

Find the Rule

Purpose

Students will solve a problem, choosing strategies and tools, explaining their reasoning, making calculations, and checking results.

Materials

For the teacher: overhead projector, overhead transparency

For each student: paper, pencil, copy of Black Line Master *Predict and Check*

For each group: 20 randomly chosen addition fact flash cards

Activity

A. Pre-Activity Preparation

Prepare 20 randomly chosen addition flash cards per group of four students. Use only fact cards without answers written on them.

B. Introducing the Problem

1. Tell students they will be trying to find rules for the following types of addition:
 $\text{odd} + \text{odd} = ?$ $\text{even} + \text{even} = ?$ $\text{odd} + \text{even} = ?$
2. Have students volunteer answers to a few addition sentences (e.g., $5 + 3 = 8$, $1 + 4 = 5$, $9 + 8 = 17$), and be sure your examples include even + even, odd + odd, and even + odd numbers.
3. Ask students if they could state a rule about the facts at this point.
4. Accept any answers, but do not comment about right or wrong.

C. Solving the Problem

1. Divide the students into groups of three or four.
2. Remind students they are looking for a rule about addition facts.
3. Hand out addition flash cards to each group.
4. Have students work the problems in their group.
5. Have a recorder write the addition sentences.
6. Tell the students to continue working problems until they think they have found a rule.
7. Ask the students to test any rule they have found by working some additional problems to see if the rule works.

(continued)



EXTENDING
THE

ACTIVITY

Have students work some two-digit addition problems to see if the rules they found hold true.



MEETING
INDIVIDUAL

NEEDS

Have students of varying abilities work together to help students having difficulty with addition or recording addition sentences.

Standards Links
2.1.7, 2.2.1, 2.2.2, 2.2.6

Activity (continued)


D. Discussion


1. Ask students to state any rules they found about addition problems.
2. Record all rules on the overhead transparency.
3. Test the rules with students' help by working some addition problems together.
4. Write the rules that the students have found on a chart labeled "Rules for Addition" [students should find that odd + odd = even, even + even = even, and odd + even = odd].
5. Have students complete the BLM *Predict and Check*.
6. Review the answers with students after they have finished.


Questions for Review

Basic Concepts and Processes

During the activity, discuss the following questions with your students to gauge their understanding of the Standard Indicators:

 Will the answer to this problem be odd or even?

 How did you know if the answer would be odd or even?


 How did you develop a rule for addition facts?

Name: _____



Predict and Check

Predict if the answer will be odd or even.
Work the problem to see if you are right.

	PREDICT (odd or even)	Work the Problem	Were You Right?
1. $5 + 3 =$			
2. $4 + 5 =$			
3. $9 + 7 =$			
4. $6 + 8 =$			
5. $8 + 3 =$			
6. $8 + 4 =$			
7. $9 + 8 =$			
8. $1 + 9 =$			
9. $2 + 6 =$			
10. $9 + 6 =$			
11. $7 + 8 =$			

Predict and Check

Teacher Directions

Provide students with a copy of the BLM *Predict and Check*. Have students first predict whether the answer is odd or even using rules they have discovered. Have students work the problem and determine if their predictions were correct.

Answer Key

1. even, $5 + 3 = 8$
2. odd, $4 + 5 = 9$
3. even, $9 + 7 = 16$
4. even, $6 + 8 = 14$
5. odd, $8 + 3 = 11$
6. even, $8 + 4 = 12$
7. odd, $9 + 8 = 17$
8. even, $1 + 9 = 10$
9. even, $2 + 6 = 8$
10. odd, $9 + 6 = 15$
11. odd, $7 + 8 = 15$