Wind energy

Name:

Date:

Class:

WESTMILL WeSET SUSTAINABLE ENERGY TRUST

Starter:

'A windy day'. Prompt children to think about the role wind plays in our lives including how we use it for recreation and sport.

Main activity:

Presentation—Lesson 4 Wind energy. Using slides, key questions, activities and video clips to elicit plenty of discussion, introduce the different types of energy.

Plenaries and assessment:

Use worksheet activities and review as a class on the board/screen (slides 6, 13, 22) to consolidate learning.

AFL:

Use questions in presentation for formative assessment. Worksheet activities reinforce this and provide a tool to assess understanding and provide a record of AFL.

Success criteria:

Children will have a foundation understanding of the harnessing of wind energy as a renewable resource. If linked to a site visit, children will be more able to engage with the tour and with the guide's questions.

Differentiation:

Involve all children in discussion using differentiated questioning - colour coded in teaching guide **All** **Most** **Some**. Where possible use visual aids to aid understanding. Video clips can also help with this.

To arrange a site visit, please go to http://www.weset.org/?page_id=126
Or email education@weset.org

Program of study:

Energy, electricity and renewable energy sources.
This may be linked to a trip to Westmill wind and solar.

Key learning objectives, children should:

- Be aware of historical uses of wind energy
- Explain how and why wind can be harnessed
- Understand how a wind turbine transforms kinetic energy into mechanical and then electrical energy
- Be able to identify some of the key parts of a wind turbine

Cross curricular links:

Art and Design – proportion, aesthetic appreciation

Design and Technology - mechanisms, structures, systems, manufacture and construction

English - vocabulary, discussion and debate, poetry

Geography – physical geography, sustainability, points of a compass

History – traditional farming (windmills)

Maths – dimensions, scale, weights

Science - kinetic energy, mechanical energy, electricity

Key vocabulary:

Wind energy, kinetic energy mechanical energy, electrical energy, conversion, transformation, resource, weathervane, windsock, compass, cardinal points, inter-cardinal points, anemometer, knots, transformer, yaw system, nacelle, blades, rotor hub, nose cone, rotation, substation, onshore, offshore

Resources:

Presentation

Linked video clips

Detailed delivery guide

Worksheet and answers

Further suggestions for resources that may aid learning and understanding can be found in the detailed delivery guide