Using Climate*prediction*.net with *Advancing* Physics

The climate*prediction*.net project illustrates several important aspects of modelling in science. There are several links with the *Advancing* Physics AS/A2 course:

Ch. 1: Imaging – run the model and watch the animations – what are the spatial and time resolutions of the model?

Ch. 9, 10: Iterative modelling

Ch. 13: Gases and thermal physics – gas laws and specific heating capacity

Ch. 19: Physics coming together with engineering, astronomy, chemistry and biology; how physics is important to society and its future.

Chapter 10, section 1

Lesson 1 – examples of modelling.

The textbook and CD-ROM include Worldmaker models. This is a suitable place to show climate*prediction*.net running on a computer, and to encourage students to install it on their own machines. Discuss briefly what the model is doing and why; revise the ideas behind iterative modelling.

Chapter 10, conclusion

Use *Climate modelling using Modellus*. This has more 'modelling' in it than specific physics from the *Advancing* Physics course in it.

Alternative places to use this:

- At the end of Chapter 9 when the iterative process is fresh in pupils' minds.
- In Chapter 13
- At the end of the A2 year, to revise this important part of the AS course in preparation for the synoptic papers.
- There are themes in this project that could be extended to form a very good R&R topic for a more able pupil.

modellus_climate_model.pdf

modellus_climate_model.mdl

Other relevant resources from climate*prediction*.net

The simple climate model is also available using Excel or just paper & calculator.

Other resources in this section use advanced level physics knowledge to examine the climate*prediction*.net experiment results.

Advancing Physics, an Advanced-level course from the Institute of Physics:
http://advancingphysics.iop.org