

**2025 CURRICULUM
ADOPTION PROPOSAL**

BACKGROUND OF PROGRAMMING IN BHM SCHOOLS

- Summary of last adoption request for historical perspective
 - The Minnesota Comprehensive Assessments (MCAs) in science first appear in 5th grade. That assessment includes standards/benchmarks taught in grades 3-5.
 - The current K-4 Science program is FOSS. FOSS has been used for over 20 years as a core science program in BHM. In 2012-2013, some FOSS kits were updated to meet the 2009 MN Science Standards. Other kits are still from the adoption prior to 2012-2013.
 - Mystery Science was adopted in 2023 for 5th grade science because their resource was no longer available.

- Rationale for need
 - FOSS kits no longer meet the needs of our elementary classrooms.
 - The Minnesota State Science Standards have changed to emphasize a more hands-on approach and for students to show their understanding of phenomena. It combines science and engineering practices.
 - Current FOSS kits are from 10 to 20+ years old.

PROGRAM STANDARDS

- MN State Science Standards are based on Next Generation Science Standards (NGSS), but because of MN State Statutes our standards don't match the NGSS.
- The MN State Science Standards revision began in 2018 when the MN Science Standards Committee began meeting. In 2019, the commissioner released an approved version of the science standards. The standards were officially adopted in 2021. Full implementation of the 2019 MN Science Standards is required in 2024-2025. In the Spring of 2025, a new version of the MCAs will be released called the MCA-IVs. The emphasis will not be on the recall of facts but on the application of knowledge and skills along with strategic thinking.
- Examples of standards
 - 0L.2.1.1.3 Record and use observations to describe patterns of what plants and animals (including humans) need to survive. (Kindergarten)
 - 1L.3.1.1.1 Develop a simple model based on evidence to represent how plants or animals use their external parts to help them survive, grow, and meet their needs.
 - 2E.2.1.1.2 Analyze data from tests of objects designed to reduce the impacts of weather-related hazards and compare the strengths and weaknesses of how each performs.

- 3E.4.2.2.1 Gather information and communicate how Minnesota American Indian Tribes and communities and other cultures use patterns in stars to make predictions and plans.
- 4E.2.2.1.1 Interpret charts, maps, and/or graphs of the amounts of salt water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth.
- With the adoption of Mystery Science, the K-4 teachers and students will have access to lessons and units that will meet the MN State Science Standards. Because Mystery Science is a national company, some lessons that meet the MN specific standards are in a variety of grade levels and Mystery Science provides access to teachers at no additional cost.

PROGRAM VISION STATEMENT

Created 5/1/2020: The science program at Buffalo-Hanover-Montrose schools promotes curiosity, wonder, and intellectual engagement as students explore the world around them. The program focuses on the knowing and doing of science and works to relate concepts to everyday life. Teachers and students are critical consumers of scientific information. Students will:

- actively engage in science and engineering practices to deepen their understanding of core scientific ideas.
- have a variety of opportunities to think like a scientist and design like an engineer.
- conduct research, develop models to show their understanding, and collaborate with others.

SUMMARY OF PROCESS FOR REVIEW OF INSTRUCTIONAL RESOURCES

The district's Continuous Improvement Process (CIP) requires a comprehensive review of needs, educational research, and potential materials prior to making a recommendation in the Curriculum Adoption Proposal. During the CIP phases of RESEARCH and PILOT, the K-5 Science CIP Team and K-4 pilot teachers have engaged in the following activities:

- Research
 - Read various articles related to NGSS standards
 - Viewed videos/webinars based on phenomenon focused instruction
- Select of Materials
 - Screening of potential materials
 - Started in 2021-2022, with reviewing a variety of other programs with an initial screening along with units that were available for online
 - Team of 5th grade teachers piloted and recommended Mystery Science during the 2022-2023 school year.
 - A team of K-4 teachers reviewed the process that 5th grade had completed before deciding to pilot Mystery Science in the Fall of 2024
 - K-4 Pilot of Mystery Science
 - There were 8 teachers who participated in the pilot representing 6 different schools.
 - Each teacher agreed to pilot at least 1 unit from Mystery Science. Some teachers were able to try out more units.
 - The 8 teachers all started with Mystery Science in the Fall of 2024. Mystery Science is completely online so T&L department put together and printed guides

for the teachers. Teachers participated in a professional development session created by Mystery Science.

- In December 2024, the team met to make their decision on whether to move forward with recommending Mystery Science to the School Board or to pilot another program. The team's decision was to move forward with Mystery Science.

RECOMMENDATIONS

- What: Adopt **Mystery Science** for all K-4 classrooms
- Benefits of the adoption
 - Mystery Science lends itself well to incorporating **AVID** strategies, like writing, **inquiry based learning**, **collaboration**, **organization** of materials and ideas.
 - Every lesson has **extension opportunities** that are reading and math based.
 - Mystery Science is steadily **evolving**, they are **improving and enhancing** in real time; because it is web based all updates are provided at no additional cost
 - Science content of each lesson is “**taught**” by an **expert on the topic** via video, which ensures that students in all K-4 classrooms are getting the same information
 - There is **diversity in the online experts’ backgrounds**
 - There are a variety of instructional activities: **hands-on** experiments, demonstrations, games and opportunities to write about science
 - Opportunities for **trial and error** and **problem solving** with others
 - The **4 C’s** are present - Collaboration, Communication, Creativity, Critical Thinking
 - The **5 E’s** are present - Engage, Explore, Explain, Elaborate, Evaluate
 - Students expressed **excitement** during science time
 - Mystery Science **aligns with MN state standards**.
 - **Curriculum is easy for teachers to access and manipulate**, which allows for success in teaching students
 - The way Mystery Science explains science phenomena is **relevant** to students today.
 - The required **materials** for experiments are **accessible and are not specialized**.
 - There are both **formative and summative assessments** within each unit.
- Potential Challenges:
 - Mystery Science is web-based and will update their lessons midway through the year. This may be a challenge if teachers are not adequately prepared.
 - T&L will be ordering all of the materials and organizing them for/with teachers to ensure access to supplies. Reordering of consumables will happen at the building level, so a reorder list will need to be created. The kits sold by Mystery Science do not support the needs of K-4 science.
 - Solely web-based means that if there is an internet connection issue, lessons might be delayed or be unable to occur at that time. Teachers can download lessons for offline use.
 - Paper use will increase, so the team will explore the possibility of creating a booklet that can be sent to printshop to reduce cost. Some printed materials will be copied onto cardstock to be used for multiple years.

FINANCIAL IMPLICATIONS

[K-12 Science Spreadsheet for requests](#) (Update for K-4 Science)

Mystery Science (1 year license for 6 elementary sites and all grades) \$8,370

Materials Consumable and nonconsumable \$32,400

EVALUATION

Evaluation of the curriculum adoption will be monitored in several ways. Some of the anticipated desired outcomes include:

- More student engagement compared to recent science curriculum
- Increased hands on exploration of science based activities
- When the MCA's change over to MCA-IV in 2025, an eventual increase in student achievement would be a desired outcome. MCA-IVs will be a different type of test so scores cannot be compared to MCA-IIIs.
- A more common/consistent experience for students across elementary classrooms.

Data that will be collected:

- Teacher survey at the end of the year to gather feedback about the units and lessons along with how students responded to the program.
- Scores on summative assessments.

NEXT STEPS

- Purchase Timeline
 - In 2023-2024, an 8-year contract was established with Mystery Science for guaranteed pricing at \$8,370 annually. In 6 years, a new contract will need to be established or extended.
 - Supplies will be ordered starting in July.
 - Printshop will have pages loaded so teachers can begin ordering in August.
- Preparation for Use
 - Ordering, sorting, and labeling supplies for each kit. There will be approximately 120-150 kits created. (4 kits per grade, 5 grades, and 6 elementary building with some building needed duplicate kits)
 - Creating a binder for teachers with black line masters and teacher background/guide
 - The modified teacher guides will need to include the following:
 - Ideas on increasing rigor in vocabulary terms connected to each unit
 - Modifications needed for lessons (balloons or alternative supplies)
- Professional Development Needs
 - Mystery Science provides a 30 minute teacher training presentation.
 - A longer training and planning session will be created to provide teachers with an overview of each unit and the shifts in MN State Standards along with time to collaborate.