

## Investigations

Book: Bigger, Taller, Heavier, Smaller – Investigation 2

Session: 2

Page: 41-45

### 1. Concept:

- Comparing the capacity of containers
- Describing capacities that can't be measured exactly in whole units
- Observing relationships among shapes
- Developing vocabulary

### 2. CSOs:

- MA.0.1.4.2 select appropriate units and tools to measure and compare two objects or events according to volume.

### 3. Technique/Procedure/Introduction/Set:

- Distribute items in sand stations to partner groups.
- Recall previous lesson (Session 1) with students. Demonstrate if necessary. Have students compare two containers and explain the differences between the two. Have students estimate which container will hold more sand. Discuss how to fill containers (heaping or level cupfuls). Discuss what a “full container” means. Discuss using a  $\frac{1}{2}$  cup. Write on board an example (what if you had 12  $\frac{1}{2}$  cups of sand in the container?). Explain what that fraction means. Distribute Student sheet 5 and demonstrate how to use it.
- Students will complete experiment and record on student sheet 5. Have students record their results on the class chart paper. Discuss results as a class.
- Explain to students that they will be participating in Choice Time. Remind students of rules during this time.
- Show students outlines on Student Sheets 6-9. Explain to them that they will be looking at the sets of shapes, and they will need to use those blocks to figure out which set will fit the puzzle exactly. One set will fit it exactly, and the other set won't work. Demonstrate this with one of the outlines. Tell the students to try both sets of shapes. Explain how to fill out the student sheet, and tell the students they may work alone or with a partner.
- Students then participate in Choice Time. The two choices are “Which Holds More Sand?” and “Block Puzzles”.

### Closure:

- Discuss findings from data. Review that in the sand experiment, we found that there could be multiple results, but with the block puzzles, there was an exact answer. Ask students if they could find other ways to fill the block puzzles. Explain the in the next few days we will continue to work comparing containers.

### Homework:

- No homework. There is an extension activity. Read Math Counts: Capacity by Henry Pluckrose. Talk about the capacity of containers around the house/classroom. For example, which would have a bigger capacity: a bathtub or a sink?
- Students could create their own block puzzles.

### 4. Today's Math/Assessment:

- Today's Math page 161 "Which Holds More?" and page 162 "Fill the Shape"
- Teacher Observations
- Student sheet 5
- Student sheets 6-9

### 5. Materials:

- Pattern blocks (1 bucket per 6-8 students)
- Student sheet 5 (1 per student)
- Student Sheets 6-9 (1 of each per student)
- Tubs of sand
- Small containers of similar sizes
- 1 cup per person (for measuring)
- Newspaper to cover surfaces (optional)
- Chart paper
- Paper pattern blocks and glue, or pattern block stickers, or crayons (optional)

6. Vocabulary: fraction, experiment, estimate, data, range, capacity, leveling, heaping, set, hexagon, trapezoid, parallelogram, square, diamond, triangle, more, less, empty, full