BROMPTON

Cycle Routes:

Extended Design and Technology Projects for 11–19

Introduction

The Brompton *Cycle Routes* projects offer students experience of the design process from initial brief through market and product research, generating design ideas, modelling/trialling, production planning and evaluation. The activities are presented in the context of the Brompton Bicycle Company and offer opportunities to research a real company and its products and markets. There are five *Cycle Routes* for students to follow; the tasks and learning outcomes are the same in each but the specific challenges have been chosen to reflect the five strands of the Design and Technology curriculum or GCSE exam syllabuses.

For students following the Manufacturing and Product Design Diploma programme the projects offer an opportunity to develop a practical understanding of a real company, its products and markets. Extensive Brompton case study material on the Diploma Support website provides opportunities for extension activities and can be used to support a Diploma project.

Go to www.diploma-support.org and view the Inside Work resources for Manufacturing and Product Design

Schools and colleges in Scotland, Wales and Northern Ireland will find the projects useful for areas of the curriculum addressing technology and the world of work.

The *Cycle Routes*

Each *Cycle Route* is presented as a set of Teachers' Notes and Lesson Plans supported by PowerPoint presentations for use with students. Optional Student Workbooks can be downloaded and used to record students' work if appropriate.

Schemes of Work

The *Cycle Routes* have been developed as six 1½-hour lesson modules with supporting homework, and could be delivered as a half term scheme of work or as part of a focused study week.

Content and Teaching Activities

Lesson 1: Introduction – explores Brompton's unique selling point (USP) and philosophy:

- the company
- its target market
- the functionality of the Brompton fold-up bicycle; how does it work?

Students will also explore:

- drafting a product specification for their project
- peer assessment of research.

Lesson 2: Designing – explores designing solutions and evaluating these against specification:

- developing ideas and designs through modelling
- looking at what makes a good final design drawing
- target setting by students
- evaluation.

Lesson 3: Planning and Making – explores:

- using a Gantt Chart
- discussing design issues – form vs. function
- identifying problems with the design.

Lessons 4 and 5: Making – explores:

- using modelling skills and how to improve them
- developing designs and progressing with making
- completing practical work.

Lesson 6: Evaluation – explores:

- using photographs of practical work for evaluation
- completing self evaluations
- peer evaluation.

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Objectives and Intended Learning Outcomes

- All students, through investigation and research, will design, manufacture and evaluate a product suitable for use with Brompton cycles.
- Some students will have a comprehensive design folio of alternative solutions with a good outcome which has been fully evaluated against their specification.

Differentiation

Lower: Peer design work; greater emphasis on drawn and construction skills. Evaluate using writing frames.

Upper: Designs influenced by in-depth research. Good use made of materials available. Evaluations reflect how student makes reference to specification.

Assessment Opportunities

- Peer assessment for continuous design cycle.
- Positive praise and comments in workbooks.
- Teacher assessment at topic end.
- Third-party assessment.

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Produced by: Magenta Project Management Ltd, 01353 741222
Authors: Gerald Dare, Lampton School, Hounslow
Pan Panayiotou, Ash Manor School, Surrey
Designer: Paula Sayer
Photographs: Fotolia