Thank you

FOR YOUR INTEREST IN CORWIN

Please enjoy this complimentary excerpt from *Classroom-Ready Rich Math Tasks, Grades K-1* by Beth McCord Kobett, Francis (Skip) Fennell, Karen S. Karp, Delise Andrews, Latrenda Knighten, and Jeff C. Shih.

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CORWIN

Grade 1

Are These Two Problems the Same?

Solve Add to, Change Unknown word problems

Mathematics Standard

- Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

Mathematical Practices

- Make sense of problems and persevere in solving them.
- Reason abstractly and quantitatively.

Vocabulary

- add
- put together
- join
- change

Materials

- counters—at least 10 in a baggie if possible
- Rock Cards student pages (cut into sets), one set for each pair

TASK

Are These Two Problems the Same?

Figure 8.2 A Rock Collection

Source: Pixabay.com and Pobytov/iStock.com

- Tristan has 5 rocks (see Figure 8.2). His mother gives him some more rocks. Now Tristan has 9 rocks. How many rocks did Tristan's mother give him?

- Maria has 5 rocks in her collection. How many more rocks does Maria need to find so that she has 9 rocks in her collection?

TASK PREPARATION

- In this task, students will work with two Add to, Change Unknown problems that are worded slightly differently. The aim of the task is for students to see that while the words are different in each problem, the underlying mathematical structure is the same. They will also have the opportunity to solve the two problems.

ACCESS AND EQUITY

The rock cards are optional and allow for student flexibility when solving the two problems in the task. Some students can benefit from the use of a pictorial version of the 5-group as they use counting-on strategies to solve the problems.

- Have students work in pairs. Ensure that there are either containers that contain sufficient manipulatives for student pairs to share, or prepare baggies of counters that include at least 10 counters in each bag.

LAUNCH

1. Project the following numberless word problem so that the whole class can see it: "Maria has some rocks in her collection. She wants to have more rocks in her collection." Ask students what they think about when they hear those sentences: "Do any of you have collections of your own? What do you collect? How many do you have? How many rocks do you think Maria has?"

2. Post the following problem next to the numberless problem from Launch step 1:

   » Maria has 5 rocks in her collection. How many more rocks does Maria need to find so that she has 9 rocks in her collection?

3. Ask the students to *Turn and Talk* with their neighbor about these questions: "What has changed in the problem? What new information do we have? What did we learn from this new information?"

4. Reveal the second problem and compare it to the Maria problem:

   » Tristan has 5 rocks. His mother gives him some more rocks. Now Tristan has 9 rocks. How many rocks did Tristan's mother give him?

5. Have students work with their partner again to answer the following questions: "How are these two problems the same? How are they different?"

6. Record students' ideas.

FACILITATE

1. Make sure students have access to counters.

2. **Observe.** Walk around the class and ask students/teams to clarify the strategies they are discussing. Pay attention to which problem they are working on. Are they able to solve both problems?

3. **Interview.** As you observe the progress of the student pairs, select individual students or pairs to interview. Consider asking:

   » How did you solve each problem?

   » Did you count on? What numbers did you use?

   » How are the two problems the same?

   » How are they different?

PRODUCTIVE STRUGGLE

Students who need experience with Add to, Change Unknown problems may only have had prior experience with Result Unknown problems. They should be encouraged to model the action in the problem. What happens in the story? Can we count out Maria's rocks? Then what happens? Maria's rock collection problem will likely be easier for them to solve, so direct them to work with it if they began with Tristan's problem.

» What does the 5 represent in each problem?

» How would you write an equation for each of the problems?

Note: Consider using the Observation and Interview tools (individual or small group) to provide a record of what you observe and interview comments (see Appendix B).

CLOSE: MAKE THE MATH VISIBLE

1. Bring the class back together for a whole-class discussion about the two word problems, asking the class to discuss how the two problems are similar and different. The students may focus on the problem contexts—that both problems are about rocks. They could also share that in each case, Tristan and Maria start and end up with the same number of rocks. They might notice that Tristan's mother is in the first problem, while Maria finds rocks on her own.

2. From your earlier interview conversations with the student pairs, discuss different topics that could differentiate the two problems. For example, you could draw on discussions of the structure of the two problems being slightly different or that the addend in the two problems is slightly different because of Tristan's mother giving some rocks instead of Maria finding more rocks. Ask, "Was one of these problems more challenging for you to solve, or were they the same? Why do you feel like one problem is harder than the other?" Select pairs that believed that one problem was harder than the other to share their thinking. Ask, "Can you write an equation to describe what's happening in each problem?"

> **STRENGTHS SPOTTING**
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> Students who demonstrate strength in adaptive reasoning are typically more engaged when the task requires deeper explanation to solve the problem.

3. Close the task by having the students compare the equations of the two problems. Reiterate that while word problems can be worded differently and the stories could be similar, the equations can be the same.

POST-TASK NOTES: REFLECTION & NEXT STEPS

Task 15: Rock Cards Student Page

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