MC² Thinking Protocol for Mastery of Specific Common Core Content and/or Mathematical Practice Standard(s)

Follow the process below in working with PARCC practice test items:

- Choose an item that relates to math concepts studied in the current or previous curriculum units during your math instruction. Make a paper copy of the problem for each student. Sample problems are available on the MC² website (https://mc2.nmsu.edu/teachers/preparing-for-parcc/) under *Preparing for PARCC* tabs.
- Choose a set of **Thinking/Writing Prompts** below based on the math practice the class is working to develop.
- Add the prompts to the paper copy or display the prompts for the students to respond to.
- Continue using the same set of prompts for an extended period of time so children develop competence and confidence in describing their mathematical thinking related to the math practice.

The questions below are intended to help students move beyond "answer getting" to fully making sense of test item questions and their own mathematical thinking.

Thinking/Writing Prompts to Promote Mathematical Practices

Math Practice 1: Make sense of problems and persevere in solving them.

1. What do you know about the problem?
2. What questions do you have?
3. Explain your reasoning or thinking in solving the problem.

Math Practice 3: Construct viable arguments and critique the reasoning of others.

1. What are the assumptions, definitions, and previous knowledge to help in thinking about this problem?
2. What are some possible conjectures that you have about the problem?
3. Explain your mathematical argument so that somebody else can make sense of your thinking.

Math Practice 4: Model with mathematics.

1. What are the important quantities in the problem that are needed to solve it?
2. What mathematical operation(s) or representation(s) will you use to solve the problem?
3. Explain how you know your answer makes sense in the context of the situation.

Math Practice 6: Attend to precision.

1. What are the important units in the problem? (What are you measuring or counting?)
2. What relationship between the units/quantities do you need to know in order to solve the problem?
3. Use appropriate and precise mathematical language, units, labels, and computations to clearly describe your mathematical reasoning.

MC² Thinking Protocol Steps (At lease 15-20 minutes)

1. **Students <u>think individually</u> about the task and respond to the thinking/writing prompts selected. (3+ minutes)**
2. **Students <u>think with a partner</u> about the task and add to their solution in a different color making sure not to erase any original ideas. (5+ minutes)**
   - Have students discuss their thinking about their responses to the questions with a partner.
   - Make sure both partners have a chance to share.
   - Students may add to their thinking or change their responses in a different color.
3. **Students <u>think with the class</u> while sharing strategies for solving the task. (6+ minutes)**
   - Select 2-3 students or partners to share their ideas with whole class.
   - Students us sentence frames to promote the math practices.
4. **Students <u>reflect</u> on the task and identify what was easy/hard about the problem. (1+ minutes)**