Perla Flores

EDG 565

Professor Valeria Ruiz

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Reading Chapter 3 &4 Math Quiz

1. What are 3 criteria to determine if a math task is "rich" enough, relevant, and rigorous to engage students?

- When selecting a task, it is important to select rich tasks in which all students can engage in relevant, rigorous, and meaningful mathematics. To determine if a task is worthwhile rich task, there’re a few criteria that must be considered
    1) Has a meaningful context? – Students can relate to the context of the problem. It relates to mathematics used in the real world.
    2) Encourages use of multiple representations - it is aligned to grade-level essential standards. Opportunities to assess those standards formatively are provided throughout the task.
    3) Encourages use of multiple representations- students can understand the mathematics through various representations. It doesn’t dictate which representation to use.

2. List 10 topics in math and the 10 manipulates you can use to teach the concept. This can be in chart form.

Manipulatives	Topics
• Ten frame and two-color counters	• Representing numbers (K-2) • Breaking apart numbers (K-2) • Addition and subtraction (K-1)
• Based- ten blocks	• Place values and comparison (1-5) • Addition and subtraction (1-5)
• Connecting cubes	• Counting (k-1) • Making tens (1-3) • Measurements (k-4)
• Pattern blocks	• Geometry (K-5) • Fractions (3-5)
• Place values discs	• Place value (3-5) • Decimals (4-5)
• Color tiles	• Area and perimeter (3-5)
• Cuisenaire rods	• Multiplicative comparison (4-5)
• Fraction tiles	• Fractions (3-5)
• Ten- sided dice	• Any topic (K-5)
• Assorted counters	• Number concepts (K-1)

3. How is literature best woven into the math classroom?

- Literature is best woven into math lesson by promoting problem posing and sense making. Integration of authentic children's literature in lessons or units can be used to regularly engage students in activities to help them make connections between representations, and to foster reasoning and sense making as tools for problem solving.

4. Give an example of: A physical representation, a visual representation, and a symbolic representation. Don't use the same ones in the text.

- Lili has 20 apples and April has 14 apples. How many more apples does Lili has?
- Physical representation – using connecting cubes manipulatives to see how much the difference is.
- Visual representation – A student first draws 20 apples, then draws 14 apples under to match each apple. The student cancels the matching apple then count the remaining apples to get the answer.
- Symbolic representation- A students write the subtraction equation 20 – 14 = 6

5. What are five types of math questions (p. 152)?

The five types of math questions are:

1) Questions to help students get started in a task or problem.
2) Questions to help you monitor students' progress and support perseverance.
3) Questions to ask to help students make connections among ideas and applications.
4) Questions to ask students make sense of mathematics during class discussions.
5) Questions to ask to support the use of representations.

Reference

SanGiovanni, J., Katt, S., Knighten, L., & Rivera, G. (2022*). Answers to your biggest questions about teaching elementary math. Corwin*.