Title of Leadership Project

Building Vertical Coherence in Science Instruction

Option Selected and Rationale

For this leadership project, I selected the option focused on supporting STEM integration through the sharing and modeling of instructional practices. This project was chosen in response to the adoption of the STEELS standards, which require a shared understanding of science practices and vertical alignment across grade levels. The initial professional development will focus on modeling as an instructional practice and structured observation routines using the See-Think-Wonder framework. Beginning with these core practices provides a common instructional foundation and supports coherent inquiry-based science instruction across K-12.

Proposed Audience

The proposed audience includes elementary, middle school, and high school science teachers within the district. This professional development will serve teachers responsible for K-12 science instruction, with a specific emphasis on strengthening connections between elementary, middle, and high school expectations for scientific practices. While students are not directly involved in the PD, the participating educators collectively serve a broad and diverse student population across multiple grade bands and science disciplines.

STEM Integration

This project demonstrates STEM integration by centering on inquiry-based science practices aligned with STEELS, particularly the development and use of models and student observation of phenomena. Teachers will engage with modeling activities grounded in real-world scientific contexts, supported by NASA STEM resources such as Earth and space science phenomena and data visualizations. These resources promote scientific reasoning, evidence-based discussion, and interdisciplinary thinking.

Expected Outcomes for Educators

By the end of the professional development, educators are expected to demonstrate increased understanding of how modeling functions as an instructional practice within STEELS-aligned science instruction. Teachers will develop greater confidence in using models and the See-Think-Wonder routine to support student observation, reasoning, and explanation. Additionally, participants will gain a clearer understanding of how these practices progress vertically across grade levels, supporting more coherent instructional planning and collaboration.

Follow-Up and Sustainability

Follow-up will include continued vertical team collaboration through “buddy” partnerships, access to shared instructional resources, and reflection tools to support classroom implementation. Future professional learning will expand vertical team time to examine additional instructional practices and strengthen content continuity across the K-12 science curriculum. Teacher feedback and post-PD survey data will inform ongoing support.