



CEES Day Course Information: ENERGY WORKS

COLDHAM WIND FARM

KS3, KS4 and KS5 Science / Geography / PSICHE



<p>Learning Objectives During this Day Course students should learn:</p> <ul style="list-style-type: none"> ✓ How electricity is generated by renewable means in a real context. ✓ To recognise dangers associated with electricity and industrial installations. ✓ To compare power generation by renewable and conventional means. ✓ To recognise ways in which people and communities can reduce or mitigate the effects of climate change. ✓ To understand their responsibility to maintain a sustainable environment for future generations. ✓ To evaluate experimental materials and processes. <p>(Some objectives are dependent on choice of activities)</p>
<p>Students will also:</p> <ul style="list-style-type: none"> ✓ Learn safely in a new environment. ✓ Gain an appreciation of the environment and understand their role in caring for it.

<p align="center">Day Course Programme</p>
<p>Introduction: A CEES teacher will welcome your group to the Energy Works Education Centre at Coldham and describe the programme and the learning objectives.</p>
<p>Session A: This session will begin with an introduction to the site and to renewable energy and wind turbine technology. Students will then view the on-line management system used to control the wind turbines. Following a briefing on safety, students will be issued with safety hats and glasses and will then travel by coach to the control buildings and wind turbines for a close up view of the turbine blades and tower. Activities on site include the measurement of site parameters to look at the positive aspects of wind power generation in context with its environmental impacts.</p>
<p>Session B: After lunch at the education centre, the following options are available. Alternatively, options RB and CC can be delivered as workshops in school:</p> <p>Option SB: Visiting Sutton Bridge Gas Fired Power Station and using hands-on displays to explore electricity production using magnets, scale models and an exercise bike (maximum 30 students per class).</p> <p>Option RB: Investigating renewable energy using solar and/or wind turbine mini-kits to find the optimum conditions for heat or electricity generation.</p> <p>Option CC: A workshop to develop critical thinking around either the issue of Climate Change or wind farm planning & development, and actions to be taken on a school community scale and beyond.</p> <p>NB: Please indicate your choice of option on the booking form</p>
<p>Plenary: The group will reflect on their day and consider how well the learning objectives have been met.</p>
<p>Note: The actual programme will be designed with the subject teacher according to the key stage and subject focus. It may vary depending on number and needs of students, length of visit and weather conditions.</p>

<p>Adult : Pupil ratios For this day course CEES' recommended ratio for safety is 1 : 15 Additional adults may be needed with classes where individual pupils need 1 : 1 support</p>
<p>Other information See also separate guidance notes on safe and effective day courses. To comply with safety regulations on site: - Pupils must wear long sleeved tops and trousers, and sensible shoes - The coach must stay on site in case of emergency.</p>

Relevant extracts from CEES risk assessments	
See also separate guidance notes on safe and effective day courses	
Hazard	Control measures
Severe weather	<ul style="list-style-type: none"> • CEES staff are aware of daily forecast. • Access to the wind farm during electrical storms or wind speed greater than 25m/s is not permitted. • Alternative venues or activities are substituted if weather conditions are particularly unfavourable. • In extreme cases, where guidance notes on clothing (see left and separate notes) have not been complied with students may be excluded from activities.
Proximity to electrical system and apparatus	<ul style="list-style-type: none"> • Students will not have access to the inside of turbine tower or control room.
Rough ground, slopes and steps	<ul style="list-style-type: none"> • Students and adults are made aware of expected standards of behaviour and, for example students are instructed to walk, not run, to look ahead, and to stay close to supervisory adults. • Advice is given on suitable shoes prior to visit
Working farm: Farm roads, equipment, land working	<ul style="list-style-type: none"> • Students are transported around the site by coach • The Farm manager is notified of the visit and of the need to control work in proximity to students • Adults supervise directly, walking beside their group