

Illuminating Rural STEM Education Through Dark Sky Community Engagement

Moffat PK-12 School, Moffat Consolidated School District #2

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The Moffat PK-12 school is in a unique geographic location within a recognized Dark Sky area. This rural school district serves a geographically isolated community where students often have limited exposure to hands-on STEM experiences and career pathways. By celebrating the area's dark sky resources, the practice fostered location-based pride while connecting students to learning opportunities and partnerships that demonstrate the value of their rural environment.

The planning and implementation involved teachers, school administration, and new community partners. SLV Go, a local outdoor recreation stewardship organization, contributed expertise on dark sky pollution and conservation careers. Nomad Dome provided interactive astronomy technology and educational programming, while local astronomers offered scientific expertise. Leveraging community partnerships kept the total expenditure of the event under \$300.

The practice centered on a winter solstice community STEM event featuring multiple teacher-hosted activity centers. Nomad Dome's interactive sky mapping technology significantly expanded participation capacity and provided weather-resistant alternatives when it rained. Moffat PK-12 provided s'mores stations, propane-controlled fire pits, outdoor heaters, hot cocoa, and popcorn. The school's inflatable movie screen created a documentary viewing area for astronomy-themed content with bean bag seating. The Colorado State Office of Extension provided additional expertise and support. This event exposed students to careers in environmental science and astronomy while developing environmental stewardship awareness. It brought families together for shared learning and created community pride in the area's unique scientific resources.



Moffatt staff evaluated the practice through attendance, community feedback, and partnership sustainability. Weather challenges highlighted the importance of backup planning. Future evaluation will include pre- and post-surveys measuring student interest in STEM careers and environmental stewardship awareness. The primary challenge was coordinating multiple new partnerships while managing weather contingencies.

Rural schools should leverage unique geographic advantages and prioritize partnership development to create distinctive STEM experiences. Start planning early to establish meaningful community connections and always include weather contingencies. As one participating teacher noted, "The event showed our students that living in a rural area isn't a limitation—it's an incredible scientific resource that opens doors to amazing learning opportunities they can't find anywhere else."