Guess and Count

Purpose

- To explore the compensatory principle
- To explore capacity

Materials

- Each pair of students has a large container (sand pail, ice cream container, gallon)
- Units of Measure: 2 materials to fill the containers such as Unifix cubes and ping pong balls or color tiles and golf balls. One item should be larger than the other item.
- Unifix cubes or snap cubes

Activity

1. Provide each pair of children with a large container.
   Note: This could be done as a rotating center and you would not need as many materials.
2. Ask, "How many _____ will it take to fill your container?"
3. One child should then proceed to fill the container with the unit of measure while the other child builds a tower of cubes, adding a cube each time a unit of measure is used.
4. When the measuring is complete, there will be a full container and a tower of cubes, indicating the actual measurement.
5. Provide them with another unit of measure—larger or smaller than the first.
6. One child should proceed to fill the container while the other child builds another tower of cubes, adding a cube each time a unit of measure is used.
7. After measuring their container with two different units of measures, have them write what they observed. They should write what material they measured with and how many it took to fill the container.
8. Children should notice that it took more of the smaller units to fill the container—compensatory principle.

Children need to explore this concept many times. Give students other containers and other units of measure and let them explore. Students can use actual measuring cups to measure.

Questions to ask

- Does the container hold more _____ or _____?
- Why do you think one number is larger than the other?
- If I walked around the room in baby step and then did it in giant steps which number would be larger? Why?