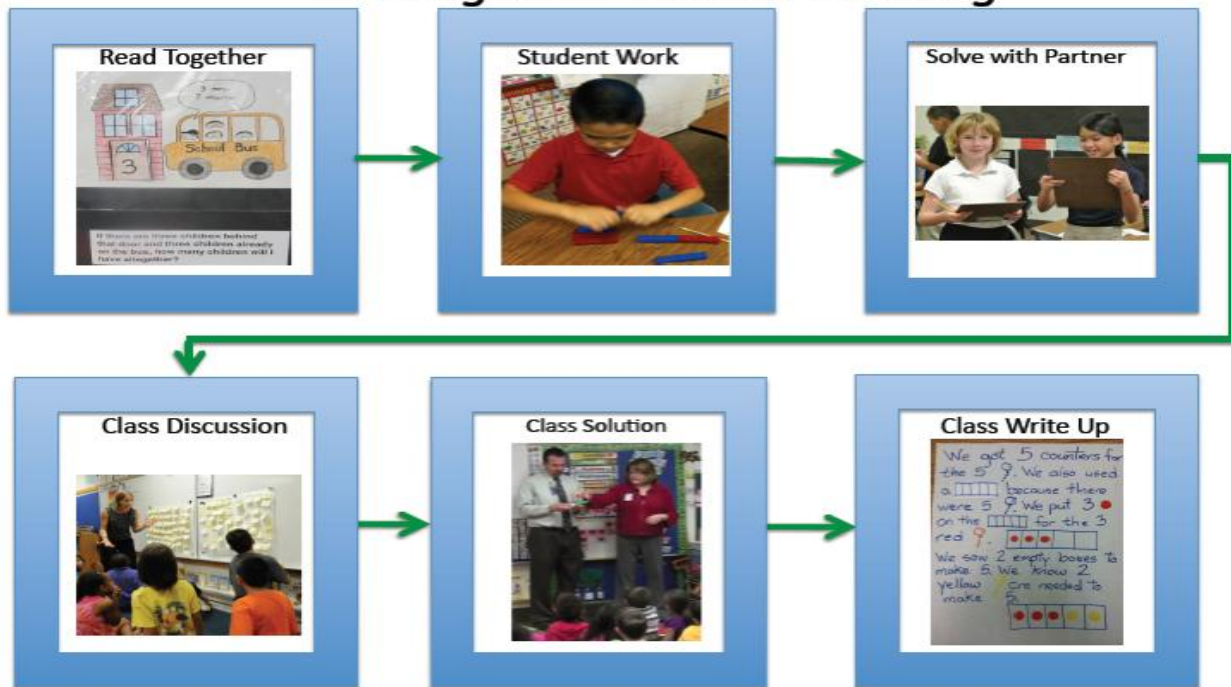
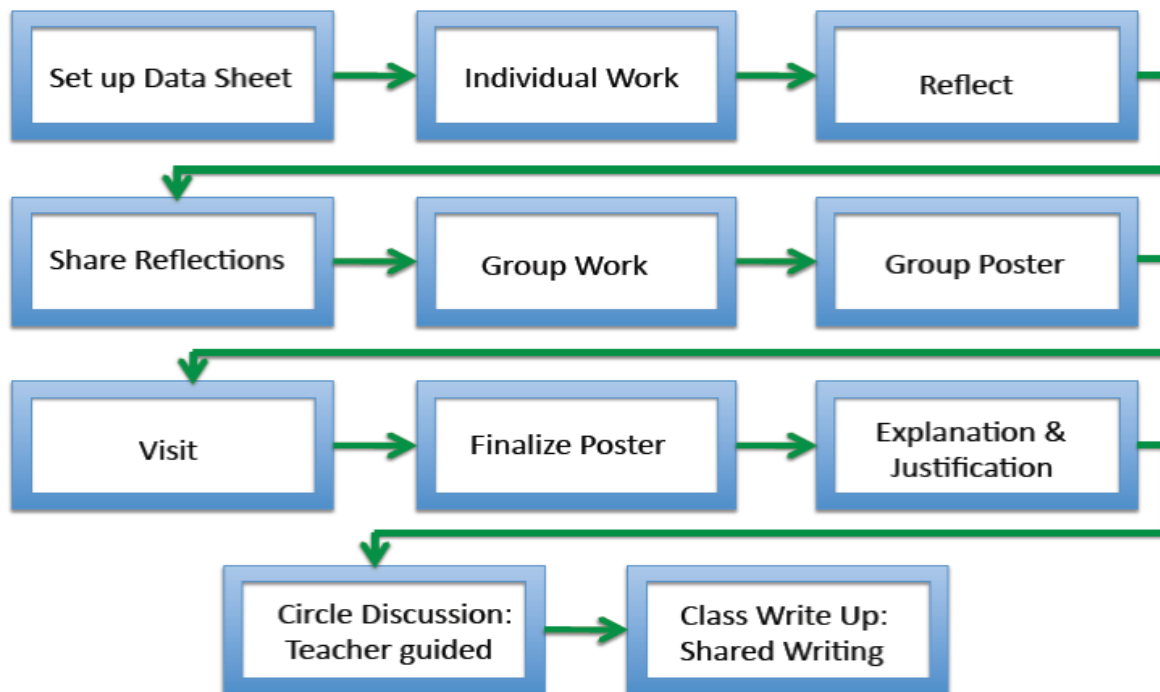


Kindergarten Problem Solving



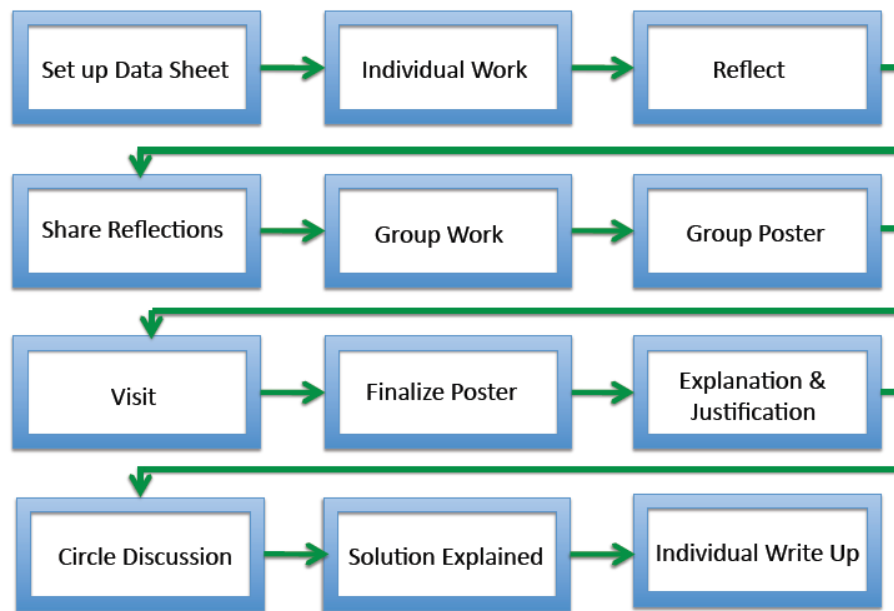
- 1. Read Together:** Read the problem together. (on chart paper)
Teacher asks probing questions to get students to summarize the problem together.
- 2. Student Work:** Make available tools: cubes, double 10 frames, hundreds charts, number lines, pencil, paper (or journals)
Have students work independently for 5 minutes.
- 3. Solve with partner:** Have students share strategies with a partner and solve the problem.
- 4. Class Discussion:** Have students bring materials to the carpet.
Teacher has chart paper.
Share class solutions of several students. (answers- not strategies at this point) - write on chart paper.
Teacher chooses several students with valid strategies to share. As students come up to share, the teacher writes it on the chart paper correctly.
- 5. Class Solution:** Teacher confirms the correct solution with valid strategies.
- 6. Class Write Up:** (on 2nd chart paper) Review 1 or 2 strategies, step by step. First..... Then.... Last...

1st Grade Problem Solving



- 1. Set Up Data Sheet:** Pass out data sheet with problem to students. Students may follow along or listen to the teacher read. Use “popcorn” strategy to have students share one detail of the problem in their own words. Continue until all details of problem have been shared and understood.
- 2. Individual Work:** Students take their seats and, without talking, take 1 minute to think of a strategy they could use to answer the questions.
- 3. Reflect:** Students write or draw to describe the strategy (steps) they would take to determine the results for about 3-5 minutes. Encourage students to use transitional words: “First I,” “Then I,” and “Next I.”
- 4. Share Reflections:** Have students share their strategy with their partner and “critique” their strategy.
- 5. Group Work/Group Poster:** Students work in groups to determine the solution and write/draw on chart paper. All group members must contribute to the chart.
- 6. Visit:** Students “visit” other groups (1 group member stays with chart to clarify).
- 7. Finalize Poster:** Return to original group and discuss the visits. Group makes a decision about their solution. Do they want to change their solution or stay with their solution?
- 8. Explanation & Justification:** Students pick a spokesperson for the group. Spokesperson places poster face down and writes/draws answer to question: How did your group solve the problem? How does your group know the answer is mathematically correct?
- 9. Circle Discussion-Teacher Guided:** All groups state their solution. Allow a confident group to defend their solution. Call on groups to agree/disagree...why/why not? Teacher asks questions but does not comment on statements of students.
- 10. Class Write Up-Shared Writing:** Use group data sheet to compile a shared writing of the solution.

Problem Solving Poster Method: 2nd-8th Grade



- 1. Set Up Data Sheet:** Display the problem. Pass out data sheet with problem to students. Students will read the Engaging Scenario silently and stand when they have finished reading to indicate they are done. Use “popcorn” strategy to have students share one detail of the problem. Continue until all details of problem have been shared and understood.
- 2. Individual Work:** Students take their seats and, without talking, take 1 minute to think of a strategy they could use to answer the questions.
- 3. Reflect:** Students write or draw to describe the strategy (steps) they would take to determine the results for about 3-5 minutes. Encourage students to use transitional words: “First I,” “Then I,” and “Next I.” Students do not need have a solution at this time.
- 4. Share Reflections:** Call on volunteers to share their strategy with the class. DO not comment on their strategies at this time. Let students know that they can choose to use someone else’s strategy.
- 5. Critique:** Have students share their strategy with their partner and “critique” their strategy. Remind students that critique means listen and reflect on the following questions: Is that something I did or could have done to solve the problem? How is my partner’s strategy different from mine? What questions could I ask to understand my partner’s strategy better?
- 6. Group Work/Group Poster:** Students work in groups to determine the strategy and solution and write/draw on chart paper. All group members must contribute to the chart.
- 7. Visit:** Students “visit” other groups to discuss their ideas about solving the problem. (1 group member stays with chart to clarify).
- 8. Finalize Poster:** Return to original group and discuss the visits. Group makes a decision about their strategy/solution. Do they want to change their strategy/solution or stay with their solution?
- 9. Explanation & Justification:** Students pick a spokesperson for the group. Spokesperson places poster face down and writes/draws answer to question: How did your group solve the problem? How does your group know the answer is mathematically correct?
- 10. Circle Discussion-Teacher Guided:** Have groups explain their strategies. All groups state their solution. Allow a confident group to defend their solution. If all students agree on the answer then have groups decide on the strategy they think is best. Call on groups to agree/disagree...why/why not? Teacher asks questions but does not comment on statements of students.
- 11. Class Write Up-Shared Writing:** Use group data sheet to compile a shared writing of the solution. Include strategies on the anchor chart that are most efficient and effective.