

# USING GAMES TO CONSOLIDATE CALCULUS RULES AND CONCEPTS

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**TARGET AUDIENCE:** FET Phase

**DURATION:** 2 hours

**MAXIMUM NO. OF PARTICIPANTS:** 30

*One of the challenges of teaching is finding the balance between developing understanding and practising skills. Often it is easier to make concept development interesting through visual representations or activities while practicing skills remains a tedious exercise. Using well designed mathematical games is one way of making the practice of skills less tedious and can, in some cases, be used to develop understanding.*

*In this workshop we will look at four games that can be used to teach calculus. The games address the need to convert expressions to an appropriate form before apply derivative rules; the difference between various rules (chain rule, product rule, quotient rule); the question whether two functions with the same derivative are necessarily the same; and the need to practice deriving functions.*

## **MOTIVATION FOR RUNNING THE WORKSHOP**

Participants will find this workshop useful because it will provide them with a means of engaging their learners in practicing some of the skills needed to comfortably differentiate functions. It will also provide them with a generic game that can be adapted to practice various skills.

## **DESCRIPTION OF CONTENT OF WORKSHOP**

A brief introduction (10min) will look at the difference between mathematical games that are useful and those that aren't.

The participants will be divided into small groups and each of the games will be played in turn. The first three games will be play for approximately 15 minutes each after which participants will have a further 10 minutes to discuss the concepts that the game is trying to address.

The last game will be allocated the remaining 35minutes as it can be adapted to practice various skills. After playing the game, participants will have the opportunity to discuss how they would adapt the game to allow their learners to practice a particular skill.

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At the end of the workshop, participants will be provided with the worksheets necessary for playing the four games in their own classes.

### **ACTIVITIES AND WORKSHEETS TO BE USED**

The games have been attached to the email. I am aware that the guidelines state that not more than two pages should be taken from the same source but I feel that the four games which are all shared on <http://busynessgirl.com/games/calculus/> are an excellent resource that teachers can use effectively in their classes.

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