Module 4 Final Project
Due 24th November 2008

Use the techniques that you have seen in the lectures to answer the question asked by a direct calculation and by solving a differential model.

Prepare a poster display of the problem and your group's solution. Presentation of the posters will be during lecture time on 24th November in the MSC.

The poster should show the viewer, at least:

- A description of the physical context of the problem.
- The data, and the selected interpolation function that fits the data.
- An approximation of the solution using only the data given
- One, or more, improved approximation of the solution using the interpolation function.
- The best possible approximation (that Mathematica will allow) using the interpolation function.
- Derivation of a differential model of the quantities.
- The solution of the differential model.

The quality of the posters should be sufficient to be displayed at URCAS

At least one member of the group must stay with the poster during the presenation to answer any questions about the group's work. Other memebers of the group will view and evaluate the other posters on display. At the end of the presenation the posters should be handed to your professor, and by 5:00pm on Monday 24th November, the Mathematica notebook(s) that your group used to solve the problem must be placed attached to the assignment within Moodle.

Module 4 Project for Group S2G4
Due 24th November 2008

1 Research Paper

Authors M.D. MacNeil, M.R. Haferkamp, L.T. Vermeire, J.M. Muscha

Year 2008

Title Prescribed fire and grazing effects on carbon dynamics in a northern mixed-grass prairie

Journal Agriculture, Ecosystems and Environment 127 (2008) 66–72

Web-site `www.elsevier.com/locate/agee`

2 Data

Month (0=January)	Photosynthetically Active Radiation (PAR, μmol m^{-2} s^{-1})
3	1122
5	1368
9	575
16	1591
18	1529
20	839

3 Interpolation Function

Use the most appropriate of the interpolation functions that you fitted to this data in your Module 3 project.

4 Question

Estimate the total molar mass of quanta radiated over a rectangular patch of grass land measuring 3m by 4.5m in a three year period from the start of this study.