Mathematical Language Routines

Stronger & Clearer

What it is: A structured opportunity for students to revise and refine both their ideas and their verbal and written output.

Example: Ask students to write an explanation. Next, discuss as a class. Then, ask students to revise their explanation after the discussion.

Collect & Display

What it is: Capture students' oral words and phrases into a stable, collective reference.

Example: Do a "notice and wonder" activity and record student answers on a poster.

Critique, Correct, & Clarify

What it is: Give students a piece of mathematical writing that is not their own to analyze, reflect on, and develop.

Example: Ask students to comment on what is correct and incorrect about a mathematical argument from a fictional student.

Information Gap

What it is: Giving partners or team members different pieces of necessary information that must be used together to solve a problem.

Example: Give students cards with different representations (e.g., graphs, tables, equations, stories). Ask them to match the cards.

Co-Crafted Questions

What it is: Allowing students to generate mathematical questions for a situation.

Example: Present a situation... "What do you notice and what do you wonder? Write a question." Discuss, then transition a problem to solve as a class.

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Zwiers, J., Dieckmann, J., Rutherford-Quach, S., Daro, V., Skarin, R., Weiss, S., & Malamut, J. (2017). P*rinciples for the Design of Mathematics Curricula: Promoting Language and Content Development. Retrieved from Stanford University,* UL/SCALE. http://ell.stanford.edu/content/mathematics-resources-additional-resources