



MA_Class_Capacity_NoS

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| Teacher Education Design Principle + code: | 3. Teacher education should advance teachers' understandings about the nature of science and how scientists work, confronting stereotypical images of science and scientists. TE: NoS |
| Specific Teacher Outcome(s): | 3.1. Teachers should be able to advance children's understanding about the nature of science and how scientists work, confronting stereotypical images of science and scientists. 3.2. Teachers should be able to recognize young children's capabilities to engage with processes associated with the evaluation as well as generation of ideas in science and mathematics, since these processes are also important for the development of learner creativity. 3.3. Teachers should be able to use foster the processes of imagination, reflection and consideration of alternative ideas in supporting children's understanding of scientific ideas and procedures and development of creativity. |
| Factors linked with: | P: R and R; LA: Expl |
| Type of material (image – interview (int) – classroom extract (class): | Classroom extract (class) |
| Originating from: | |
| Country report : | D4.3 – report Malta |
| Case: | Case 5 |
| Episode: | 5.2 Capacity |
| Teacher: | Gillian |
| Age Group: | 7-8 |
| Selected episode present in D4.4 Appendix | No |



Conducting a scientific procedure involving predictions, estimations and testing whilst allowing space for children to generate ideas and evaluate own predictions



Testing predictions

The teacher has on the interactive board a table with volumes ($< 1l$, $1l$, $>1l$). A number of children are called out and the teacher asks them to estimate the volume of the container that she shows them. The children make their predictions and write it on the interactive board. The teacher then tells the children that they need to test it. The children fill the container with a capacity of $1l$ and pour this volume into the container. They notice that it is half full. The children realized that the volume is more than $1l$ and that their estimation was correct as they had placed it in the column of $>1l$.

Gillian: Let's see how many litres does it hold.

The teacher refers to the clothes fabric conditioner container of $5l$ capacity that they had used.

Gillian: How many litres does it have?

The children are unsure and suggest different values. They go on to pour more water, and then count the number of times they have poured $1l$ into the container.

Gillian: How many litres did we pour?

Child: 3 litres.

Gillian: How full is it?

Child: Half full.

Child 2: More than half-full.

Gillian: Where do we write it down?

Child: More than one litre, it holds more than $1l$ litre.

Gillian: How many litres in total?

Child: 5 litres.



The teacher now takes out a plastic coke bottle and asks the children:

Gillian: Do you think that the bottle has the same volume as this?

Points to the conditioner container

Child: No...

Gillian: How is it, more or less?

Child 2: It is less?

Gillian: How much volume do you think that you have here?

Child 3: 2 litres.

Child 2: 3 Litres.

Child 4: More.

Gillian: O.K, you now have to find out.

The teacher fills the 1 litre containers and the children take turns to fill in the coke bottle to find that its capacity is that of 2 litres. The teacher then moves to another container and they repeat the exercise.



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