

Woodland School District Plan for Mathematics Education

Vision Statement: Empowering *all* students to thrive in a complex world.

Mission Statement: All Woodland students engage every day in rigorous mathematics centered on problem solving and justification within powerful learning communities.

In order to achieve this vision, all learners (students, teachers, support staff, building and district administrators, parents, and school board members) should have experiences that enable them to:

- Engage with challenging tasks that involve active meaning making and support meaningful learning;
- Connect new learning with prior knowledge and informal reasoning and, in the process, address preconceptions and misconceptions;
- Acquire conceptual knowledge as well as procedural knowledge, so that they can meaningfully organize their knowledge, acquire new knowledge, and transfer and apply knowledge to new situations;
- Construct knowledge socially, through discourse, activity, and interaction related to meaningful problems;
- Receive descriptive and timely feedback so that they can reflect on and revise their work, thinking, and understandings; and
- Develop metacognitive awareness of themselves as learners, thinkers, and problem solvers, and learn to monitor their learning and performance.

This vision is predicated on the following essential elements:

Access and Equity

All students will have access to a high-quality mathematics learning experiences, standards, effective teaching and learning, high expectations, and the support and resources needed to maximize their learning potential.

All learners should have experiences that enable them to:

- Understand the implications of poverty and adverse childhood experiences that influence learning and respond accordingly
- Attend to the social norms, cultures, and language needs of each student
- Believe that all students are able to think critically and mathematically
- Value and recognize effective mathematics behaviors in order to make decisions that support student learning

In addition, our system must:

- Attend to the needs of all subgroups, particularly those with more substantive needs
- Guarantee that all students are present during core instruction as well as provide extended learning opportunities for those who need them
- Ensure the use of high-quality curricular resources and effective teaching that address the mathematical practices and content present in the standards in every classroom
- Regularly monitor for mathematical behaviors to inform us about each student's strengths and next steps
- Provide all students with regular opportunities to demonstrate, self-evaluate, and receive productive feedback about their understanding of mathematical content and practices

Curriculum (the means and materials with which students interact for the purpose of achieving identified educational outcomes)

All students will have access to a curriculum that develops important mathematics along coherent learning progressions and develops connections among areas of mathematical study and between mathematics and the real world.

All learners should have experiences that enable them to:

- Know the essential understandings of the mathematical content and understand the intersection of the mathematical content with the mathematical practices enumerated in the standards
- Continually deepen their understanding of the mathematics within their own grade level and across the system
- Define mathematics as a dynamic practice that is ever changing
- Continually deepen mathematical content knowledge of mathematics trajectory

In addition, our system must:

- Provide adequate time for meaningful learning, differentiation, and interventions
- Stay current on open-source curricula and technological advancements in digital learning tools
- Evaluate systemic structures that ensure a coherent program that lays a strong mathematical foundation

Assessment

Woodland School District will ensure that multiple forms of assessments are used as supportive structures to inform feedback to students, instructional decisions, and program improvement.

All learners should have experiences that enable them to:

- Understand that the primary purpose of assessment is to inform and improve the teaching and learning of mathematics, and to do so, assessment must be an ongoing process embedded in instruction
- Use assessment to
 - monitor students' progress to promote student learning,
 - make instructional decisions to modify instruction to facilitate student learning,
 - evaluate student achievement to summarize and report students' demonstrated understanding at a particular moment in time, and
 - evaluate programs to make decisions about instructional programs.
 - self-assess

In addition, our system must:

- Use technology to support efficient use of data
- Develop a comprehensive assessment system that addresses the four purposes for assessment

Tools and Technology

All students will have access to a mathematics program that integrates the use of mathematical tools and technology as essential resources to help students learn and make sense of mathematical ideas, reason mathematically, and communicate their mathematical thinking.

All learners should have experiences that enable them to:

- Understand the power that tools and technology in mathematics classrooms provide by enabling students to
 - make sense, reason, problem solve, and communicate
 - access mathematical ideas using a variety of representations
 - visualize mathematical concepts as they solve problems and reason mathematically
 - investigate mathematical ideas and problems that might otherwise be too difficult or time-consuming to explore
 - discern relative usefulness of a range of tools in particular contexts
- Perceive tools and technology as “thinker tools” rather than only “answer-getting devices.”
- Determine and support only appropriate use of tools and technology (e.g. limiting use of tools and technology when developing fluency may be appropriate)

In addition, our system must:

- Understand digital learning
- Provide adequate access to tools and technology as appropriate
- Learn about how evolving technologies support a powerful mathematics curriculum

Professionalism

All students will have access to educators who hold themselves and their colleagues accountable for the mathematical success of every student and for personal and collective professional growth toward effective teaching and learning of mathematics.

All teachers, staff, and administrators should have experiences that enable them to:

- Use collaboration time effectively to support their own growth and for that of their learners
- Take responsibility in their own on-going, job-embedded professional development
- Ensure that professional development for mathematics teachers and support staff promotes their growth in the following areas:
 - their mathematical knowledge and their capacity to use it in practice
 - their capacity to notice, analyze, and respond to students' thinking
 - their beliefs and dispositions that foster continued learning
 - their collegial relationships and learning structures that can support and sustain their learning

In addition, our system must:

- Invest substantial time in professional learning over a sustained period
- Systemically support learning for all adults in our district
- Provide opportunities for adults to participate in active learning
- Provide opportunities for math teachers to study the mathematics underlying the curriculum they teach

*We define “learners” to be students, teachers, support staff, building and district administrators, parents, and school board members.