TEACHING AND LEARNING ABOUT MEASURING MASS AND CAPACITY IN THE INTERMEDIATE PHASE

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Mathematics Education Primary Programme

TARGET AUDIENCE: Intermediate Phase Teachers.

DURATION: 2-hour workshop

MAXIMUM NO. OF PARTICIPANTS: 20

MOTIVATION

A variety of external tests, such as Annual National Assessments and other systemic evaluations have shown that learners do not have the expected skills in measurement. This is possibly because many learners only get the opportunity to measure with rulers and that most other aspects of measurement are taught through calculation exercises. Few learners are taught how to read real instruments; nor the important concept of scaling, that underpins many of the questions that learners face in external tests. This workshop aims to look ways of sequencing measuring concepts, activities and tasks. It will also look at the relationship between the logic of the metric system and the place value system, as the basis for learning to convert between units.

CONTENT

The workshop will start by focussing on commonly accepted understanding of the ways in which children learn to measure. It will examine the ways in which this matches the suggested sequencing of content around measuring in the Curriculum and Assessment Policy Statement. (20 minutes: split between 10 minutes introduction, and 10 minutes consolidation of concepts)

Teachers will then break into groups, to work through a series of work stations on measuring mass and measuring capacity.

About 50 minutes will be spent on the workstation on mass:

- Workstations 1 & 2 will focus on the relationship between grams and kilograms and using groceries to teach and consolidate this relationship (Work Station 1: 10 minutes); Workstation 2 (20 minutes),
- Workstation 3 will focus on reading mass meters (20 minutes),

About 50 minutes will be spent on the workstation on capacity/ volume:

- Workstations 1 and 2 will focus on the relationship between litres and millilitres and using groceries to teach and consolidate this relationship (Work Station 1: 10 minutes); Workstation 2 (20 minutes),

Collins, H. (2013). Teaching and learning about measuring, mass and capacity in the Intermediate Phase. In Z. Davis & S. Jaffer (Eds.), *Proceedings of the 19th Annual Congress of the Association for Mathematics Education of South Africa*, Vol. 2. (pp. 15 – 16). Cape Town: AMESA.

- Workstation 3 will focus on reading measuring jugs, measuring cylinders, syringes etc. (20 minutes),

At the work stations there will be a focus on learner misconceptions and common learner errors. There will also be discussion about teaching measurement in the Intermediate Phase. At the end of the workshop, there will be a focus on the metric systems: ways of helping learners to do conversions between units.

ABSTRACT

This workshop offers Intermediate Phase Teachers the opportunity to consider ways in which they can help learners to understand the relationship between litres and millilitres, and the relationship between grams and kilograms. It also aims to help teachers understand the skills learners use to read mass meters and measuring jugs.

The workshop will start by focussing on commonly accepted understandings of how children learn to measure. It will examine the ways in which this matches the suggested sequencing of content around measuring in the Curriculum and Assessment Policy Statement. Participants will examine ways of sequencing measuring concepts, activities and tasks.