

# **Undergraduate Math Club**

**Fall 2006**

**2<sup>nd</sup> floor Nesbitt Common Room**

**Thursday, November 9, 4:10-5:00pm**

**(free pizza and pop, as always)**

## **A Different Kind of Word**

**Kevin Wilson**

### **Abstract**

In mathematics a word is a sequence of symbols from a finite alphabet. In this talk, we will discuss some of the major results concerning words. We will focus on results about periodicity, essentially how often a word repeats itself. For example, the word murmur has period three while the word poppop has periods three and five (five because the initial and final "p"s line-up). For words of finite length we will introduce Fine and Wilf's Theorem and Guibas and Odlyzko's classification of all possible sets of periods a finite word can possess.

Finally, we shall discuss partial words (as conceived by Berstel and Boasson in 1999). This kind of word allows for various "do not know" symbols, a situation which often arises in real life. We will derive several results about the periodicity of partial words.