Unit 13 Fairground Rides **Year 5** **Term 1**

Purpose of Unit

This unit enables children to learn about gears, and learn more about control using electricity and an electric motor. Further work will be done on computer control. The focus of the unit is to design and make a model of a fairground ride but it could be adapted to suit any product in which an electric motor produces a rotating movement, e.g. a conveyor belt in a factory or supermarket. It is suggested that this unit is undertaken during the Autumn Term as the annual Neath Fair could be used as a starting point/stimulus.

Key Skills

Literacy
Children will be encouraged to discuss their ideas. They will be taught appropriate vocabulary e.g. *rotate, framework, circuit, gearing up/down, mechanism, computer control.*

Numeracy

Children should be taught the meaning of *revolve, rotate.* They will need to measure accurately. They will need to be taught ratio (gears) and how to calculate gear ratios.

ICT
A computer, control box and suitable software can be used to control the ride e.g. Co-co, Economatics, Deltronics. A graphics program can be used to decorate the rides.

Pupils will

- have investigated everyday products where gears are used e.g. *hand whisk, toy cars, bicycle gears;*
- have learnt about gears and how they can be used to speed motors up or slow them down;
- have learnt how an electric motor and gears can be used to produce rotary movement;
- have generated ideas and designed a fairground ride which rotates using an electric motor and gears;
- have made a working fairground ride accurately and finished it to a high standard;
- have controlled their product using a computer, control box and suitable software.

Common Requirements

The following common requirements, in addition to the three key skills mentioned above, will be covered during the teaching of this unit – Curriculum Cymreig (Neath Fair), Problem-solving Skills, Creative Skills (New ideas for rides and decorating them) and P.S.E.(Working in groups)

Health and safety

Explain to the children that they must not experiment with mains electricity. It is not advisable to use rechargeable batteries for circuits – in the event of short circuit they could get very hot and may cause injury. Children should not investigate the rotating parts of machinery without adult supervision.