Additional Scenarios for Math Lesson 3b

Using a Constructivist Approach—Guided Discovery

The constructivist approach is characterized by the subtle involvement of the instructor. It is important that the teacher and the paraprofessional allow the students to explore the content and draw conclusions on their own based on their past knowledge. This suggests that the main role of the teacher and paraprofessional in the constructivist classroom is to refresh the past content that has already been learned. This previously learned material sets up the necessary discoveries that are needed to obtain the goals of the lesson. In the following scenarios, answer the questions on the implementation of the constructivist approach.

Scenario 1 (Kindergarten – 4th Grade)
The students of a first grade class are being taught to add single digit whole numbers by combining two sets of countable objects and then counting the results. The teacher is an advocate of the constructivist approach to education and has allowed the students to choose their own objects and to select a set of problems to solve. The students have previously learned the procedure of creating sets. As a paraprofessional working in this class, you notice that one group of students are debating over how to approach a situation in which a zero is added to a non-zero single digit whole number. How can you guide these students to the correct conclusion?

Scenario 2 (5th Grade – 8th Grade)
In a seventh grade algebra class, the students are learning about the characteristics of parabolas. The students are working collaboratively and are constructing their own quadratic equations with integer coefficients, then graphing the equations by plotting points that they choose and connecting the points. The goal of the lesson is for the students to recognize the characteristics of the parabola. As the students are working in their groups, you observe their progress. One group is having problems constructing their graphs because they are squaring negative numbers and getting negative solutions. How can you, as a paraprofessional, assist this group in correcting their error without actually revealing the error to them?

Scenario 3 (High School)
A high school geometry class is learning the characteristics of parallelograms. It is given by definition that the opposite sides of the parallelogram are parallel. From this fact the students are to deduce that the opposite angles of the parallelogram are equal. One group of students is struggling with this deduction. They know about the properties of parallel lines and transversals. How can you guide these students to these conclusion concerning opposite angles?