PRACTICE TASK: SUM-moning 5's and 10's

Approximately one day and repeated through centers

STANDARDS FOR MATHEMATICAL CONTENT

MCCK.OA.1. Represent addition and subtraction with objects, fingers, mental images, drawings[1], sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.

MCCK.OA.3.Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1).

MCCK.OA.4. For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.

MCCK.OA.5.Fluently add and subtract within 5

STANDARDS FOR MATHEMATICAL PRACTICE

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

BACKGROUND KNOWLEDGE

Students can develop and refine strategies as they hear other students' descriptions of their thinking about number combinations. For example, a student might compute 8 + 7 by counting on from 8: "..., 9, 10, 11, 12, 13, 14, 15." But during a class discussion of solutions for this problem, she might hear another student's strategy, in which he uses knowledge about 10; namely, 8 and 2 make 10, and 5 more is 15. She may then be able to adapt and apply this strategy later when she computes 28 + 7 by saying, "28 and 2 make 30, and 5 more is 35" (NCTM Principles and Standards, 2012).

ESSENTIAL QUESTIONS

- Does the order of addends change the sum? Give examples to justify your thinking.
- How do you know when your answer makes sense?
- How can I represent problem situations using objects, pictures, and numbers?

- Why is it important that I can build the number combinations for the number 5? 10?

MATERIALS

- 1 SUM-moning FIVES game board, per pair of students
- 5 double-side counters, per student
- 2 dice, per pair of students
- five frame

GROUPING

Partner task

TASK DESCRIPTION, DEVELOPMENT AND DISCUSSION

Part 1
The first player rolls two dice and finds the sum.

After finding the sum of the two numbers, the student will decide what can be added to 5 to make the same sum. After a prediction has been made and explained, students model their explanation on the five frame board. If the student was correct, they place a double- sided counter over the equation that matches their prediction, and five frame explanation.

If the equation is not written, or if 5 cannot be used in an equation that is on the board, the player skips a turn to fill the board.

They two players alternate turns until the first player fills up his game board.

The person with the board filled first, wins!

Part II
Have students share with the whole group the strategies they used to identify how many more were needed to make a number (5 or 10). Were there situations in which they added more than two numbers or that they subtracted two numbers? If so, what were they? Challenge students to identify all the roll combinations where 5 or 10 can't be made with 2 dice.

FORMATIVE ASSESSMENT QUESTIONS

- What strategies are you going to use to find the sum of two numbers?
- If you found sums higher than 5, what strategies did you use?

DIFFERENTIATION

Extension

- Change the game board to SUM-moning TENS and follow the same procedures.

- Activity 2.20, page 51 (Van de Walle & Lovin, 2006), "I Wish I Had". After modeling this activity for students, have them work in pairs to play.

Intervention

- This game board can be changed to include only number combinations that are less than 5 or 10, for students who are not yet ready to work with sums beyond 5 or that are not yet proficient with using 5 as a benchmark.

SUM-moning 5's

5	5
5+1	5+1
5+2	5+2
5+3	5+3
5+4	5+4

SUM-moning 10's

10
10+1
10+2
10+3
10+4
10+5

10
10+1
10+2
10+3
10+4
10+5