

Figure 10.3: Mathematics Inquiry Circle Protocol**Phase 1: Storytelling**

1. Give students time (fifteen minutes) to reflect on their learning in their journal. It may be helpful to advise students to begin by listing recollections about good things in their work and then choose one item on that list to explore in more detail through drawing or writing. The following prompts can nudge this kind of thinking.
 - ◆ Think about times in this mathematics project when you felt like you were successful. List some of those successful moments.
 - ◆ Select one of those moments to write or draw about this successful experience.
2. When students complete their reflective writing, they move to fill an empty seat in the “circle of inquiry” (two circular grouping of chairs with one circle inside the other, chairs facing each other). Partner pairs are the students sitting knee-to-knee (one in the outer circle and one in the inner circle).
3. Students initiate the collaborative inquiry process by telling stories based on their written reflections. Partners will take turns telling and documenting the stories (thirty minutes total; fifteen minutes for each partner). What can prove to be most helpful to each storyteller and listener are the words and phrases that emerge during the storytelling as well as key concepts, themes, and ideas.
 - ◆ The storyteller talks for fifteen minutes.
 - ◆ The listener records notes, capturing important features of the story being shared.
 - ◆ The partner pairs switch roles for the next fifteen minutes.
4. Each student reviews the notes he or she took during the partner’s story (ten minutes). This is preparation for retelling the partner’s story in phase 2 of the protocol.

Phase 2: Retelling Approximately

1. Reconfigure the inside and outside circle pairings into two sets of partner pairs; in other words, pair up everyone in the inside circle and also in the outside circle.
2. Follow and then repeat each of the following steps for every person in the group (ten minutes per person, forty minutes total).
 - ◆ The partner (the one who listened to the story in the previous phase) introduces the storyteller to the group and retells the story that he or she heard (four minutes).
 - ◆ The storyteller has time to add to or clarify what his or her partner has shared (two minutes). The storyteller uses this time to confirm the highlights his or her partner shared and add any other necessary details.
3. The group members ask clarifying questions (four minutes). It is helpful to keep these questions focused on eliciting more information about what was “good” about the original story. This is not a time to make suggestions.

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Phase 3: Crafting and Claiming a Positive Inquiry Question

This section uses flexible timing; the group agrees on the amount of time necessary for individual reflection and whole-group dialogue.

1. Partners complete a written “storytelling recap” for one another based on the storytelling process and the questions that emerged from the group discussion. Once the partners complete their recap, they give it to the storyteller.
 - ◆ Each person reviews his or her notes from the storytelling experience and records responses on the recap sheet. The recap is helpful in creating a shared set of data from the storytelling process and provides written documentation for the storyteller to use as a resource in crafting positive inquiry questions.
2. Partners give storytellers their recap sheet. Students pause and personally reflect on what has been shared as well as what is recorded on the recap sheet. Students should use this time to consider how their personal experience can serve as a beginning point for crafting an inquiry question that builds on some aspect of their reasoning and thinking that is good and strong.
3. Students craft a question for themselves, such as the following, and write it in the center of a sheet of chart paper (on the wall or table) or online in a collaborative document.
 - ◆ What really matters when solving mathematics problems?
 - ◆ What do you want to carry with you in your problem-solving toolkit?
 - ◆ What do you want to change?
4. Students move from chart to chart and silently participate in a written conversation around each proposed question (see the Chalk Talk strategy in chapter 6, page XXX). This activity provides an opportunity for students to discuss the proposed questions, exploring and expanding the possibilities of the inquiry. The intent is not to answer or propose ways to resolve questions, but rather to explore related assumptions and ideas. At the conclusion of the chalk talk, each person has time to revise his or her question. The step ends with a go-round in which each person simply states his or her question for beginning an inquiry. It is understood that this question may go through several revisions once the inquiry is in process.
 - ◆ For a group rather than individual inquiry, during this step, the teacher reconvenes everyone in one whole group inquiry circle. Each person writes the themes his or her partner identified from his or her story on chart paper for the group to see. The teacher encourages the group to review the posted themes and discuss using the following prompts.
 - Are there any additional themes or core values that need to be posted?
 - Are any of these themes or core values related?
 - Are any more important than others?
 - Are any less important than another?
 - Will any have greater or lesser impact on our work together?
 - How can we carry forward what we value most?
 - How can powerful work of the past inspire and support present needs to inquire?

Source: Adapted from Bisplinghoff, B. (2017). Inquiry circles: A protocol for professional inquiry. Accessed at www.nsfharmony.org/wp-content/uploads/2017/10/inquiry_circles.pdf on August 3, 2018.