

## AASD Best Practices & Pedagogy in Teaching Mathematics

### BUILDING UNDERSTANDING

Increase	Decrease
<ol style="list-style-type: none"> <li>1. Provide challenging and stimulating opportunities for ALL students to learn mathematics</li> <li>2. Provide students opportunity to connect and transfer prior knowledge to ongoing and future learning experiences</li> <li>3. Share responsibility for learning with students by supporting a classroom community with cooperation, shared responsibility and respect</li> <li>4. Provide opportunities for mathematical discourse with justification and debate among students and teacher (multiple solution strategies are to be encouraged and discussed)</li> <li>5. Differentiate instruction to consider individual student's interests, strengths, experiences, cultural backgrounds and needs</li> <li>6. Foster growth mindset (mistakes are an essential part of the learning process)</li> <li>7. Provide multiple opportunities to demonstrate learning</li> </ol>	<ol style="list-style-type: none"> <li>1. Provide opportunities that favor certain groups of students</li> <li>2. Provide direct instruction regardless of student's prior knowledge</li> <li>3. Teacher is solely responsible for the learning</li> <li>4. Focus on recitation of procedural knowledge</li> <li>5. Treat all students alike and respond to the group as a whole</li> <li>6. Foster a fixed mindset by not acknowledging the power of mistakes and multiple methods to find answers</li> <li>7. Identify students as skilled/unskilled based on a single, high-stakes assessment</li> </ol>

### PROMOTING INQUIRY

Increase	Decrease
<ol style="list-style-type: none"> <li>1. Implement inquiry as a strategy for learning mathematics</li> <li>2. Interpret and analyze evidence for developing or revising an explanation</li> <li>3. Teach mathematics as a means for communicating, defending and explaining</li> <li>4. Group students to collaboratively ask questions, defend conclusions, analyze and synthesize data</li> <li>5. Provide appropriate scaffolding to support the success of <b>all</b> learners</li> </ol>	<ol style="list-style-type: none"> <li>1. Implement inquiry as a set of processes</li> <li>2. Get an answer for the sake of getting an answer</li> <li>3. Exploration without purpose and experiments based on recipes</li> <li>4. Students individually analyzing and synthesizing data without defending a conclusion</li> <li>5. Expect students to work without proper background and academic supports</li> </ol>

## ASSESSMENT & MATHEMATICAL LITERACY

Increase	Decrease
<ol style="list-style-type: none"> <li>1. Assess student understanding of the AASD mathematics standards through multiple measures (reading, writing, listening, speaking, and visual representation)</li> <li>2. Assess student understanding through multiple representations (algebraic, graphical, numerical, situational)</li> <li>3. Use of assessments for providing students with timely and quality feedback</li> <li>4. Use of assessment data in order to inform and adjust instruction</li> <li>5. Use of PLC time to reflect, develop, and adjust common assessments</li> </ol>	<ol style="list-style-type: none"> <li>1. Assess students only through a single measure</li> <li>2. Assess students only on recall of algorithms</li> <li>3. Assess students without providing quality feedback</li> <li>4. Assess students only at the end of the unit, chapter, or term</li> <li>5. Use of assessments without any collaborative reflection on instructional practices</li> </ol>

## IMPLEMENTING THE CURRICULUM

Increase	Decrease
<ol style="list-style-type: none"> <li>1. Implement curriculum in a consistent scope and sequence across the district</li> <li>2. Use curriculum that emphasizes application through active and extended mathematical inquiry</li> <li>3. Learn mathematics in a current, relevant, and real world context</li> <li>4. Study fundamental, unifying mathematical concepts in-depth</li> <li>5. Connect mathematics to other content areas</li> </ol>	<ol style="list-style-type: none"> <li>1. Implement curriculum scope and sequence inconsistently</li> <li>2. Use curriculum dominated by presentations of math knowledge through lecture, text, and demonstration</li> <li>3. Learn algorithms as a way of solving without deep understanding</li> <li>4. Cover disconnected math topics with little depth</li> <li>5. Treat mathematics as a subject isolated from other school subjects</li> </ol>

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