MATHEMATICS DISCOURSE MATRIX PAGE 1				
Types / dimensions	**Correcting discourse**	**Eliciting discourse**	**Probing discourse**	**Responsive discourse**
Questioning	1. Teacher asks frequent, short-response questions that attend to students' accuracy and speed.	1. Teacher asks open-ended questions that encourage many students to share their answers and how they found them, expanding the breadth of who participates.	1. Teacher asks probing questions that require students to justify their answer, how they found it, and why they used their approach.	1. Teacher includes pressing questions that promote students sharing their answers, how, and why, and connections between math ideas and representations.
	2. Teacher asks follow-up questions when needed to lead to correct answers.	2. Teacher asks follow-up questions to support the sharing and collection of several solutions.	2. Teacher asks follow-up questions to press for mathematical depth.	2. Teacher asks follow-up questions to check that all students are making sense of and connecting math ideas.
	3. Students ask teacher questions to establish correctness of answers.	3. Students ask teacher "what" and "how" questions to clarify solution methods.	3. Students ask teacher "how" and "why" questions to clarify their own math thinking.	3. Students ask one another "how" and "why" questions, taking responsibility for understanding others' math thinking.
Explaining	1. Teacher demonstrates procedures used to solve a problem.	1. Teacher adds to students' presentations of their solution methods for solving a problem.	1.Teacher revoices and extends students' presentations of various solution methods for solving a problem.	1.Students restate, extend, and make connections across various solution methods presented.
	2. Students present their answers when teacher asks.	2. Students present their answers and how they found them when teacher asks.	2. Students present their answers, how they found them, and why they approached a problem as they did when teacher or other students probe.	2. Students volunteer their answers, how they found them, why they approached a problem as they did, and connections to other ideas.
	3. Teacher praises correct answers and corrects students' incorrect answers.	3. Teacher accepts incorrect and less sophisticated answers as indication of students' current understanding.	3. Teacher probes students' thinking about incorrect answers to deepen discussion about why they are incorrect.	3. Teacher and students examine incorrect answers so that all students can learn from mistakes and connect them to correct solutions.
				
	Difference in breadth	**Difference in depth**	**Difference in responsibility**	

MATHEMATICS DISCOURSE MATRIX PAGE 2				
Types / dimensions	**Correcting discourse**	**Eliciting discourse**	**Probing discourse**	**Responsive discourse**
Listening	1. Teacher listens for correct answers to problems and proper vocabulary.	1. Teacher listens for students' answers and how they found them, with attention to students' vocabulary.	1. Teacher listens for students' explanation of their answer and rationale, with attention to students' vocabulary.	1. Teacher listens for partial and complete understanding in students' explanations and connections, with attention to students' vocabulary.
	2. Students listen for teacher's verification of their answers.	2. Students listen for teachers' reactions to ensure they have an acceptable procedure.	2. Students listen to others' explanations to consider if their ideas are similar.	2. Students listen to others' explanations to make connections across math ideas.
Modes of communication	1. Teacher and students communicate in teacher-student-teacher patterns.	1. Teacher and students communicate in teacher-student-teacher-student patterns.	1. Teacher and students communicate in teacher-student-teacher-student or teacher-student 1-student 2-student 3 patterns.	1. Teacher and students communicate with significant student-student patterns.
	2. Teacher favors the use of verbal or pictorial modes when teachers or students share procedures and answers.	2. Teacher makes verbal, pictorial, or written modes available as students communicate the answer and how they got it.	2. Teacher encourages use of multiple modes as students share an answer, how they got it, and why they used their approach.	2. Teacher requires use of multiple modes of communication as students share the answer, how they got it, why, and math connections.
	3. Teacher provides students with representations they need to use to solve a problem.	3. Teacher accepts all representations as equally effective.	3. Teacher encourages students' use of various representations to convey math thinking.	3. Teacher expects comparisons across representations to develop math understanding.
	4. Teacher favors students' use of academic language as "correct"; first or everyday language, if permitted, lacks math connections.	4. Teacher allows students' use of academic, first, and everyday languages equally as modes to share answers and methods.	4. Teacher encourages students' use of academic, first, and everyday languages when appropriate to convey math meaning.	4. Teacher expects use of academic, first, and everyday languages to develop math understanding.
				
	Difference in breadth	**Difference in depth**	**Difference in responsibility**	