AASD PreK-12 Math Guiding Principles

Guiding Principles for Instruction in Mathematics

With respect to *Student Learning*, we believe all students should...

- ❏ strategically use a variety of mathematical resources and tools.
- ❏ engage in discourse to share mathematical thinking. Multiple solution strategies are to be encouraged and discussed. Students should be able to justify their thinking and reasoning with others.
- ❏ engage and collaborate in meaningful and challenging tasks.
- ❏ have the opportunity to develop both conceptual understanding and procedural fluency.
- ❏ be provided opportunities to make connections between mathematical concepts, relating not only within mathematics, but to other disciplines, the real world, and their daily lives.
- ❏ show evidence of developing proficiency within the *Standards for Mathematical Practice.*
- ❏ use the vocabulary of mathematics to communicate mathematical thinking and solutions.
- ❏ have the opportunity to receive universal instruction at their current grade level. Additional supports should also be provided for struggling and exceptional learners.

With respect to *Instructional Practices*, we believe in...

- ❏ employing a variety of instructional strategies to challenge and progressively deepen students' mathematical understanding.
- ❏ using student interests to choose meaningful mathematical contexts for problems.
- ❏ using formative assessments (both written and oral) to make decisions for differentiating instruction to support and challenge each student (i.e., listening to students' mathematical discussions, assessing written work, and planning further instruction based on what is seen and heard).
- ❏ the value of multiple solution paths, representations, explanations, and justifications.

- ❏ the value of intentionally creating classroom discourse that allows students to share mathematical thinking and to critique each others' reasoning.
- ❏ scaffolding student learning to build deeper understanding.
- ❏ engaging students in rich tasks and using purposeful questioning to identify and develop student knowledge and understanding.
- ❏ identifying and learning from misconceptions through meaningful discussions and activities.
- ❏ structuring math lessons that focus on specific learning targets.
- ❏ using representational models to enhance depth of understanding and to reinforce the connections between mathematics and students' lives.
- ❏ supporting productive struggle in learning mathematics.
- ❏ developing students' sense-making, growing students' mindsets, and improving mental math skills.
- ❏ supplementing Board-approved materials with resources and instructional practices that best meet the needs of students. The art of teaching math extends far beyond following a scripted resource.

With respect to Curriculum and Assessment, we believe in...

- ❏ organizing curriculum within and across grade levels and disciplines.
- ❏ measuring mathematical proficiency by using a variety of purposeful formative assessments before and during instruction. Purposeful summative assessments are to be used after instruction has been completed.
- ❏ developing interventions and enrichment based on multiple assessment opportunities.
- ❏ selecting or designing tasks and assessments that require students to explain, represent, and justify mathematical understandings and skills that provide information about the depth of student understanding.
- ❏ assessing student learning through a variety of response formats that include writing, discussions, symbolic representations, sketches, models, tables, and graphs.

We believe *Professional Development* should...

- ❏ be based on teachers having an obligation to participate in and shape the ongoing professional development necessary to achieve expected student outcomes.
- ❏ be accessible, purposeful, ongoing, and responsive to staff members' diverse needs.
- ❏ include coaching within classrooms to help teachers expand their pedagogy and knowledge of resources.
- ❏ bridge current practices to research-driven best practices.
- ❏ include collaboration with additional district resources (Special Education, ELL, Literacy Coaches, etc.).
- ❏ focus on guidance and support must be provided to teachers to implement the curriculum scope and sequence.
- ❏ provide teachers with strategies that may be utilized in the classroom in addition to philosophical theories.
- ❏ be collaborative within Professional Learning Communities (PLCs) where teachers engage in tasks such as analyzing student work, identifying teaching strategies, and planning for instruction.
- ❏ include a focus on student performance data to help teachers identify interventions and enrichments.

With respect to Math Resources/Technology/Materials, we believe...

- ❏ effective math programs make use of and provide equitable access to a variety of manipulatives and instructional resources.
- ❏ in supporting the use of mathematical resources through ongoing professional development.
- ❏ the use of instructional technology enhances math instruction by providing students with enriched mathematical discourse and deepening conceptual understanding of math topics.
- ❏ all materials, including RTI resources, used in math will be directly aligned to our AASD Guiding Principles and support best practices in math education. Materials considered for course adoption must meet the criteria set forth within the AASD Mathematics Guiding Principles.

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