

TEACHERS NOTES

ABOUT TEP

The Technology Enhancement Programme, funded by the Gatsby Charitable Foundation and managed by the Gatsby Technical Education Project, has the broad aim of enhancing and enriching technology education throughout the UK. It has a particular interest in supporting designing and making in a rapidly changing modern world and strongly believes in the principle of “learning through doing”.

TEP is a rapidly growing organisation that offers:

- *expert subject advice through its central team of advisers,*
- *INSET and a national Summer School,*
- *regular updates on developments in technology education,*
- *rapid access to a wide range of unique physical, printed and multimedia resources.*

ABOUT TEP PUBLICATIONS

All TEP publications are photocopiable and do not prescribe what should be taught or how it should be taught. TEP has absolute confidence in the professional judgement of teachers to selectively copy or edit the material as they believe appropriate.

The book contains five project outlines or narratives which follow a similar structure:

- *Overall subject context*
- *Design brief*
- *Specification*
- *Design constraints*
- *Guide to design and manufacturing*
- *Evaluation*

These project elements are in the hands of the teacher who might, for example, want to set a very specific context, an alternative design brief, or limit (or widen) the resources available.

The *bookmarks* in the right hand margin are placed there as a brief guide to each project. They highlight the structure of each project, provide references to Study Files and, where appropriate, flag up maths and science opportunities.

ABOUT ELECTRONICS

In *Electronics*, there is a clear and consistent systems approach using the concepts of INPUT, PROCESS, OUTPUT. There is also a Study File on the use of Crocodile Clips software for circuit simulation and a sample disk including reference to three of the projects.

In the context of Electronics, TEP wants to enable pupils to design from first principles at the earliest opportunity. In practice, this means circuit design and construction with a very low component count for younger pupils - possibly involving just one or two active components at Key Stage 3. TEP believes that a pupil who can then design different (albeit less ambitious) circuits based on genuine knowledge and understanding has a better foundation for learning and the development of diagnostic skills. The use of a single modern device such as a power MOSFET, gives even younger pupils exciting and wide-ranging opportunities for designing and making useful systems. Understanding its function as a basic electronic "switch" then points to its possible application in a variety of different contexts.

In Electronics each project is presented as a structured design and make task designed to occupy a nominal 5-10 hours of curriculum time. Each project provides basic information, calls for some investigation but also demands that pupils make some fundamental design decisions.

TEP CRITERIA

1. To raise the quality of manufacture of electronic devices within pupils' work in the age range. The material is presented so that a TEP pupil can follow a structured approach to circuit construction but, at the same time, make significant design decisions. Such an approach ensures that every TEP pupil achieves a quality manufactured item and a better understanding of principles and components.
2. To encourage pupils to apply industrial standards and procedures wherever possible within the constraints of school technology. The core units are supported by industrial examples from the industry links of TEP schools. In this way, construction work in the classroom is referenced to the reality of industrial procedures through TEP school case studies.
3. To give a deeper understanding of the various stages of construction through mathematical and scientific activities. Some of these activities are essential to the construction tasks, while others are possible extensions to units within particular textbook.

Components Suppliers

Inclusion of suppliers in this list does not imply a recommendation in terms of quality or value for money. Most of the components are common electronic components and may be purchased from a wide range of other suppliers.

Maplin

Maplin Professional Services (MPS)
PO Box 777
Rayleigh
Essex SS6 8LU
Enquiries: 01702-552961
Orders: 01702-554171
Fax: 01702-553935

Rapid

Rapid Electronics Ltd
Heckworth Close
Severall Industrial Estate
Colchester CO4 4TB
Tel: 01206-751166
Fax: 01206-751188

RS

RS Components Ltd
PO Box 99
Corby
Northants NN17 9RS
Enquiries: 01306-201234
Orders: 01536-202201
Fax: 01536-201501

Farnell

Farnell Electronic Components Ltd
Canal Road
Leeds LS12 2TU
Sales: 01532-636311
Fax: 01532-633411

Middlesex Teaching Resources

Middlesex University
Technology Education Centre
Trent Park
Bramley Road
London N14 4YZ
Tel: 0181-447 0342
Fax: 0181-447 0340

