



Mason City Schools

Portrait of a Scientifically Literate Graduate

The desired outcome of the Mason City Schools K-12 science educational learning experience is to develop scientifically literate¹ learners that continually seek to understand the world through a lens of scientific reasoning and logic, approach problems that reflect diversity, equity, inclusion, and justice principles, empathy, and critical thinking, are equipped to adjust and adapt to ever-changing world contexts, and positively contribute to society now and in the future.

In order to support this desired outcome, all Mason City Schools learners will engage in learning experiences throughout their K-12 science educational journey that includes the following:

- Opportunities for students to practice making informed and ethical decisions through critical thinking and analysis of observational and experimental data, scientific and technical literature, and expression of scientific claims and evidence through writing and speaking.
- Opportunities for students to explore curiosities based on observations of their environment(s), which includes noticing natural phenomena, patterns, and irregularities that spur the formation of testable questions and problems to explore further as practicing scientists.
- Opportunities to engage in problem-solving as scientists by:
 - Identifying problems that are relevant in the world today,
 - Engaging in active observation and research that support the development of scientific reasoning and logic skills,
 - Regularly collaborating with peers,
 - Utilizing the experimental design process to test hypotheses and/or claims,
 - Valuing the notion that learning from failure is an important component of the scientific learning process,
 - Including effective analysis, communication, and representation of data,
 - Engaging in regular opportunities for communication and publishing of results to encourage further iteration and learning from and with peers.
- Opportunities to learn about, from, and with diverse scientists from our global and local community, that are relevant contributors in today's society and that provide students the opportunity to see practicing scientists that represent them in gender, race, background, etc.
- Opportunities to learn about the diverse scientists and scientific accomplishments that have led to some of the greatest advances in science and technology from a historical lens and as a way to understand the practice of science is reliant on the collaboration with other scientists.

¹ Scientific literacy is defined as “the knowledge and understanding of scientific concepts and processes required for personal decision making, participation in civic and cultural affairs, and economic productivity” (Lombrozo, 2015)