MORE!

A lesson on comparing

Episode 201: Math is everywhere, Part One
Kindergarten

Georgia Performance Standards

- MKN1a Count a number of objects up to 30
- MKN1e Compare two or more sets of objects and identify which set is equal to, more than, or less than the other
- MKN1f Estimate quantities using five and ten as a benchmark
- MKN1h Use coins by name and value
- MKM1b Compare and order objects on the basis of capacity
- MKP2 Students will investigate, develop, and evaluate mathematical arguments.
- MKP3 Students will use the language of mathematics to express ideas precisely.
- MKP4 Students understand how mathematical ideas interconnect and build on one another and apply mathematics in other content areas.
- MKP5 Students will create and use pictures, manipulatives models, and symbols to organize, record, and communicate mathematical ideas

Objectives

- The students will compare two groups by one-to-one correspondence to determine which group has more
- The students will compare two groups on a balance to determine which group has more
- The students will estimate how many are in each group
- The students will identify two coins at a time and determine which has a greater value
- The students will observe two containers and determine which holds more

Materials

- TV/VCR or Computer/LCD Projector
- Video *Count On It!* 201
- Balances (one for each pair of students)
- Unifix cubes (enough for each student to have a handful)
- Baggies with one of each coin (may be cardboard, plastic, or real)
- Two different sized measuring cups for each pair of students
- Enough generic brand rice crispies to fill each measuring cup in the room

Procedure

Opening

- View *Count On It!* 201 – Entire Episode.

Work time

Part one – observing the balance, counting

- In pairs, students each grab a handful of Unifix cubes.
- One student places his cubes on one side of the balance.
- The other student places her cubes on the other side of the balance.
- Discuss as a class what happens to the balance.
- The students estimate how many cubes are on each side.
- The students predict which side has more.
- The students count out how many cubes on each side to determine which side has more.
- In math journal, students may draw the cubes out for each side.
- Discuss how counting in this situation was a good way to determine which side had more because there were not very many cubes to have to count.

Note: Some students may understand the balance easily and will be adamant that they don't need to count because the balance tells them who has more. In this instance, applaud them for using the balance, and have them count to double check their answer. Other students will not understand the balance and this is why we are letting them explore it, but then count to come up with an answer.

Part two – memorizing the value

- Have class gather together on the carpet, but remain in pairs.
- Pass out baggies with coins to each student.
- Have them take out and lay the coins in front of them.
- Teacher has large flashcards of coins. Show a coin and have students find that coin in their collection, hold it up, and as a class, name it.
- Continue on with each coin several times, speeding it up as you go to make it a challenge (and fun!).
- Have each student put coins back into the bags. They will secretly draw out one coin each (with partner), and determine whose coin is worth more. Continue on, comparing all of the coins with one another, looking for which is "more" (kind of like the card game "War" but without keeping score).
- In math journal, students may put the coins in order from least value to most value.
- Discuss how knowing how much something is worth can help you determine what is "more".

Part three - exploring

- In pairs, give each set of students two different sized measuring cups to explore.
- Ask questions about the cups (what do you think the numbers stand for, etc.).
- Go around and fill the cups up with Rice Crispies (they should already have been taught that they do NOT eat what we use as manipulatives in math without permission).

- Which cup has more? How can they tell? If you wanted to make sure each child got the same amount, what could you do? Let the students explore these questions and come up with answers that will be shared during closing.

Closing
Ask students to share their findings by using these questions:

- How did you figure out who had more Unifix cubes than the other? (They counted, which was a good method, because there weren't very many of them).
- How did you figure out who had more money than the other? (We just knew because we know how much each coin is worth, so we didn't need to count.)
- How did you figure out whose cup had more cereal? (Answers will vary, but you want to make sure that they understand that counting wasn't the best method because it would take too long.)

Assessment

- Teacher observation/documentation on student rubric used by your school/county during work time and closing (sample rubric can be found on our website)
- Journal writing – check for understanding in the accuracy of journal entries