Additional Scenarios for Math Lesson 2a

Using an Inquiry-based Approach with Individual Practice

The main characteristic of the inquiry-based approach is the use of scaffolding questions to direct the students to the learning of a concept. Read the following scenarios and construct scaffolding questions that could be used to lead the students to each lesson’s goal.

**Scenario 1 (Kindergarten – 4th Grade)**
A second grade class is studying the trichotomy properties of whole numbers, determining if a number is greater than, less than, or equal to another. The students are each given a worksheet containing ten pairs of sets of familiar items. The students match up the items in each pair to determine which of the sets have a cardinality (amount of items) that is greater than, lesser than, or equal to the other set. During this practice the teacher and paraprofessional roam the classroom assisting any students struggling with the assignment. Assume you are the paraprofessional working in this classroom and you discover that one student is having a problem with the pairs that have unequal amounts of elements. She can see that the two sets are unequal in size, but cannot determine which is greater or lesser than the other. What questions can you ask the student to assist her in recognizing these properties of inequalities?

**Scenario 2 (5th Grade – 8th Grade)**
A fifth grade class is learning to find the greatest common factor of two integers. During the part of the lesson in which the students are practicing problems concerning this procedure, you notice that one student is finding common factors of the two integers, but not necessarily the greatest common factor. Assuming that the procedure being used by the students is centered on prime factorization, what questions could you ask the student to lead him to the greatest common factor?

**Scenario 3 (High School)**
In an Algebra I class, the students are individually practicing the steps to find a specified term of given arithmetic progressions. Each student is working on a set of problems in which an arithmetic progression is given. The common difference (the constant being added to a term to find the next term) is to be found by the student, and a specified term must be found using formulas previously learned by the students. If you are a paraprofessional working in this class and you find that one of the students is having difficulties applying the formula to find the needed term \((u = a + (n - 1)d);\) where \(u\) is the nth term, \(a\) is the first term, \(n\) is the index of the specified term to be found, and \(d\) is the common difference). What questions could ask this student to help him find this term?