Howard Lake-Waverly-Winsted

Independent School District #2687

2019-2021

Science Curriculum Review Report

Committee Members:

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Science Mission Statement

At HLWW Schools students will understand scientific concepts and how science impacts their lives and world around them.

Science Goals:

High School Science Goals:

- Understand scientific research methods and develop the reasoning and critical thinking skills necessary to apply scientific research.
- Become literate in reading scientific text.
- Communicate scientific findings in the language that is accepted by the scientific community.
- Understand scientific concepts through a variety of methods including: lab and field studies, studying scientific literature, and discussing science cooperatively with others.
- Realize that scientific problem solving includes the use of both analytical and mathematical processes.
- Gain experience using applicable technology as an integral part of scientific discovery.

Middle School Science Goals:

- Recognize that changing technology enhances or helps define Science.
- Be effective communicators in the language of Science.
- Evaluate how Engineering designs affect our daily lives and also the natural world.
- Understand how our current practices will impact the future of our global society.

Elementary Science Goals:

- We will learn what science is.
- We will observe, ask questions, problem solve, understand, and explain the happenings in the world around us.
- We will work with our classmates in an engaging, hands-on environment.
- We will see how science connects to reading, writing, and math.

Next Generation Science Standards

https://www.nextgenscience.org/

The State of Minnesota expects for all school districts to implement the Next Generation Science Standards fully by the 2024-2025 school year. Therefore, our current curriculum needs to be replaced to align with the upcoming change in standards. The Next Generation Science Standards (NGSS) provide an important opportunity to improve not only science education but also student achievement. Based on the Framework for K–12 Science Education, the NGSS are intended to reflect a new vision for American science education. The NGSS is focused on a Phenomena-based inquiry into science which will cause conceptual shifts in our teaching of the content. NGSS will change the following in our science curriculum:

1. K-12 Science Education Should Reflect the Interconnected Nature of Science as it is Practiced and Experienced in the Real World.
    a. The vision represented in the Framework is new in that students must be engaged at the nexus of the three dimensions:
        i. Science and Engineering Practices,
        ii. Crosscutting Concepts, and
        iii. Disciplinary Core Ideas.
    b. It becomes about the integration of knowledge of science and learning the practices to engage in inquiry and engineering design.
2. The Next Generation Science Standards are student performance expectations – NOT curriculum.
    a. Performance expectations simply clarify the expectations of what students will know and be able to do by the end of the grade or grade band.
3. The Science Concepts in the NGSS Build Coherently from K–12.
4. The NGSS Focus on Deeper Understanding of Content as well as Application of Content.
5. Science and Engineering are Integrated in the NGSS, from K–12.
6. The NGSS are designed to prepare students for college, career, and citizenship.
7. The NGSS and Common Core State Standards (English Language Arts and Mathematics) are Aligned.

Due to the change in the standards, there is thus a change in the order in which content is presented. This in turn helps prepare our students for the MCA IV to be implemented during the Spring of 2025.

	20-21	21-22	22-23	23-24	24-25
K-5	Current	Current?	Current?	Current?	Full Implementation
6	**Current 8th: Earth Science**	**New Earth Science**	**New Earth Science**	Full Implementation	Full Implementation
7	**Current 7th: Life**	**New 7 Life**	**New Life**	**New Life**	Full Implementation
8	**Current 8th: Earth Science**	**New Physical Sci**	**New 8 Physical Sci**	**New Physical Sci**	Full Implementation
9	Current 9th: Physical Sci	**New Earth Science**	**New Earth Science**	**New Earth Science**	Full Implementation
10-12	Current	Current	**Current**	Full Implementation	Full Implementation

Committee Recommendations:

1. **K-4 Recommendation**
    a. **Adopt Mystery Science for the 8 year cycle.**
        i. It aligns with the NGSS and helps teachers unpack NGSS to meet performance expectations.
        ii. https://mysteryscience.com/anchor
        iii. Provides hands on and digital experiences for students.
        iv. Fits to HLWW's abilities to provide science to students.
        v. "Open and Go Lessons" for teachers and students.
    b. www.mysteryscience.com

Cost:

1. **$18,384 (Curriculum Access) for 8 years**
2. **$8,295 (Consumable Packs grades K-4 for year one)**
3. **$7000 (Set aside for consumable purchases over next 7 years)**

Total: $33,679

2. **Middle School Recommendation**
    a. **Adopt Amplify Science for 8 year Cycle**
        i. Includes yearly online subscriptions for students and staff.
        ii. Aligns with NGSS.
        iii. High Quality curriculum that contains coherent learning units with logical investigations
        iv. Straight forward for teachers to use.
        v. **www.amplify.com**

Cost for 8 year Cycle: **$44,588**

Includes: Access to online content, 1 year of consumable materials, and 1 full day of PD.

3. **High School Recommendations:**
    a. **Adopt Inspire Science for 8 year Cycle**
        i. Includes online subscriptions for students and teaching staff
        ii. Aligns with NGSS and provides additional lab supports
        iii. Coherent vertical process for students to understand as they move through the classes.
        iv. Fits to our implementation plans.
        v. McGraw-Hill Inspire

Cost for McGraw-Hill Curriculum (ES, Bio, Chem, Phy) 8 year cycle: **$35,654**

Total Cost: **$113,921**