Mathematical Modeling Lesson Analysis Tool
Holistic Lesson Analysis

Name: _____ Grade: _____Date:_____ Lesson Title: _____ (Task or routine)

Math Modeling Phases	Look Fors: Students …	Reflection on Different Parts of the Modeling Lesson What went well? What was challenging? Areas for Growth?
1) **Problem Posing-** Making sense of real-world situations and posing MM problems	• Ask mathematical questions related to the situation • Use information and define the problem • Empathize/connect with the problem. • Bring in their experiences, funds of knowledge and cultural connections to the problem situation	
Rate the level of student participation while problem posing	1___ Few Students 2____ Half the Students 3___ Most Students	
2) **Identify important quantities**- Identify quantities, decisions and assumptions relevant to the problem	• Name and describe relationships between important quantities/variables • Recognize variables can change • Make reasonable assumptions, choices, and decisions • Assumptions stated are relevant to the situation and MM problem	
Rate student participation when identifying important quantities and assumptions.	1___ Few Students 2____ Half the Students 3___ Most Students	
(3) **Create models through exploration and representation -** Mathematically explore possible models represented in various forms (equations, pictures, written descriptions, etc)	• Reach a solution related to the problem posed • Use words, pictures, diagrams, tables and/or explanations to share a solution/model • Use math to demonstrate understanding of how the quantities are related • Correctly use mathematics in their model • Perform operation on the variables and relationships	
Rate student participation when exploring and representing their models.	1___ Few Students 2____ Half the Students 3___ Most Students	
(4) **Interpret and Revise**	• Explain how their solution meets the situation	

Models- Interpreting or revising models in relation to the real-world context	• Consider what if scenarios ...how the model might change with other variables • Compare and contrast other solutions/ models to identify relationship among quantities • Revise and refine the model if necessary	
Rate student participation when interpreting and revising their models	1___ Few Students 2____ Half the Students 3___ Most Students	
(5) **Report out and Take Action-** Communicate and explain model to audience. Share how the model might help others.	• Explain how their model works to solve the problems • Identify limitations in their model • Summarize and clearly communicate their model and solution • Explain how their model can help someone else in a similar situation	
Rate student participation when reporting out and taking action using their model.	1___ Few Students 2____ Half the Students 3___ Most Students	
How did the lesson support equitable participation (multiple contributions, diverse ideas valued, high engagement)?		

CRMT lesson reflection: Reflect on your your lesson addressed each component of the CRMT framework

Knowledge and Identities	
Cultural and Community Funds of Knowledge Helping students connect mathematics with relevant/Authentic issues or situations in their lives	
(Re)humanizing Supporting creativity, broaden what counts as mathematical knowledge and affirms positive math identities for all student	
Student thinking and ideas Creating opportunities to elicit, express and build on student mathematical thinking in multiple ways (gestures pictures words and symbols)	
Rigor and Support	
Cognitive demand Enabling all students to closely explore and analyze math concepts procedures and problem solving reasoning strategies	
Scaffolding up Maintaining high rigor with high support for all students	
Affirming multilingualism Making space for multilingual Learners to be central participants in math mathematics activities	
Power and participation	
Distributing intellectual Authority Distributing mathematics Authority and making space for multiple forms of knowledge and communication	
Disrupting power status and power Disrupt status differences, entrenched stereotypes and inequitable power relationships present in all mathematics classroom	
Analyzing and taking action	

Supporting students use of mathematics to analyze critique and address power relationships and Injustice in their lives	