

New resources for Edexcel 360Science

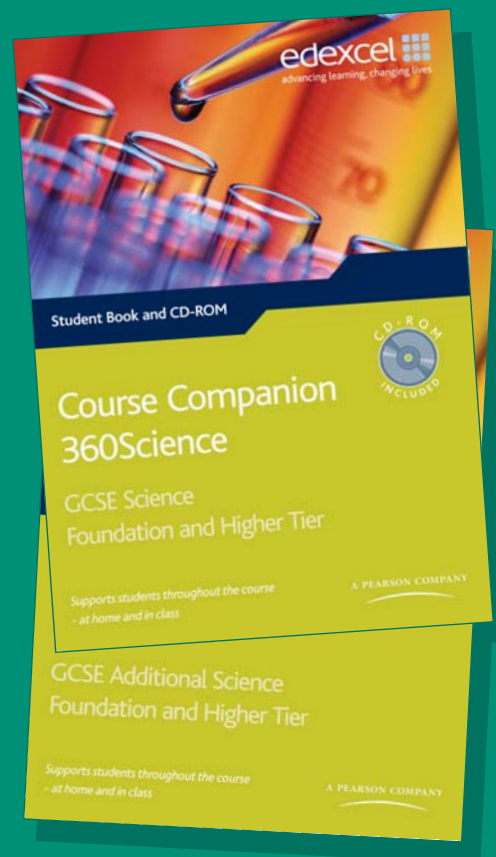
To the Head of Science

New *Course Companions* – support and guidance for students throughout their GCSE Science and GCSE Additional Science courses

Resources offer:

- easy to learn summaries of all the key topics
- useful tips from top examiners
- practice questions to test understanding
- exam-style questions with answers and examiner's advice
- personal profile to help students identify revision priorities
- clear overview of the new specification and assessment requirements.

 **Student books include CD-ROM**



Marketing Department
FREEPOST ANG2041
Harlow, Essex
CM20 2YF

Course Companions: the ideal supplement for students following Edexcel's new 360Science specification for GCSE Science and GCSE Additional Science

Follows the new specification

Interesting questions taken from the specification to stimulate thought

Clear, brief summaries of key facts for each topic

Diagrams to aid understanding

B1h.3 Electrical and chemical signals

1 The Nervous System

Have you ever wondered?
How does my brain tell my body what to do?

Key facts

- The brain and spinal cord make up the central nervous system (CNS).
- Sensory neurones carry electrical impulses from receptors in the sense organs to the CNS.
- The CNS sorts out (coordinates) the incoming information and sends out impulses to effector organs along motor neurones.
- Impulses travel very quickly through our neurones and allow us to respond very rapidly to changes going on inside and around us.

The CNS consists of the brain and spinal cord

Electrical and chemical signals B1h.3

• Certain disorders affect how the brain works.

Disorder	How it affects the brain
Stroke	A blood clot may prevent oxygen getting to brain cells. Cells become damaged or could die.
Tumours	These are cells which divide uncontrollably. They put pressure on delicate brain cells and can interfere with electrical impulses, causing unconsciousness and seizures.
Parkinson's disease	Communication between neurones is disrupted. Muscle cells don't receive clear signals and they produce jerky movements.
Grand mal epilepsy	Random signals are sent out by the brain to the body which may cause unconsciousness and uncontrolled movement (seizures).

Definitions

- Central nervous system (CNS) the brain and spinal cord
- Brain an organ that coordinates the actions of the body
- Epilepsy too much electrical activity in the brain - causes a seizure

Examiner's tips

- Students often state that nerves (neurones) send 'messages'. Although this is true in a sense, it does not distinguish between electrical or chemical messages so you would not gain any marks for this answer in an exam. Always state that neurones transmit or carry impulses or electrical signals.

Can you answer these questions?

- What is the CNS made up of?
- What is the role of the brain in the CNS?
- Name the type of neurone that carries impulses to the brain.
- Explain how grand mal epilepsy affects the brain.

Did you know?

- A typical computer would have to be a million times more powerful to perform like the human brain.

Look on the CD for more exam practice questions

2 Sense Organs

Have you ever wondered?
Why we can get an electric shock from electricity in our home but not from the electricity in our body.

Key facts

- Sense organs contain special cells called receptors.
- Receptors are sensitive to any changes that occur inside or outside of our body.

Technical terms are explained clearly

Advice from top examiners on how to gain maximum marks

Short questions to test understanding, with answers at the back of the book

More exam-style questions and answers on the CD-ROM

Quirky facts to bring the topic to life

Sample spread from GCSE Science Course Companion

Student CD-ROM with:

- exam-style questions, answers and examiner's comments
- personal profile tool to highlight revision priorities
- complete text of the book.

A PEARSON COMPANY

Teacher's CD-ROM contains networkable version and site licence of both GCSE Science and GCSE Additional Science Student CD-ROMs and also includes the complete specification.

To place a firm order, simply add the quantity required in the QTY column. To request a copy on approval (A), simply tick the appropriate box. Return this order form (or a photocopy) to our FREEPOST address: Marketing Department, FREEPOST, ANG2041, Harlow, Essex CM20 2YF. Alternatively, fax this form to 01279 414130, call FREE on 0800 579 579 or email: customer.orders@pearson.com.

Please quote ED06-491 when ordering

Title	IBSN	Price	A (✓)	Qty	Total
GCSE Science Course Companion: Student Book and CD-ROM	(1) ISBN 978-1-84690-158-4	£6.00 (inc VAT)			
GCSE Additional Science Course Companion: Student Book and CD-ROM	(2) ISBN 978-1-84690-160-7	£6.00 (inc VAT)			
Science GCSE Course Companion: Teacher's CD-ROM	(3) ISBN 978-1-84690-159-1	£111.63 (inc VAT)	N/A		
TOTAL PRICE					

Please complete your school details below:

Name _____

Position _____

School name _____

School address _____

Postcode _____

e-mail address _____

I enclose a cheque for £ _____ made payable to Pearson Education

Please invoice me. My official school order number is _____

For credit/debit card orders, please call 0800 579 579 and quote the reference code above.

To order further copies of this leaflet for your school or centre, please contact Linney Direct, Adamsway, Mansfield, Nottinghamshire, NG18 4FN or on 01623 477736 and quote zcode Z018517 when you order.

Edexcel Course Companions are distributed by Pearson Education. Offer is subject to status. Prices and information are correct at time of going to print but may change without prior notice. We reserve the right to change or withdraw the offer at any time. Prices are provisional prior to publication. Any personal information provided by you to Pearson Education UK Limited through your completion and return of this order form will only be used for identifying areas of interest, updating customer records and improving products. It will also be used to advise you of other products and services unless you object by ticking the box . The information you submit will otherwise be kept confidential. It will be processed by means of a computer database or otherwise, by us or on our behalf under strictly regulated conditions in accordance with the provision of the Data Protection Act 1998. Please direct enquiries to: Nicola Selwood at Pearson Education UK Limited, Edinburgh Gate, Harlow, Essex CM20 2JE. Pearson Education Limited Registered Office Edinburgh Gate, Harlow Essex CM20 2JE. Registration Number 872828. Registered in England and Wales.