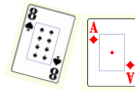


If I Know...Then I Know...



- Strand:** Number and Number Sense
- Topic:** Recognize and use inverse relationships to solve problems
- Primary SOL:** 2.5 The student will
- a) recognize and use the relationships between addition and subtraction to solve single-step practical problems with whole numbers to 20
- Related SOL:** 2.5 b, 2.6b, c

Materials

- If I Know...Then I Know...recording sheet
- One deck of cards (number cards only, no face cards) per team

Vocabulary

inverse relationship, related facts

Student/Teacher Actions: What should students be doing? What should teachers be doing?

1. Students will explore inverse relationships between addition and subtraction number sentences. Model a related fact, using the numbers 8, 6, and 14. Hold a discussion about the different addition and subtraction number sentences could be made using the given numbers. Have students discuss the possibilities with partners or in small groups, and then have a representative from each group share suggestions with the class.
2. Discuss how subtraction number sentences use the same three numbers as addition number sentences but are represented in an inverse fashion.
3. Repeat the process, using the numbers 6, 6, and 12, and have students discuss the different number sentences could be made. Ask students how this set of numbers is different from the first.
4. Have students practice creating related facts, showing the inverse relationship between facts. Distribute copies of the If I Know...Then I Know... recording sheet and decks of number cards.
5. Have students select two number cards from a deck and use the two number cards drawn to come up with a third number by adding them. Then, have the students use the three numbers to create facts with their inverses (related facts) and record them on the recording sheet.

Assessments

- **Questions**
 - How can you use addition to help you solve subtraction problems?
 - How are addition and subtraction related to each other?
 - For any given three digits, how many related facts are possible? What are some examples?
- **Journal/writing prompts**
 - Scott is trying to solve the problem $15 - 8 = \underline{\quad}$. How can related facts help Scott solve this problem?
 - Write all related facts for the digits 7, 7, and 14. How many facts did you write? Explain your thinking.
 - Haley is trying to find the difference for $16 - 7$. What related fact might help her solve it? Write a note to Haley explaining why this fact would help her.
- **Other Assessments**
 - Circulate as students are creating and recording their own related facts as they play the game. Observe the strategies and rationales the students use. Ask questions to determine whether students understand the relationships. Note who is having difficulty, and give help, as needed. Collect the papers as an assessment.
 - Give students one fact (e.g., $2 + 6 = 8$), and have them individually find the related facts as an exit pass. Collect the exit passes as an assessment.

Extensions and Connections (for all students)

- Have students repeat the activity by drawing dominoes from a bag or roll two number cubes to generate the first two of three numbers.
- Provide students with three numbers, and have them determine whether or not the numbers can be used to create addition/subtraction related facts. If they determine that the numbers can create related facts, have students write the related facts.
- Provide to students three numbers using subtraction and have them generate the related facts using the inverse operation.
- Have students create word problems and illustrations to go along with a particular set of related facts.

Strategies for Differentiation

- Provide a template for students to use to fill in the related facts (e.g., $\underline{\quad} + \underline{\quad} = \underline{\quad}$).
- Students who may be struggling with the concept should work with sums and differences to 10.
- Have students work with a partner.

Mathematics Instructional Plan – Grade 2

- Students who struggle may benefit from working within 10 first.
- Use digit cards instead of a deck of cards.

Note: The following pages are intended for classroom use for students as a visual aid to learning.

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If I Know...Then I Know...



Name: _____ Date: _____

Pull two number cards from a deck and record the two numbers drawn. Add (+) the two numbers to come up with a third number, and record it. Complete the related fact using addition/subtraction. Record the number sentences for each related fact on the lines provided.

<u>8</u>	6	14
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1. _____

2. _____

3. _____

4. _____
