USING *GEOGEBRA* TO TEACH CIRCLE GEOMETRY

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TARGET AUDIENCE: FET teachers (Grade 10 – 12)

DURATION: 2 hours

MAXIMUM NO. OF PARTICIPANTS:

Maximum number 30 participants, but it will depend on number of computers in the computer lab. Each participant must have access to a computer for this session.

MOTIVATION

- To expose teachers how to integrate *GeoGebra* (dynamic software) in their teaching of Circle Geometry.
- To expose teachers to mathematics material that facilitates self-exploration and self-activity with *GeoGebra*.

CONTENT

Participants will:

- Explore software to familiarise themselves with the working of the software.
- Create activities to investigate and prove the theorems of the geometry of circles. Activities will cover the Grade 11 Circle Geometry (CAPS).

PROPOSED TIME ALLOCATION FOR WORKSHOP ACTIVITIES

Activity	Time
Short presentation on the need for learners to be active involve in the process of learning and the history of *Geogebra*.	10 minutes
Participants to familiarise themselves with the icons in *GeoGebra* that they will use during this session.	15 minutes
Creating of activities in *Geogebra* and investigate and prove the theorems.	1h15minutes
Related discussions and installation of software.	20 minutes

ABSTRACT

Circle Geometry can be done by pen-and-paper activities but with *Geogebra* (dynamic software) you can create in the same time far more activities to do more investigations. Dynamic software can be used to explore and visualise geometrical properties by dragging objects and transforming figures in ways beyond the scope of traditional paper-and-pencil geometry. "Learners must be exposed to meaningful problems and not given

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algorithms, definitions and rules. Few people know that mathematics is an activity. Little children are taught mathematics as an activity, but as they mature into rational beings, we are prone to teach them a well-organized prefabricated deductive system of mathematics, because rational beings may be supposed to understand deductive systems. You know that it does not work very well." (Freudenthal, Geometry between the Devil and the Deep Sea, 1971).