Mathematical Process Skills -"Student Look-fors" Recording Form

Process Skill	Notes
1- Mathematical Problem Solving	
☐ Understand the meaning of the problem and look for entry points to its solution ☐ Analyze information (givens, constrains, relationships, goals) ☐ Make conjectures and plan a solution pathway ☐ Monitor and evaluate the progress and change course as necessary ☐ Check answers to problems and ask, "Does this make sense?"	
2- Mathematical Communication	
☐ Use definitions and previously established causes/effects (results) in constructing arguments ☐ Make conjectures and use counterexamples to build a logical progression of statements to explore and support their ideas ☐ Communicate and defend mathematical reasoning using objects, drawings, diagrams, actions ☐ Listen to or read the arguments of others ☐ Decide if the arguments of others make sense and ask probing questions to clarify or improve the arguments	
3- Mathematical Reasoning	
☐ Make sense of quantities and relationships in problem situations ☐ Represent abstract situations symbolically and understand the meaning of quantities ☐ Create a coherent representation of the problem at hand ☐ Consider the units involved ☐ Flexibly use properties of operations	
4- Mathematical Connections	
☐ Look for patterns or structure, recognizing that quantities can be represented in different ways ☐ Recognize the significance in concepts and models and use the patterns or structure for solving related problems ☐ View complicated quantities both as single objects or compositions of several objects and use operations to make sense of problems ☐ Notice repeated calculations and look for general methods and shortcuts ☐ Continually evaluate the reasonableness of intermediate results (comparing estimates) while attending to details and make generalizations based on findings	

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5- Mathematical Representation	
☐ Apply prior knowledge to solve real world problems	
☐ Identify important quantities and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas	
☐ Make assumptions and approximations to make a problem simpler	
☐ Check to see if an answer makes sense within the context of a situation and change a model when necessary	

6- Use appropriate tools strategically	

☐ Make sound decisions about the use of specific tools. Examples might include:
  ☐ Calculator
  ☐ Concrete models
  ☐ Digital Technology
  ☐ Pencil/paper
  ☐ Ruler, compass, protractor	

☐ Use technological tools to visualize the results of assumptions, explore consequences and compare predications with data	
☐ Identify relevant external math resources (digital content on a website) and use them to pose or solve problems	
☐ Use technological tools to explore and deepen understanding of concepts	

7- Mathematical Precision	
☐ Communicate precisely using clear definitions	
☐ State the meaning of symbols, carefully specifying units of measure, and providing accurate labels	
☐ Calculate accurately and efficiently, expressing numerical answers with a degree of precision	
☐ Provide carefully formulated explanations	
☐ Label accurately when measuring and graphing	