## Instructional Strategies That Support Authentic Assessment Within the Dimensions of Math

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<th>Dimensions of Math</th>
<th>Essential Questions</th>
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| **Numbers & Numeration**           | Does the student have the knowledge and skills of the number system necessary to be successful? | • Assistive technology/math dictionary  
• Interactive notebook  
• Picture cues/visual displays  
• Games  
• Use of real-life experiences |
| Understanding names, terms, signs, symbols, whole numbers, and part numbers (fractions and decimals) |                                                                                       |                                                                                          |
| **Patterns and Relationships**     | Does the student recognize patterns and link them logically to problem-solving?       | • Inset pattern boards  
• Walking number lines  
• Manipulatives to demonstrate concepts  
• Incremental rehearsal |
| Determining patterns, identifying missing information, and making associations between differences, similarities, and proportions. |                                                                                       |                                                                                          |
| **Operations and Computation**     | Does the student have the computational skills to accomplish the task presented?      | • Modeling strategy steps and providing mnemonics  
• Chunking  
• Connecting vocabulary to prior learning experiences  
• Rhymes/poems/songs  
• Games  
• Touch Math (Innovative Learning Concepts, Inc)  
• Computer programs |
| Understanding facts and algorithms, operational properties (distributive, associative, etc.) and performing computational skills. |                                                                                       |                                                                                          |
| **Probability and Statistics**     | Is the student able to estimate, approximate, and graph data?                        | • Cooperative learning strategies  
• Investigative problem-solving  
• Discussion, questioning, conjecture  
• Use of real-life experiences  
• Modeling  
• Visual aids |
| Performing logical approximations and reasonable possibilities, predicting outcomes, and displaying data graphically |                                                                                       |                                                                                          |


Adapted from Gravois, T., & Gickling, E. (2003).

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| Understanding terms and processes related to distance, time, temperature, height, weight, money, perimeters, area, and volume. | Does the student possess the necessary measurement skills to perform measurement operations? | • Hands-on activities related to real-life situations  
• Cooperative learning activities  
• Modeling  
• Visual aids/manipulatives  
• Concept sorts |
| **Geometry and Multiple Representations** | Does the student recognize, draw, and interpret lines, angles, and coordinates expressing a variety of data? | • Graphic aids/visual cues  
• Games  
• Frames (SIM: Strategic Instruction Model)  
• Mystery words (for review)  
• Concept sorts |

**Resource:**  


**Additional Resource available in the T/TAC W&M Library (www.wm.edu/tac)**


**Website**

Instructional Resources for Mathematics. Virginia Department of Education web site  
(geometry, fractions, decimals, percent, patterns, functions, algebra, probability and statistics)  
(http://www.pen.k12.va.us/VDOE/Instruction/Elem_M/emath.html)

Enhanced Scope and Sequence Plus (http://www.ttaconline.org)

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