School Board Meeting: **June 27, 2022**

Subject: 6th Grade Science Curriculum Adoption Proposal (CAP) Report

Presenter: **Pam Miller, Director Teaching and Learning**

SUGGESTED SCHOOL BOARD ACTION:

Recommend approval.

DESCRIPTION:

The 6th grade science teachers have engaged in the district Continuous Improvement Process (CIP) review tasks over the past two years in the RESEARCH and PILOT phases. They have been active in activities that have included:

- review of state standards
- discussions of preferred resources
- consensus-building to reach recommendation decisions

These tasks have now culminated into the Curriculum Adoption Proposal (CAP) report being presented to you for review at this time. The recommendations included here provide excellent student opportunities that align with the goals of the state standards, as well as the local identified improvement process goals for each department.

This review process has allowed an opportunity for our 6th grade science teachers to reflect upon the future learning experiences desired for BHM students. Upon completion of the review process, the team is bringing forth recommendations for consideration within their CAP report. Preliminary budget figures are listed below.

Program	Budget Request
BCMS - 6th Grade Science	$ 28,865

This report was presented to the Community Teaching & Learning Council on Friday, June 3rd.

BHM SCHOOLS
Buffalo Hanover Montrose

6th Grade Earth Science

2022 CURRICULUM ADOPTION PROPOSAL

BACKGROUND OF PROGRAMMING IN BHM SCHOOLS

The science standards revision at the state level brought a significant change in the benchmarks at the sixth grade level. In previous standards (adopted in 2010), sixth grade science was primarily focused on Physical Science - with topics such as Matter, Forces & Energy, Waves, Science & Technology. The new standards have shifted physical science content to eighth grade and have benchmarks for the sixth grade level focused on Earth & Space Science - with topics such as The Solar System, Geologic History of Earth, Earth's Materials, and Influences of Weather & Climate.

In addition to the content changing, the new standards suggest a 3-Dimensional approach to science. The three dimensions that are integrated throughout the standards and benchmarks are Science & Engineering Practices, Disciplinary Core Ideas, and Crosscutting Concepts.

The shift in content and approach requires a change in instructional materials. The previous resource for sixth grade science was Pearson Interactive Science.

PROGRAM STANDARDS

From MDE Science Standards:
"The 2019 Minnesota K-12 Academic Standards in Science (Standards) set the expectations for achievement in science for grades K-12 students in Minnesota. The Standards are grounded in the belief that all students can and should be scientifically literate. Scientific literacy enables people to use scientific principles and processes to make personal decisions and to participate in discussions of scientific issues that affect society (NRC, 1996). Graduates should be prepared for career and college opportunities.

The Standards describe a connected body of science and engineering knowledge acquired through active participation in science experiences. These experiences include hands-on laboratory activities rooted in science and engineering practices. The Standards are based on current science education found in A Framework for K-12 Science Education (Framework) (NRC, 2012), which emphasize the inclusion within science standards, curriculum, and instruction of three dimensions: Scientific and Engineering Practices, Crosscutting Concepts, and Disciplinary Core Ideas. The Framework is available as a free download at www.nap.edu."

6th Grade Science Standards Spreadsheet (tabs for new and for previous standards)

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 6th grade science team engaged in the following activities:

- Workshops and conferences on the new science standards
- Meetings to refine 6th grade science standards, unit outlines, and possible resources
- Review of Materials
    - Overview of available resources
    - Screening of potential materials
    - Pilot units with resources from:
        - **Amplify Science** - resources were strong in reading/writing and scientific argumentation, but lacked hands-on approach and engaging activities. Teacher-directed slide presentations felt too scripted, and the program was very expensive.
        - **HMH Science Dimensions** - lesson structure was well-designed and made connections to anchoring phenomenon, but also lacked hands-on lab experiences and engaging activities. The assessments were not well written and required a lot of modifications.
        - **STEMscopes Science** - engaging hands-on lab experiences and resources, opportunities for reading/writing and scientific argumentation, cost-effective resources that are well designed to meet the needs of teachers and students.

RECOMMENDATIONS

The team recommends the purchase of STEMscopes resources and lab materials to support students in learning the standards and benchmarks of 6th grade science. STEMscopes combines digital resources with hands-on experiences to engage students in their understanding of Earth and Space Science.

FINANCIAL IMPLICATIONS

The total request for the necessary 6th grade science resources is $28,865. The proposal includes digital and print access to content, classroom and student materials for hands-on lab experiments. The digital access is an 8-year license for teachers and students. Details about the purchases can be found on this spreadsheet of requests.

NEXT STEPS

Once approved, the resources will be purchased and teachers will begin preparing for implementation. A full day of planning and preparation will take place in August and the implementation of resources will be supported through the district's Continuous Improvement Process.