

## Mathematics 2

### Week 1 Day 3

#### Lesson Plan Title

Estimating and Counting Sets: Grouping to make Counting More Efficient

#### Lesson Summary

In groups, students will estimate, count, and record the number of objects (21 to 50) in a set. Students should count in a variety of ways.

#### Curriculum Outcomes

N01, N04, N06, N10

#### Assessment Of Learning or Assessment For Learning

Observation, Conversation, Product

- Were students able to give a reasonable estimate for the collection of objects?
- Did students' estimates become more accurate as the activity progressed?
- Were students able to organize their objects to make counting more efficient?
- Did their count match the number of objects in the bag? Was the final count accurate?
- Were they able to record the number symbolically?
- Did students count in a variety of ways (by 1s, 2s, 5s...)?
- Did students understand that when counting by 2s (or 5s) they need to take two (or five) objects at a time as they count?
- Do students understand that it is sometimes necessary to combine different types of counting in order to find the quantity of the set? – If given 47 counters, did they count by 5s to 45 then by 1s or 2s to 47?
- Did students' estimates become more accurate as the activity progressed?
- Were students able to record their counting results in a manner that was easily understood by others?
- Were students able to recreate their counting groups pictorially?

#### Communication/Vocabulary

- number words
- numeral
- skip counting
- estimate
- groups of .....

#### Technology

- none

#### Materials

- sets of between 21 and 50 objects
- various letter-labelled bags of objects to count (21-50) (enough bags of objects for each group to do several bags)(record the number of items in each bag on a master sheet)
- chart paper for recording (divided into fourths)
- color daubers, stamps and stamp pads, or crayons/marker

## **Mental Mathematics**

Review saying the number sequence forward and backward by 1s to 100, and forward by 2s to 20. (guess my mistake)  
Extend the number sequence forward by 2s to 100, and review counting by 5s and 10s to 100. (echo counting)

## **Development**

### **Before**

Begin the lesson by displaying the information that the students recorded on the previous day. Note the ways in which various groups counted the objects in their sets. Have students share the counting strategies they used. Depending on the evidence collected during your observations yesterday, this lesson will look slightly different in various grade two classrooms.

If many or most of the students in your class were not grouping the counters yesterday and were simply counting by 1s, then you will model how to group and count objects by 2s or 5s. Students will then be encouraged to count by 2s or 5s.

If your students were confidently grouping and counting objects by 2s and 5s, then they should explore counting by 10s.

Regardless of the focus for grouping and counting, students will work in groups of two with letter-labelled bags of objects (21-50). They will again estimate, count, and record pictorially and numerically the quantity in the bag. This is the same task they completed yesterday.

### **During**

Students should work with partners to complete the task. Groups may complete more than one bag. Once groups have completed the estimation, counting and recording of objects in at least two bags, all students should complete a gallery walk. Each group will leave the last set of objects they counted on display. The display should clearly show others how they organized/grouped the objects to make counting easier. Each group should not leave its recording sheet for others to see. During the gallery walk, students will view other groups' objects. For each display they view, students should record the total number on objects and how the group organized their objects to make counting easier and more efficient. For example, a student might record, "There are 25 counters. They grouped their objects in 5s. To count, you would say the numbers 5, 10, 15, 20, 25."

### **After**

Debrief the lesson and draw out key ideas about the lesson. Areas of focus for the discussion may include the following or other topics based upon observations.

Groups will share the information gathered as they worked on the task and during the gallery walk.

- Were your estimates reasonable?
- Did your estimates change as you had more opportunities to estimate and count?
- Did you organize your objects to make counting more efficient?
- Did your count match the number of objects?
- Did your method of counting change from one turn to the next? Why or why not?
- How did you record the number symbolically?
- How did you count (by 2s, 5s or 10s) the objects in your set? Were there other ways you could have counted the objects? Did you always count by the same number or did you count by different numbers?
- Explain how you counted by 2s (or 5s or 10s). (Did they take two (or five objects or ten objects) at a time as they counted?)
- Was it sometimes necessary to combine different types of counting in order to find the quantity of the set? (If

given 47 counters, did they count by 5s to 45 then by 1s or 2s to 47?)

- Can everyone in your group explain how you counted or can they do the count?
- What way do you like to use when counting?
- Which way of counting took a longer time?
- Are some ways of counting more efficient or quicker than others?
- What makes a method of counting efficient or quick?
- How did you decide the way you would count?
- Which bag held the most objects? Which bag held the fewest objects?
- Can we order the bags based on the number of cubes they held?

### **Differentiation**

- Encourage students to count in a way that was different than the way they counted the previous day.
- Provide bags of less than 20 items.
- Provide hundred charts to support skip counting.
- Provide objects in the bags that are pre-grouped (by 2s or 5s) to support skip counting.
- Providing bags of objects with more than 50 items.