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Chapter #6 Math Reading Quiz

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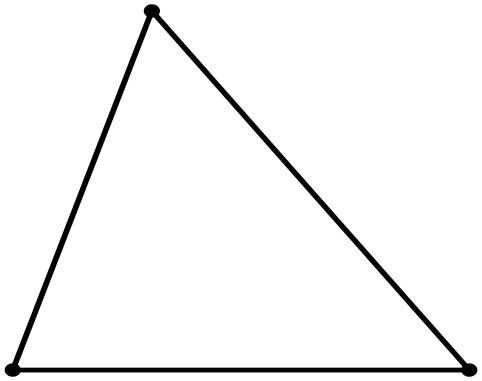
Question #1

Given a math problem related to finding the area of a triangle, come up with an accommodation and modification that you might employ for a student with a specific learning disability.

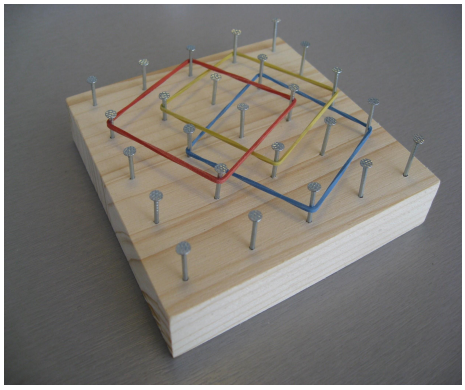
Area of triangle = ½ (base x height)

The base of a triangle is 8'' and the height is 12". Find the area of the triangle using the formula above.

To accommodate the student with SLD, I would give them a sketch of the triangle, pointing out the base and height, then have them plug in the measurements in the appropriate spaces. Then, using the formula as a guide I'll have the student fill in the numbers and solve.



The way I would modify this instruction is by having the student use a geoboard or graph paper for a more hands on approach. However, instead of finding the area of a triangle, I'll have the student work on finding the area of a rectangle which is simpler. By counting the unit squares, the student is able to visualize the problem on the geoboard.



Question #2

What are the 3 tiers of RTI? Describe each.

Tier 1 - This foundational and largest portion of the triangle represents the core instruction that is used with all students based on a high quality mathematics grade level curriculum,research based instructional practices and ongoing progress monitoring. Instructors are highly qualified general education classroom teachers who incorporate interventions such as flexible student grouping, teaching the curriculum as defined and using multiple representations such as manipulatives,visual models and symbols

Tier 2 - Represents students who did not reach the level of achievement expected during instructions in tier 1. Students in this tier should receive supplemental targeted instructions using interventions that incorporate explicit strategies with systemic teachings of critical skills and concepts, more frequent instructional opportunities, and more supportive and precise prompts. Some interventions include working with students in small groups in supplemental sessions to the core instruction, collaborating with special education, gifted and EL specialists, and creating lessons that emphasize the big ideas or themes.

Tier 3 - This is where students are referred to for more intensive assistance. This tier may include comprehensive mathematics instruction or a referral for special education evaluation and/or special education services. Some interventions include working one-on-one with students, using tailored instructions based on specific areas of weakness, and using explicit contextualization of skills-based instructions.(Van de Walle et al., 2019)

Question #3

Explain the CSA model.

Concrete, semi-concrete, abstract approach (CSA) - This is an approach that has been used in mathematics education in a variety of forms for years. This model reflects concrete representations that encourage learning through movements or action with manipulative materials, to semi-concrete representations of drawings or pictures and learning through abstract symbols. Built into this approach is the return to visual models and concrete representations as needed or as students begin to explore new concepts or extensions of

previous concepts learned.CSA includes modeling the mental conversations that go on in your mind to help students articulate their thinking. When used in combination with explicit strategy instruction, this approach met with high levels of success for students with disabilities.

Question #4

What are three stumbling blocks for students with a specific math disability? What should you notice and what should you do?

Three stumbling blocks for students with a specific math disability are:-

1. **Trouble forming mental representations of mathematical concepts**- Students will have trouble interpreting a number line and difficulty going from a problem about a garden plot (finding area) to graph or dot paper representations.Teachers should explicitly teach the representation,e.g. exactly how to draw a diagram like a number line. Larger versions of the representation, like a number line or grid paper, can be used so that students can move on or interact with the model.

2. **Difficulty keeping numbers and information in working memory** - You'll notice that students will lose count of numbers, get confused when other students share multiple strategies during the after portion of the lesson, and forget how to start the problem-solving process. Instructors should use ten-frames to help students organize counts, explicitly model how to skip counting, and record in writing the ideas of other students during discussions.

3. **Lacks organizational skills and the ability to self-regulate** - The student misses steps in a process and writes computations in a way that is random and hard to follow.Teachers should use routines as often as possible or provide self-monitoring checklists to prompt steps along the way. Graph paper should be used to record problems or numbers and math walls should be created as a reference (Van de Walle, et al., 2019)

Question #5

Create an outline noting at least five aspects of culturally responsive teaching with definitions/descriptions and examples.

Culturally responsive mathematics instructions include attention to mathematical thinking, language and culture and it is not just for recent immigrants but for all students. Culturally responsive mathematics instructions can improve the performance of all students as well narrow the academic performance gap and increase students' mathematics course taking. Aspects of culturally responsive instructions are:-

1. **Communicate high expectations** - Too often our first attempt to help students, especially ELLs, is to simplify the math and/ or remove the language from the lesson, which can limit opportunities to learn. Culturally responsive instruction stays focused on the big ideas of mathematics(which are based on state standards) and help students to engage and focus on those critical areas. It emphasizes multiple representations, incorporates students' justifications, and presentations are features of classrooms that support equitable opportunities to learn mathematics.

2. **Make content relevant** - there are two components for making content relevant. One is to think about the mathematics. Is it presented in a meaningful way and is it connected to other content? The second is to select relevant context. Is the math presented in a way that it connects to authentic situations in the students' lives? Helping students see that math is not done in isolation but that mathematical ideas are interrelated or connected, will deepen their understanding of previously taught content. Teachers can use students' interests in literature, sports, or pop culture to build interest and mathematical meaning.

3. **Attend to students' mathematical identities** - .This includes the student's disposition towards mathematics and sense of competence as a learner and contributor in the mathematics classroom. By paying close attention to a student's identity, a teacher can develop more equitable teaching practices. There are many ways that teachers can shape a student's identity. One way is to assign competency. As a teacher listens to students' contributions during small group work, during later discussions, the teacher can attribute ideas to individuals, saying, "That relates to the strategy Chloe used". This approach recognizes Chloe as capable in mathematics, influencing how she perceives herself, as well as how other classmates might perceive her.

4. **Ensure shared power** -Teachers play a vital role in establishing and distributing power in the classroom. Are students (rather than just the teacher) justifying the correctness of solutions? Are they invited to engage in whole-class discussions in which they share ideas and respond to one another's ideas? Effective teachers establish a classroom environment where everyone feels their ideas are worth consideration. The way that you seat students, assign groups and call on students, sends clear messages about who has

power in the classroom. Distributing power among students leads to empowered students.

5. **Use content and language objectives** - If students know the purpose of a lesson. They are better able to make sense of the details when they may be challenged by some of the oral and written explanations. Students should know the language goals they will be developing alongside the mathematical goals. Here are two examples of dual objectives.(Van de Walle et al., 2019)

    1. Students will analyze properties and attributes of three-dimensional solids. (mathematics)
    2. Students will describe in writing and orally a similarity and a difference between two different solids (language and mathematics)

Van de Walle, J. A., Karp, K., Bay-Williams, J. M., Wray, J. A., & Elizabeth Todd Brown. (2019). *Elementary and middle school mathematics : teaching developmentally* (10th ed.). Pearson.