

Scaffolding Task: Ten!

Approximately 2 days

STANDARDS FOR MATHEMATICAL CONTENT

MCC2.OA.3.Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends.

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.

*****Mathematical Practices 1 and 6 should be evident in EVERY lesson*****

BACKGROUND KNOWLEDGE

Students explore odd and even numbers in a variety of ways including the following: students may investigate if a number is odd or even by determining if the number of objects can be divided into two equal sets, arranged into pairs, or counted by twos. After these experiences, students may derive that they only need to look at the digit in the ones place to determine if a number is odd or even, since any number of tens will always split into two even groups. (AZ Explanations and Examples)

ESSENTIAL QUESTIONS

- How are odd and even number lines identified on the number line?
- How do I determine if a number is odd or even?
- What strategies can I use to tell if a number is odd or even?
- What is odd? What is even?

MATERIALS

- *How Many Feet in the Bed?* By Diane Hamm or similar book about counting by 2s
- Various manipulatives (counters, base-ten blocks, unifix cubes)
- Group Recording Sheet

GROUPING

Whole Group, Small Group

TASK DESCRIPTION, DEVELOPMENT AND DISCUSSION

Part I

Read a story like, *How Many Feet in the Bed?* By Diane Hamm. Ask the students to suggest other things that come in 2's. Brainstorm ideas on a class chart.

Part II

Place children in small groups of three to four students and have them create a strategy to find the total number of eyes, ears, wings on birds, wheels on bicycles etc. for a given number of objects not to extend beyond 10 (as students only work with skip counting to 20 in grade 2, establish understanding first before moving on.) Give students a half sheet of chart paper to use to explain the number of objects from the scenario given. For example, a teacher could give a group of students bicycles and the number 7 and ask them to determine how many wheels in all, using pictures, words and numbers. As students are working, look for the use of strategies to determine the number of each item in the group. Look to see if students are:

- counting by ones and pointing (1,2,3,4,5,6,7,8 .. 8 eyes)
- skip counting by 2s (2, 4, 6, 8), 4s (4,8,12,16), or 5s (5,10,15,20)
- using repeated addition ($2+2+2+2=8$)
- drawing pictures of equal groups. 

While students are working, ask formative assessment questions from list below.

Part III

Students will share their scenarios with the class. Teacher should ask questions as students present information.

FORMATIVE ASSESSMENT QUESTIONS

- What strategies are you using to determine how many _____ are in your group?
- Can you show that answer in a different way?
- How can you demonstrate this with a picture?
- How could you write this in a number sentence?
- Do you have the same number of any of your objects? Why do you think this is the case?
- What makes a number even? What makes a number odd?

DIFFERENTIATION

Extension

- Students work independently to show quantities larger than 20 that come in 2s.

Intervention

- Students use manipulatives to show their work.