

<b>Teacher Education Design Principle + code:</b>	15. Teacher education should promote teachers' use of group work to support children's inquiry processes and creative learning. <b>TE: GWork</b>
<b>Specific Teacher Outcome(s):</b>	15.3 Teachers should be able to organize group work, aligning ways of grouping children, task design, teaching and assessment strategies in different ways to promote collaboration amongst children in science and mathematics.
<b>Factors linked with:</b>	<b>G: SmallG;</b> <b>G: Abil;</b> <b>P: Colab;</b> <b>P:Dialog;</b> <b>A: Strat</b>
<b>Type of material (image – interview (int) – classroom extract (class):</b>	Classroom extract (class)
<b>Originating from:</b>	
<b>Country report :</b>	D4.3 – Belgium report
<b>Case:</b>	Case 5
<b>Episode:</b>	Measuring and Estimating
<b>Teacher:</b>	Els
<b>Age Group:</b>	6-7
<b>Selected episode present in D4.4 Appendix</b>	No

Fostering mathematics learning during group work, stimulating agency of the children using a work sheet



Four girls are working on the measuring and estimating assignment. They have a metre and a string of beads with a length of 1 metre. They all have a worksheet with two columns. In the first column are pictures of several objects; they have to select a similar object (in reality) in the classroom or in the corridor and then they have to estimate the length of these objects. After they have estimated the object, they have to measure it. They may choose themselves the real objects, so they have to select a door, a window, a corridor, a board ... They have to search for these objects in and outside the classroom.



**Girl 1** is putting the metre on the ground, just in front of the door.

**Girl 1** 'The other metre (the string of beads)'

**Girl 2** is bringing the string of beads next to the metre.

**Girl 1** 'No, not there.' She sees the girl isn't replacing the metre.

**Girl 1** 'Yes, ah so.' **Girl 1** is replacing the metre she is holding and brings it on top of the other metre.

**Girl 3** '2 meters'

**Girl 2** places the string of beads, and brings it next to the other metre. She says '2 metres'. She gives the string of beads to girl 3.

**Girl 1** 'Yes, 2 metres. I'm writing down 2 metres.'

They all are writing down the length on the worksheet.

**Girl 4** 'I have 2 metres.' She is looking at her worksheet.

**Girl 1** 'Oh, it was right, the door was right.' She is pointing to the estimated length on her worksheet. She looks at the worksheet of girl 2 and says.

**Girl 1** 'You have to erase it.'

**Girl 2** is doubting.

**Girl 4** 'That is noo ..ot'

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**Girl 1** 'No, you have to blot this out and write the length here' *Girl 1 herself is blotting out the estimated length on the worksheet of girl 2. Girl 2 and Girl 4 are watching. Girl 3 has measured the frame of the door alone and says to Girl 2 'Two metres' while pointing at the frame.*



This specific episode provides several opportunities for mathematics learning. It is an episode about estimating and measuring, and about using a metre. Some concepts and skills are refreshed before starting the corner work. Then children are given the time to practice their mathematical skills in a group. In fact the assignment could be seen as a short guided inquiry. They have to plan an investigation, they have to estimate, then they have to measure and observe, finally they have to communicate the results. The children are instructing and guiding each other. There is room and time for collaboration and agency, the teacher is standing back. One of the girls is taking the lead. They are also checking each other's process and results – form of peer assessment.



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