



CONSTRUCTING TASK: Calling Out Reds!

Approximately one day and repeated through centers (adapted from the Marilyn Burns activity, How Many Reds?)

STANDARDS FOR MATHEMATICAL CONTENT

MCCK.OA.1 Represent addition and subtraction with objects, fingers, mental images, drawings¹, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.

MCCK.OA.2 Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.

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

“Children need many opportunities to identify quantities, see relationships between numbers, and learn about the operations of addition and subtraction. When developing beginning concepts of number, children benefit from exploring concrete materials and relating numbers to problem situations. They also benefit from talking about their ideas and hearing how other children think. The learning activities should be varied in their contexts and involve the children directly in thinking, reasoning, and solving problems.” (Burns 2007)

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

- *Calling Out Reds?* Recording sheets
- Two different colored dice, per set of partners
- *Anno's Counting House* by Anno Mitsumasa

GROUPING

Whole/individual/small group task

TASK DESCRIPTION, DEVELOPMENT AND DISCUSSION

Refer to the book, *Anno's Counting House* (Anno 1982) read in a previous lesson or “re-read” the book but pose different questions, such as, “*What if the children moved in pairs instead of one at a time? What if there were three houses? What if there were more children? What else could be in the house to count? How many rooms, pictures, windows? What about your house? What about two classrooms or two buses instead of houses?*” (Van de Walle & Lovin 2007) Have the children use counters to work out the story according to the new questions you pose.

Select two students to model this game for the class (or select two pairs of students and divide your class in half, so that a more intimate setting is provided for students to observe each pair of students playing the game. You could facilitate one group, your paraprofessional and/or collaborative teacher could facilitate the other.). The children will need twenty playing cards in all, consisting of ace through 10 of a red suit and black suit along with a recording sheet.

One child will mix up the cards, and the deal them out, facedown, ten to a person. Each student will count the number of reds they have and write it on their recording sheet. Then, they will predict how many reds their partners has so that they make can make ten (show the students how to write the addition sentence). After each partner has written down the number of reds they have and the number of reds their partners has to equal ten, they will check their work by each revealing the number of red cards they have. Have the pairs repeat this process until you determine that the whole group is ready to play.

Once students are ready to play, have students work with their math partner for this activity. As you observe students, ask the following questions to probe their math thinking:

- Do you notice a pattern?
- What pair of addends do you seem to have the most of? The least of?

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Kindergarten Mathematics • Unit 4

- How are you able to determine how many more you need to make ten, without counting? Or are you able to?

Invite each pair of partners to come to the whole group with their recording sheets. Make a class graph of the addends the children recorded. Analyze the graph and have students speculate about why some pairs of addends come up more often than others (Burns 2007).

Teacher Friendly Tip: Copy the addition and subtraction recording form back to back, laminate them (or use a sheet protector), and you have recording sheets that will last you a lifetime without making multiple copies! You will only need one class set. Students will use overhead markers to record their answers. If you have a student on whom you are collecting data, make a copy before they erase their work and you have documentation of progress.

FORMATIVE ASSESSMENT QUESTIONS

- Are there any more ways to set the bikes in the display case? How do you know?
- Why did you decide to do it his way?
- Are you sure that you have found them all? Why do you think so? How do you know?
- Did you develop a shortcut to find your answers?
- Did you identify any patterns or rules? Explain!

DIFFERENTIATION

Extension

- *Make 10 on the Ten-Frame* (Van de Walle, Activity 4.8; Van de Walle & Lovin 2006)
This activity can be adapted by changing it to “Make 5 on the Five-Frame” to keep the sum within ten. Use fact cards that have sums less than ten and give each student two five-frames to use to model each number on the fact card. Then, students should decide on the easiest way to show what the total is, without counting. Take note as students explain their thinking of which strategies they are using—are they efficient strategies?

Intervention

- As students count their red cards, they could fill up a ten-frame with the corresponding number of counters. They will then record that number on their recording sheet and then identify how many more are needed to make ten. The student should then check their predictions by actually counting out the number of red cards their partner has.

Calling Out Reds?

Name: _____

Number of Red Cards I have	Number of Red Cards I <i>predict</i> my partner has	How many actual red cards my partner has	Total Number of Red cards