Fractions of a Sheet Cake

Episode 204: Snappy and Blossom Go to the Farm, Part Two
2nd Grade

Georgia Performance Standards

- M2N4a Model, identify, label, and compare fractions (thirds, sixths, eighths, tenths) as a representation of equal parts of a whole or of a set
- M2N4b Know that when all fractional parts are included, such as three thirds, the result is equal to the whole

Objectives

- The students will divide a sheet cake into eight equal pieces
- The students will divide a model of a sheet cake into three, six, or ten equal pieces
- The students will label halves, fourths, and eighths
- The students will draw and label thirds, sixths, and tenths
- The students will compare several fractions
- The students will come to the conclusion that since eight eighths is the same as one whole, the same is for three thirds, six sixths, and ten tenths

Materials

- TV/VCR or Computer/LCD Projector
- Video *Count On It!* 204
- Sheet cake (Publix is tastiest!)
- Plastic knife
- Plates (enough for class)
- Forks (enough for class)
- Plastic Gloves
- Copies of model sheet cake (enough for class)
- Pencils
- Data sheets with sheet cakes drawn on them

Procedure

Opening

- Watch *Count on It*! 204 clip "Pumpkin Pies" (VHS 6:34 – 12:20)
- Make a fishbowl with eight kids sitting around the sheet cake and the rest of your class standing in a circle around the sitting students.
- Explain the fishbowl rules that the students on the outside of the fishbowl are observers and may not speak.
- The eight students on the inside of the fishbowl will be mathematically solving the tasks the teacher gives them. Give one person the plastic knife and let her know that she will not cut unless she has a group consensus.

(Note: Any student working with the cake must have plastic gloves on if you are to eat the cake when finished with the math lesson!)

- Ask the eight, “Can you split this cake in half (probe students to remember that fractions require equal pieces)
- Once they do it, have an outside students go to the board and draw a quick picture of what the cake looks like now
- Then ask the students, “Can you split this cake into fourths?” (Let the eight in the middle discuss this amongst themselves, but steer the discussion as needed to make sure they don’t divide each of the halves into four pieces, but the total cake into four pieces)
- Have another outside students draw this cake on the board
- Now ask the students, “Can you divide this cake into eighths?” (Again, guide only if necessary)
- Have a third student draw a picture on the board of a cake split into eighths
- Ask the whole class, “How many pieces of cake do we have now?” (8) and “How many cakes do we have?” (1) “So eight eighths (pointing) is the same as one whole?” (write on board)
- Move the cake to the side and have students return to their desks

Work time

- Pass out data sheet that has three sheet cakes already divided but unlabeled on the front, and three undivided sheet cakes on the back
- Have students label the different pieces of each sheet cake (1/2 on each side for the first cake) and then write the equation below:
  (Example: 1/2 + 1/2 +1/2 = 2/2 = 1 whole) – You check for understanding
- Now, explain to the students that on the back of their data sheets are three more sheet cakes that need to be cut into fractions (thirds, sixths, and tenths)
- Have students work individually or in pairs to come up with ways to do it (make sure they label each part with a fraction and write the equation below)
- Once everyone is finished, ask, “Which is bigger, one half (write it on the board as you say it), or one fourth?” Continue this line of questioning until they get that the bigger the bottom number, the smaller the piece (so long as the top number stays the same, of course)

Closing

- Choose several students to share (at least one example of each cake on the back of the data sheet) how they divided their cakes into fractions
  - Note: A great way to do this is to give the students overhead sheets to copy their work onto – let them teach the class what they did
- Give each student a piece of cake and watch the entire episode for fun!

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) of making and labeling fractions
- Finished data sheet