

# 3 ELECTRIC AND MAGNETIC CIRCUITS

## 3.1 Vocabulary

stress within words • prefixes

**A** Discuss these questions.

- 1 What is an *electric circuit*?
- 2 What circuit elements do you know?
- 3 Draw an example of a simple circuit, showing the different elements.

**a** battery calculations circuit  
conductor current equation  
measurement multiplication  
potential proportional  
resistance terminals

**B** Study the pictures on the opposite page.

- 1 What does each picture show? Talk about each picture using a word from box a.
- 2 Which of the pictures show examples of electric circuits? Which show elements of circuits? Can any of the other words be used in connection with electric circuits?

**C** Look at the words in box a.

- 1 Underline the stressed syllable in each word.
- 2 Which word has the same stress pattern as *engineering*?
- 3 Sort the other words into groups according to their stress patterns.

**D** Complete each sentence with a word from box a. Change the form if necessary.

- 1 Copper is a very good \_\_\_\_\_ of electricity.
- 2 The straight line on the graph shows the \_\_\_\_\_ relationship between the two quantities.
- 3 \_\_\_\_\_ flows around the circuit.
- 4  $3 + x = 5$  is an example of an algebraic \_\_\_\_\_.
- 5 The sign for \_\_\_\_\_ is 'x', as in  $3 \times 4 = 12$ .
- 6 Electrical engineers make a lot of \_\_\_\_\_ as part of their work.
- 7 Instruments that make \_\_\_\_\_ include the ohmmeter and the voltmeter.
- 8 Electric \_\_\_\_\_ is the energy required to move a unit electric charge to a particular place in a static electric field.

**E** Study the words in box b. Find the prefix and try to work out the meaning in each case.

**b** photovoltaic    non-linear    multimeter    reproduction    degeneration  
photodiode    non-repairable    multielement    regeneration    demagnetize  
phototransistor    non-resonant    multiloop    recur    deconstruct

**F** Complete each sentence with a word from box b. Change the form if necessary.

- 1 The graph doesn't show a proportional relationship so it is \_\_\_\_\_.
- 2 The experiment used a \_\_\_\_\_ to measure voltage, current and resistance.
- 3 The quality of the \_\_\_\_\_ of music on an mp3 player can depend on the earphones you use.
- 4 If you drop a magnet, you may \_\_\_\_\_ it.
- 5 Solar panels use \_\_\_\_\_ cells to generate electrical energy.
- 6 An old microwave oven is an example of a \_\_\_\_\_ system – if it doesn't work, throw it away and buy a new one.