

Components of the Poster Method and Their Purpose

Individual data sheet: This provides students with an opportunity to understand the problem and attempt to solve the problem so that they have ideas to contribute to the group conversation. It allows for the method to be collaborative and to help build student capacity to participate in mathematical discourse.

Group data sheet: This element provides a vehicle for collaboration, on-task conversation, sharing of ideas, learning to value and consider the ideas of others, and attempting to reach consensus on a solution. The focus is not on the correct solution but on the ideas generated and the discussion focused on those ideas. The main purpose is to engage students in conversation around mathematical ideas in a somewhat risk-free situation.

Visit: This engaging component allows students to see and hear the ideas of other student groups and also provides a chance for them to consider the validity of their own solutions. The visit is not a social occasion, even though it feels like that to students. It is an opportunity to test out their solution several times and then return to their group and make a final decision about the solution. The process feels risk free, but it generates wonderful student thinking as they begin the process of learning to justify their solutions to problems.

Written explanation: Students are not typically accustomed to writing in mathematics, especially if they are not generally asked to explain their reasoning when solving a problem. The purpose of the written explanation component is to build students' capacity for explaining their reasoning. Writing in mathematics in a collaborative setting provides support for this skill, which is vital to good problem solving.

Circle discussion: This is a nice tool to use to create student engagement and involvement in mathematical discourse through the defense of a solution, but it is definitely not a presentation device. The overall purpose of the circle discussion is to provide students with the experience of making a final decision on a solution, deciding how they would justify that solution to others mathematically, practicing that defense, and then joining in a conversation with the whole class about their ideas. Throughout the process of the circle discussion, students are constantly deciding if they agree or disagree with the ideas of other student groups and why they have made those decisions. It's a great experience for students involving various levels of reasoning in a risk-free situation.

Teacher description of the solution: The main purpose of this component is to provide the students with the feedback of the solution after all of their hard work. But this feedback is done quickly by using a group data sheet (poster) from one of the student groups to explain the solution mathematically. This component is not meant to be a fully developed lesson delivered by the teacher based on the mathematical concept in the problem. It is very effective to use student work to present either a great idea for the correct solution or a common misconception that led to an incorrect solution. A solution explained based on the thought process of the teacher isn't as effective as utilizing student work to explain the solution.