Using Climateprediction.net with Advancing Physics

The climateprediction.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 climateprediction.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 climateprediction.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 climateprediction.net experiment results.

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