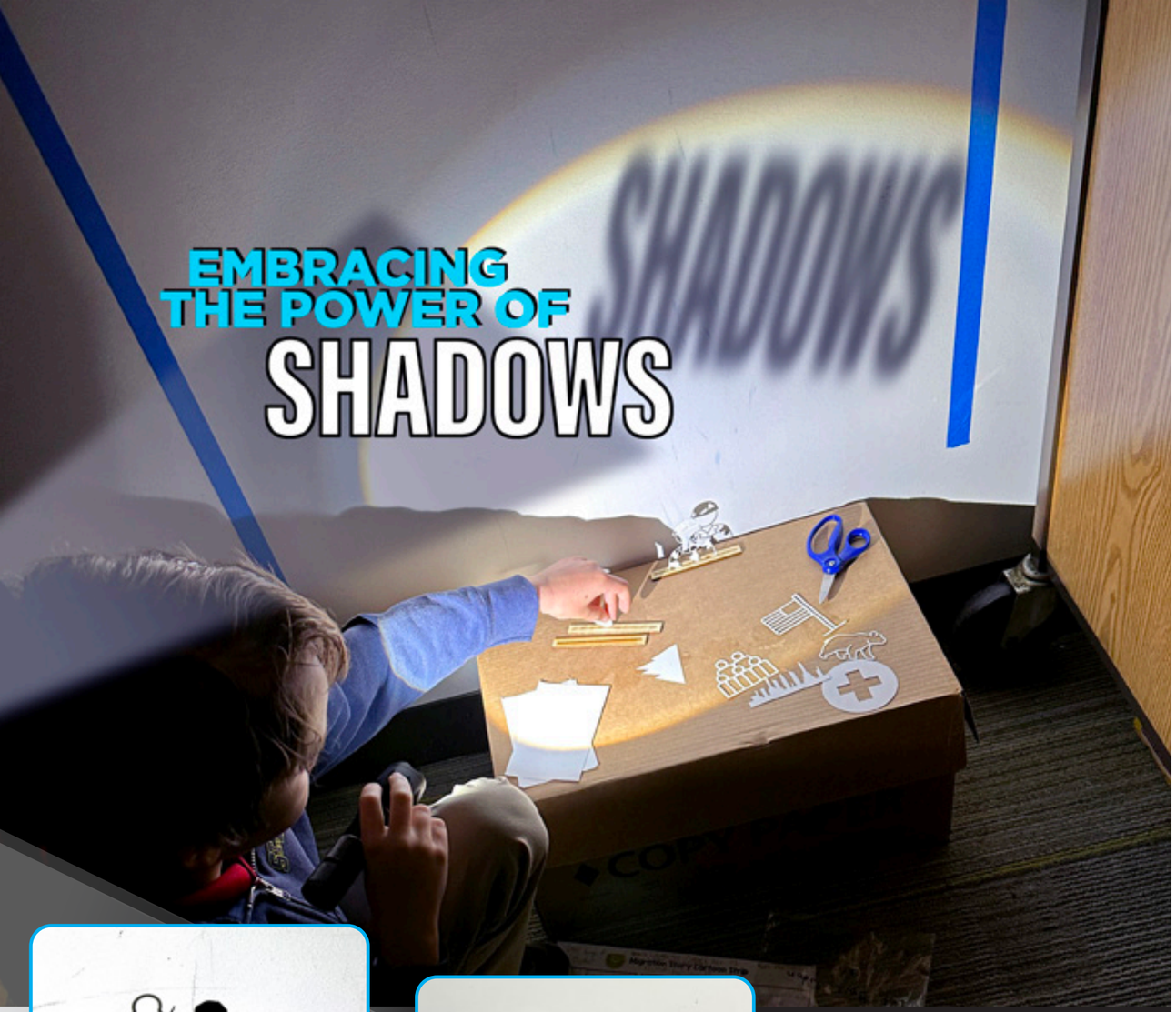
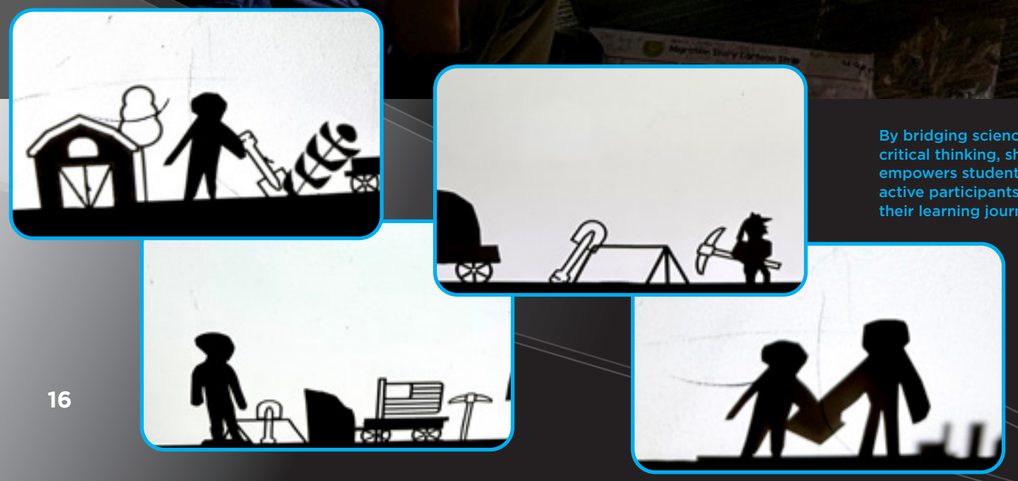




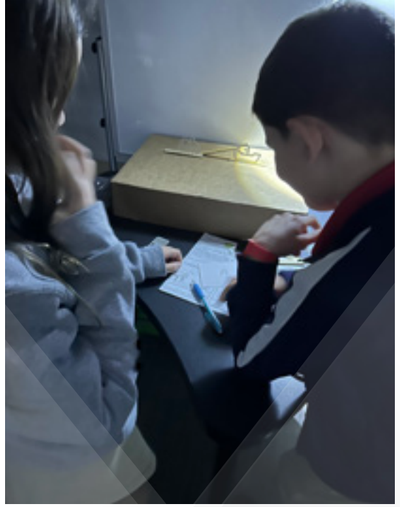
By bridging science, art and critical thinking, shadow casting empowers students to become active participants in their learning journey.

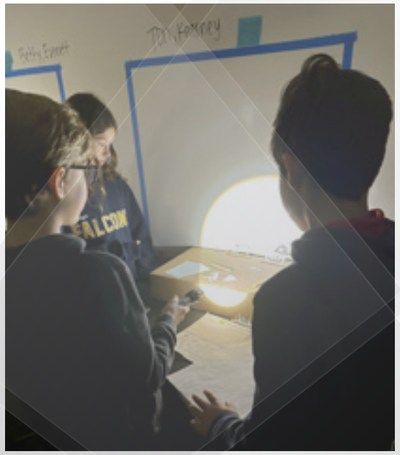
As St. Mary's School looks to the future and explores innovative ways to engage students in learning, one such method is incorporating shadow casting into the curriculum. **Shadow casting, beyond being a playful pastime, holds significant educational potential for students of all ages.** By exploring the interplay of light and shadow, students not only deepen their understanding of scientific concepts, but also sharpen their artistic expression and critical thinking skills. Students in Grade 4 piloted the idea of using shadow casting to illustrate a historical migration story for their Where We are in Place and Time unit summative. Students chose to write their own stories based on various migration stories throughout the unit including Gold Rush, Irish Potato Famine, Vietnam War and Lost Boys of Sudan. Through the casting of shadows, they illustrated the story that highlighted people's reasons for migrating and the effects of migration on people, places, economies and populations.

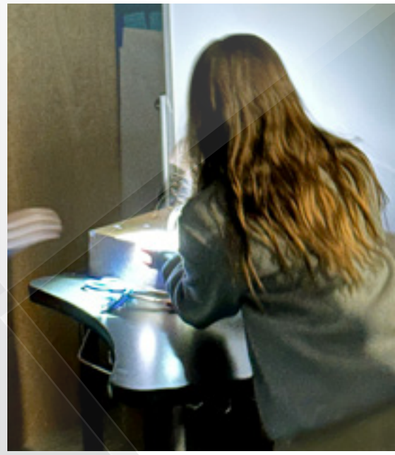
The science behind shadows is quite simple and most commonly taught as part of the science curriculum. Through hands-on experiments and observations that start as early as Preschool, students grasp abstract scientific principles in a tangible and memorable way. For instance, students can investigate how the position of the light source affects the size and direction of shadows, thereby gaining insight into principles of reflection and refraction. Beyond its scientific underpinnings, shadow casting nurtures students' creativity and artistic expressions. By manipulating light and objects, students create captivating shadow scenes, exploring themes from literature or history, illustrating stories, summarizing events or showcasing their own imagination. This interdisciplinary approach not only reinforces academic concepts, but also encourages students to think outside the box. Through collaborative work students develop communication skills and learn the value of teamwork fostering a sense of ownership and pride in their creations.

Shadow casting presents students with puzzles to solve and challenges to overcome, igniting creativity and honing their problem-solving skills. During the Migration unit, students experimented with different angles and sources of light as they created their illustrations. They learned to anticipate outcomes, analyze results and adjust their approaches accordingly. This process of inquiry-based learning empowers students to ask questions, test hypotheses and draw evidence-based conclusions, nurturing a mindset of inquiry and critical thinking that transcends the classroom.

The versatility of shadow casting lends itself to seamless integration across various subjects and grade levels. In mathematics, students can explore geometric shapes and spatial relationships by studying the shadows cast by different objects. In language arts students can write narratives inspired by shadow scenes or explore the symbolism of light and shadow in literature. In history or language, students can create plays depicting historical events or cultural traditions, fostering empathy and understanding.







Whether incorporating shadow casting into a Grade 4 Migration unit, weaving theatrical narratives through shadow puppetry or crafting shadow art installations, shadow casting is one more tool students can add to their learning toolkit. By bridging science, art and critical thinking, shadow casting empowers students to become active participants in their learning journey, fostering creativity, curiosity and collaboration. As educators at St. Mary's School, we continue to cultivate unique learning opportunities like the power of shadows to inspire young minds and foster a lifelong love of learning.

Integrating Shadow Casting into Grade 4 Curriculum

by Adrienne Bononi
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