Lesson Summary: Grade 1

Overall Objectives

This lesson will help students to:
- Estimate quantities;
- Group and count quantities by 10's;
- Recognize quantities in relation to 10;
- Compare quantities using the terms *more, less,* and *equal.*

Learning Expectations

Students will:
- Understand whole numbers by exploring number relationships using concrete materials (e.g., demonstrate with blocks that 7 is one less than 8 or two more than 5); 1m1
- Compare and order whole numbers using concrete materials and drawings to develop number meanings (e.g., to show place value, arrange 32 counters in groups of 3 tens and 2 ones); 1m4 SM
- Solve simple problems involving counting, joining, and taking one group away from another (e.g., how many buttons are on the table?), and describe and explain the strategies used; 1m8
- Estimate quantity in everyday life (e.g., guess, then count how many beans are in the jar); 1m9 SM
- Demonstrate the one-to-one correspondence between number and objects when counting; 1m14 SM
- Count by 1's, 2's, 5's, and 10's to 100 using a variety of ways (e.g., counting board, abacus, rote); 1m15 SM
- Compare, order, and represent whole numbers to 50 using concrete materials and drawings; 1m18 SM
- Investigate number meanings (e.g., the concept of 5); 1m19
- Use mathematical language to identify and describe numbers to 50 in real-life situations; 1m20
- Discuss the use of number and arrangement in real-life situations (e.g., there are 21 children in my class, 11 girls and 10 boys); 1m21
- Model numbers grouped in 10's and 1's and use zero as a place holder; 1m23
- Estimate the number of objects and check the reasonableness of an estimate by counting; 1m27
- Pose and solve simple number problems orally (e.g., how many students wore boots today?); 1m24
- Use concrete materials to help in solving simple number problems; 1m25
- Describe their thinking as they solve problems. 1m26

The code that follows each learning expectation comes from the Ontario Curriculum Unit Planner.
See www.ocup.org for further details.

Materials

- Container (clear plastic bag, tub) holding 45 cubes
- Three ten frames for each pair of students
- Container (clear plastic bag, tub) holding approximately 50 tiles for each pair of students
- "Ten-Frame Wagon" Recording Sheet (one per student)
- Home Connections – "How Many 10's?" game (one per student)

Approach

Get Started
In a guided learning session:
- Show students a container holding 45 cubes and ask them to estimate the number of cubes in the container. Empty out the contents so that students can view the cubes spread out. Ask the students if they wish to revise their estimates.
- Show students a ten frame. Count the spaces on the ten frame together.
- Ask the students to predict the number of ten frames that will be filled when all the cubes are placed on ten frames.
- Have a few students help you place the cubes on ten frames. Compare the results with what students had predicted.
- Ask the students, “How can we count to find out how many cubes there are altogether?” Count the cubes on the full ten frames by 10’s, and the 5 other cubes by 1’s. Discuss how the ten frame is helpful in grouping and counting objects by 10’s.

Work on It – Prepare Students
In a guided learning session:
- Explain to the students that their challenge will be to scoop 30 tiles from a container. Ask students to tell the number of ten frames that will be filled if they scoop exactly 30 tiles.
- Demonstrate the activity by asking a student to take handfuls of tiles from the container until the class estimates that 30 tiles have been scooped. Place the tiles on the ten frames, and count the tiles by 10’s and 1’s. Discuss whether more than, fewer than, or exactly 30 tiles were scooped.
- Explain to the students that they will be doing the scoop-30 activity with a partner. Give 3 ten frames and a container holding approximately 50 tiles to each pair of students.

Work on It – Observe Students
In a shared learning session:
- Observe how well students are able to estimate 30 tiles. Watch and listen to them count by 10’s and 1’s to assess their counting abilities.
- Probe students’ thinking by asking questions such as:
  - Are you getting better at estimating 30 tiles?
  - How are you getting better at estimating what 30 tiles look like?
  - How many tiles do you think are in this pile? How could you check to find out how many tiles there are?

Reflect and Connect
In a guided learning session:
- Help students reflect on the activity and their learning by asking questions such as:
  - Did your estimates of what 30 looks like improve? Why do you think your estimates got better each time?
  - How did the ten frames help you count the tiles you scooped?
  - How could you use a ten frame to help you solve other problems?

Build on Learning

Introduce the following activity in a guided learning session. Students may complete the activity with a partner or independently.

- Show a copy of the "Ten-Frame Wagon" Recording Sheet to the students and explain that the diagram is a picture of Farmer Bob's wagon. Tell how Farmer Bob uses the wagon to take bales of hay to the barn. Discuss the number of bales that fit on the wagon.
- Pose the following problem to the students: Farmer Bob has a large herd of cows. He needs to take 35 bales of hay to the barn to feed them all. How many trips will he have to make?
- Explain to the students that they will be working by themselves to solve the problem. Suggest that they use manipulatives to help them find the solution. Explain that they may draw pictures and write numbers and sentences to show how they solved the problem.
- Observe and assist students as they work on the problem.
- Discuss students' strategies and solutions after they have finished solving the problem.

Assessment

Observe students to assess how well they:

- Use one-to-one correspondence when placing tiles on the ten frames;
- Count by 10's;
- Make increasingly accurate estimates;
- Determine and explain if the number of tiles they scoop is more than, less than, or equal to 30;
- Explain their estimation strategies;
- Group objects by 10's to solve a related problem.

Extensions/Adaptations

Students having difficulty estimating 30 cubes could attempt to scoop 10 or 20 cubes. Students needing a challenge could scoop a larger quantity of cubes, such as 35 or 45. Students could try the activity using manipulatives that are larger or smaller than tiles, and explain whether they need to take more or fewer handfuls to scoop 30 objects.

Home Connections

Encourage students to play the "How Many 10's?" game with someone at home. Play the game in class, first, to familiarize students with the activity.

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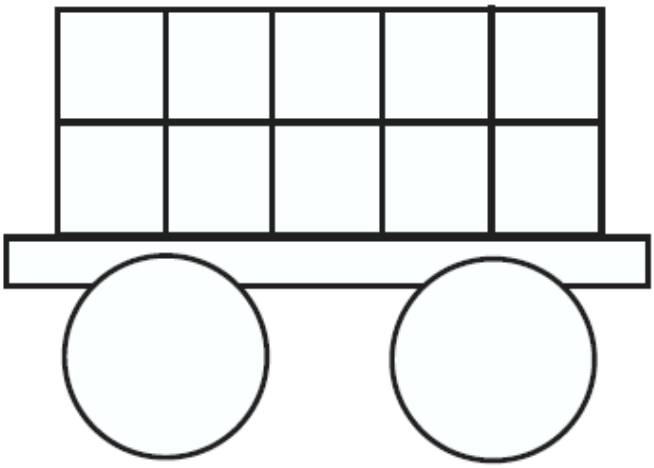
"Ten-Frame Wagon" Recording Sheet

Farmer Bob has a wagon that can hold 10 bales of hay. If he has 35 bales of hay to take to the cows in his barn, how many trips will he have to make?

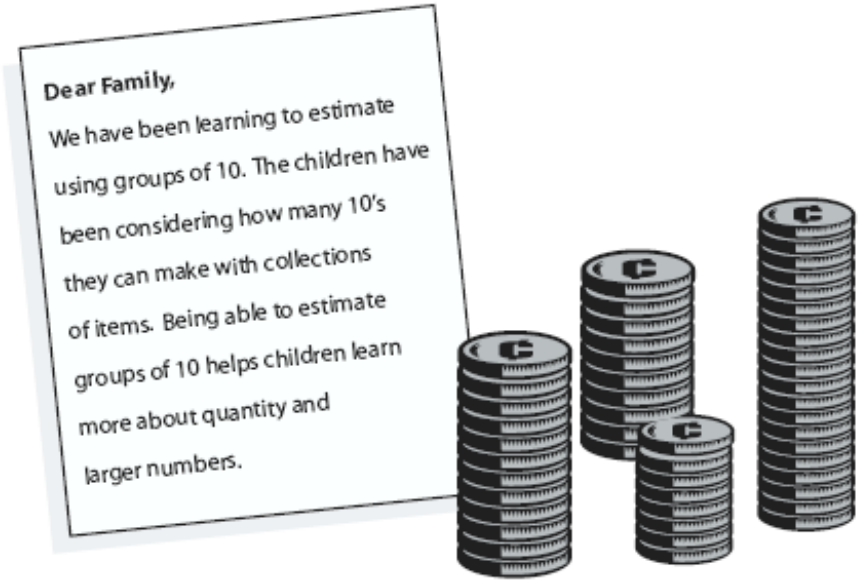
Farmer Bob would need to make _____ trips.



This is how I found the answer:

I used: ❍ Pictures ❍ Numbers ❍ Words

Home Connections—K & Grade 1 Worksheet



How Many 10's?

Using pennies, buttons, blocks, or other small items, play the following game:

Place several handfuls of your collection on the table. Take turns estimating how many ten frames you could fill using all the pieces in your collection. Place the items on the ten frame to check your estimate.

Did you estimate too many ten frames or too few?

Add some items to the collection or take some away, and try the estimating game again and again. See if you can get a closer estimate each time you try!

Ten frame
