

# Game 3M4: Capacity

**Strand: Measures**

**Strand Unit: Capacity**

**Curriculum Objectives Covered:**

- Estimate, compare, measure and record the capacity of a wide variety of objects using appropriate metric units (l, ml).
- Solve and complete practical tasks and problems involving the addition and subtraction of units of capacity (l and ml).

**Name:** “Guesstimation”

**Aim:** To estimate the capacities of various classroom objects and then measure the actual capacities. Guess as close as possible to win.

**Activity Area:** Classroom

**Duration:** 30 minutes

**Resources:**

- Whiteboard.
- A selection of everyday objects (one for each child in the class - see grid).
- Paper and pencils for teams to work out answers.
- 1 litre, 500ml and 250ml measuring containers (of different widths and heights) for each team
- Access to a water supply.

**Set Up:**

1. Before the game, the children should be shown volumes of 1 litre and 1 millilitre to help with their estimations. They should be shown, for example, a litre of milk to see 1 litre, and one drip from a tap to see approximately 1 millilitre.
2. The class should be split into equal sized teams of approximately 5 children per team.
3. The teacher projects/draws up the following type of grid onto the whiteboard. The list of objects should be relevant to the classroom environment.

Objects	Estimate	Actual capacity	Difference
Example: Capacity of a large mug	500ml	400ml	100ml
Capacity of a lunch box			
Capacity of an egg cup			
Capacity of a small milk carton			
Capacity of a large milk carton			
Capacity of a small cup			
Capacity of a small mug			
Capacity of a milk jug			
Capacity of a large cup			
Capacity of a large water bottle			
Capacity of a juice carton			
Capacity of a small water bottle			
Capacity of a drink can			
Capacity of a yoghurt bottle			
Capacity of a large bowl			
Capacity of a small bowl			
Capacity of a flask			
Capacity of a beaker			
Capacity of a butter tub			
Capacity of a biscuit tin			
Capacity of a pencil case			
Capacity of a washing up liquid bottle			
Capacity of a soap dish			
Capacity of a plant pot			
Capacity of a small bin			

### Start Playing:

1. Each team is allocated 5 objects from the list (or an amount equal to the number of players in the team).
2. Each team must come up with estimate capacities for their 5 objects. Although teams can confer, the players on each team should be responsible for estimating the capacity of 1 object each. It should be explained to the children that the winning team will be the team that estimates most accurately.
3. When the children are happy with their estimates, they should write them up on the whiteboard in the appropriate space on the grid.
4. Only after a team has filled in its estimates on the whiteboard should it collect its measuring containers. Each team collects a selection of measuring containers of different capacities (250ml, 500ml and 1 litre) and shapes (tall, wide and narrow).
5. Each child on the team fills his/her object with water.
6. The child then pours all the water from the object into an empty measuring container.
7. The child looks at the markings on the measuring container to measure the exact volume of water. This measurement is the capacity of the object.
8. As before, the measurements are then filled in on the grid on the whiteboard, with the teacher checking to make sure the measurement is accurate each time, and working with the children where necessary.
9. The children then go back to their teams.
10. Using the paper and pencils, each child must work out the difference between the estimate and the actual capacity of his/her object, by taking the smaller measurement from the bigger measurement.
11. The child then writes up his/her answer in the 'Difference' column on the classroom grid.
12. The children can also physically see the difference between their estimates and the actual capacities of their objects.
13. Each child should pour into a measuring container, the amount of water that he/she estimated to be the capacity of his/her object to be.
14. Then the child should start to pour this volume of water into his/her empty object. If the estimate was lower than the actual capacity, the child can see how much more water would be required to fill the object. If the estimate was higher than the actual capacity, the child can see how much excess water is left in the measuring container.
15. When all of the answers are written up in the 'Difference' column, the teacher goes through the answers on the whiteboard to ensure that they are correct.
16. The teacher explains that the smaller the difference, the closer that person was to guessing the actual capacity of his/her object.
17. Finally, the measurements in the 'Difference' column for the 5 objects of each team are added together.
18. The winning team is the team with the smallest answer i.e. the smallest combined difference between the estimates and the measurements of their allocated objects.