The Cardinal Questions—A General Focus on Math

1. **What do you know** about your content area—in this case, about culturally responsive, research-based math instruction? In other words, what do you know about teaching math (concepts and language, number sense, operations, computational fluency, reasoning/problem solving and the cognitive processes involved)?

2. **What do you do** about meeting the learning needs of all your students? For example, while teaching math do you teach the vocabulary and syntax linked to math? Do you promote classroom discourse in your mathematics lessons?

3. **How do you learn** in order to meet your optimal learning needs?
   - What are your environmental preferences (i.e., noise, lighting, chairs, workspace, temperature)?
   - What is your preferred sensory input modality (i.e., visual, auditory, motor)?
   - How are you smart (i.e., logic smart, music smart, body smart, picture smart, word smart, people smart, self smart, nature smart)?
   - What are your executive functioning strengths?

4. **How do you approach or react to an unfamiliar task?** When you learn something new, how are you affected by your:
   - cognitive style (i.e., impulsive/reflective, global/particular, leveler/sharpener, synthetic/analytic, inductive/deductive, concrete/abstract, random/sequential);
   - personality type (i.e., introvert/extrovert, sensory-intuitive, thinking/feeling, judging/perceiving);
   - motivation to learn (i.e., intrinsic, extrinsic)?
   - emotional stance (i.e., anxious, inept, fearful, competent, challenged)?

5. **What will you do with the information you gain from answering the first four questions?**

Once you have judiciously answered these questions, share the information with your colleagues in faculty meetings or study groups. Synthesize the knowledge of the entire staff so that, as a professional learning community, you can support and learn from each other, and even more importantly, ensure a strong core math program in every classroom.

"Teachers, know thy students." Ultimately, you will want to apply this Cardinal Question "thinking framework" while getting to know your students. The Cardinal Questions that lead to a better understanding of a student's ability are:

1. **What does the student know?**

2. **What does the student do?**

   (Questions 1 and 2 are revisited with more specificity in the chapters that follow.)

3. **How does the student learn?** To meet the student's optimal learning needs:
   - What are the student's environmental preferences (i.e., noise, lighting, chairs, workspace, temperature)?
   - What is the student's preferred sensory input modality (i.e., visual, auditory, motor)?
   - How is the student smart (i.e., logic smart, music smart, body smart, picture smart, word smart, people smart, self smart)?
   - What are the student's executive functioning strengths?

4. **How does the student approach or react to an unfamiliar task?** When the student is learning something new, how is his/her behavior affected by:
   - cognitive style (i.e., impulsive/reflective, global/particular, leveler/sharpener, synthetic/analytic, inductive/deductive, concrete/abstract, random/sequential);
   - personality type (i.e., introvert/extrovert, sensory-intuitive, thinking/feeling, judging/perceiving);
   - motivation to learn (i.e., intrinsic, extrinsic);
   - emotional stance (i.e., anxious, inept, fearful, competent, challenged)?

5. **What will you do with the knowledge gained from answering the previous four questions?**

Educators can use the Cardinal Questions as a starting point for assessing the student's ability in math as well as other subjects. The Cardinal Questions are also valuable as a way to discover more about the student's background knowledge, family, culture, strengths and interests.