EASY AS PUMPKIN PIE

SUBJECTS: Mathematics

STUDENT SKILL: The student will use manipulatives, models, known facts, properties and relationships to explain thinking processes.

OBJECTIVE: The student will demonstrate place values, using pumpkin seeds as a math manipulative.

BACKGROUND
Pilgrims and other early American settlers made the first pumpkin pies by burying pumpkin in the ashes of their fires. After a pumpkin had cooked, they would cut off the top, scrape out the pulp and add honey or maple syrup. The pulp was then made into delicious pies and breads. Pumpkins were used for many different things. Dried pumpkin shells served as bowls or containers for storing grains and seeds. Pumpkin seeds were dried and roasted for a high-energy treat.

ACTIVITY
1. Divide class members into groups of four or five students. Provide one pumpkin for each group. Allow students to handle the pumpkins, and have them use their senses to write the words that describe the pumpkins.
2. Review the term “estimate.” Ask each group to estimate the number of seeds in their pumpkin. Write the group estimates on the board.
3. Hand out three sheets of construction paper, and instruct the groups to tape them together in a row to create place value boards. Have one member of each group write the place value terms — “ones” across the top of the first sheet of construction paper, “tens” across the top of the second sheet and “hundreds” across the top of the third sheet.
4. Cut the top from each pumpkin. Give each group 10 small cups (paper muffin cup, bathroom cup, or nut cup) and two large styrofoam cups. Keep extra containers handy in case any of the pumpkins have unusually large numbers of seeds.
5. Have students scoop the seeds from the pumpkins with their hands and place them on the construction paper labeled “ones.”

MATERIALS
1 large knife
1 pumpkin
3 sheets construction paper
tape
10 small cups (muffin cup, bathroom cup, or nut cup)
2 large styrofoam cups
6. Have students count the seeds into groups of ten, place them in the small cups and place the filled cups on the construction paper labeled "tens." When students have counted ten groups of ten they should dump those cups into the larger cups and place them on the construction paper labeled "hundreds."

7. Have students continue the activity until all the seeds have been counted. Then have them write and read the exact number of seeds in their pumpkins. Have students compare the exact numbers with their estimates.

ADDITIONAL ACTIVITIES
1. Roast pumpkin seeds. Wash them, and place them in a vegetable steamer with some water. Cover and cook for 30 minutes. Dry the seeds with a towel. Spread them out on a cookie sheet, brush with vegetable oil and sprinkle with salt. Bake the seeds in a preheated 300-degree oven for 30 minutes, or until golden. Serve them to students as a snack.

2. Save some of the pumpkin seeds in a jar or envelope to plant in the spring. Have students plant the seeds in paper cups and chart the growth of the plants. Let students take the seedlings home to plant them outdoors at the end of the school year. Pumpkins grow to maturity in about 100 to 120 days depending on the variety.

3. Make pumpkin seed art. Bake clean seeds in a 300-degree oven for 30 minutes, or until golden. Let the seeds cool completely. Provide students with tempera paint in autumn colors, and have them dip the pumpkin seeds in the paint. Let the seeds dry. Have students draw tree trunks with branches and glue seeds to the branches to make beautiful full trees.

4. Make pumpkin seed jewelry. Have students string the seeds with needle and thread while they are wet. Hang the strands to let them dry. After they have dried, provide students with tempera paint and have them dip the strands in the paint and hand to dry again. Advise your students that the paint will rub off and the seeds will become sticky in damp weather.

5. Have students draw Jack-o-lanterns, color them and use different kinds of seeds to make their features.

EXTRA READING
EVALUATION
Were the students able to understand the place value concept?
Did any group’s estimate come close to the actual number?