Learning And Teaching Secondary Science With Ict

This practical and accessible workbook is designed to support student teachers as they develop their basic teaching skills and increase their broader knowledge and understanding for teaching science. Newly qualified and beginning teachers should also find it useful. It contains all the advice, guidance and resources new and student science teachers need to reflect on and develop their teaching practice, helping them to plan lessons across the subject in a variety of teaching situations. Helpful features include: case studies examples of pupils' work examples of existing good practice a range of tried-and-tested teaching strategies photocopiable resources and training materials activities in each chapter to help student history teachers analyse their learning and performance web links for further reading on evidence-based practice.

This book looks at the purpose and pedagogy of STEM teaching and explores the ways in which STEM subjects can interact in the curriculum to enhance student understanding, achievement and motivation. By reaching outside their own classroom, teachers can collaborate across STEM subjects to enrich learning and help students relate school science, technology and maths to the wider world. Packed with ideas and practical details for teachers of STEM subjects, the new revised edition of this book: ? considers what the STEM subjects contribute separately to the curriculum and how they

relate to each other in the wider education of secondary school students; ? describes and evaluates different curriculum models for STEM; ? suggests ways in which a critical approach to the pedagogy of the classroom, laboratory and workshop can support and encourage all pupils to engage fully in STEM; ? addresses the practicalities of introducing, organising and sustaining STEM-related activities in the secondary school; ? looks to ways schools can manage and sustain STEM approaches in the long-term. This new revised edition is essential reading for trainee and practising teachers, those engaged in further professional development and all who wish to make the learning of science, technology, engineering and mathematics an interesting, motivating and exciting experience for their students.

Understanding Learning and Teaching in Secondary Schools has been specifically researched, written and developed to inform, support and guide anyone training to become a secondary teacher today. This comprehensive new text strikes a balance between the depth of theory covered in the book and its practical application in the classroom. The authors introduce and explore key ideas and issues in an accessible, highly readable way, inviting you to reflect on your own practice and challenge both your own and others' thinking.

The perfect companion to help you crack some of secondary science's most challenging concepts in your teaching. Secondary science teaching is a heroic task, taking some of humanity's greatest discoveries and explaining them to the next generation of students. Cracking some of the trickiest concepts in biology,

chemistry and physics, with walkthrough explanations and examples inspired by direct instruction, this book will bring a fresh perspective to your teaching. · 30 key concepts explored in depth · Understand what students should know before and after the lesson · Tips and tricks offer detailed advice on each topic · Checks for understanding so you can test your students' knowledge Adam Boxer is Head of Science at The Totteridge Academy in North London. Heena Dave was Head of Science at Bedford Free School. Gethyn Jones is a teacher of physics at an independent school in London

This book takes a practical approach to improving secondary science education with the use of Information and Communication Technology (ICT), while considering the broader educational issues that inform and underpin the approach. The material is presented from a teacher's perspective, and explores issues such as the selection of resources; lesson planning; the impact of ICT on classroom organization; and how ICT affects assessment. With topics ranging from using the Internet in school science to handling and interpreting data, Teaching Secondary Science with ICT is invaluable in helping teachers to make the most effective use of the ICT 'tools' available to them. This practical book is essential reading for anyone involved in science education, including trainee teachers, practising science teachers, and their tutors and mentors. It is particularly useful to support a school science department's internal professional development programme.

The fourth edition of Teaching Secondary Science has been fully updated and includes a wide range of new

material. This invaluable resource offers a new collection of sample lesson plans and includes two new chapters covering effective e-learning and advice on supporting learners with English as a second language. It continues as a comprehensive guide for all aspects of science teaching, with a focus on understanding pupils' alternative frameworks of belief, the importance of developing or challenging them and the need to enable pupils to take ownership of scientific ideas. This new edition supports all aspects of teaching science in a stimulating environment, enabling pupils to understand their place in the world and look after it. Key features include: Illustrative and engaging lesson plans for use in the classroom Help for pupils to construct new scientific meanings M-level support materials Advice on teaching 'difficult ideas' in biology, chemistry, physics and earth sciences Education for sustainable development and understanding climate change Managing the science classroom and health and safety in the laboratory Support for talk for learning, and advice on numeracy in science New chapters on e-learning and supporting learners with English as a second language. Presenting an environmentally sustainable, global approach to science teaching, this book emphasises the need to build on or challenge children's existing ideas so they better understand the world in which they live. Essential reading for all students and practising science teachers, this invaluable book will support those undertaking secondary science PGCE, school-based routes into teaching and those studying at Masters level.

So, you have passion for your subject and you get to

work with some of the funniest, most surprising and exceptional students. But teaching science isn't always a walk in the park. How do you get students to think scientifically, remember all of those key words and not get acid in their eyes? Secondary Science is chockfull of workable ideas for the secondary science classroom. Ditch the stereotypical view of a science teacher: white coat, slides, teaching the limewater test to the same class for the fifth year in a row, and discover new and creative ways to inspire the next generation to use science. Areas covered include: the big ideas in science, scientific skills and knowledge, curriculum, practical work, difficult topics, differentiation, assessment, feedback and the science of memory and learning, including the spacing effect and interleaving. The book is packed with: advice about teacher talk, fun science games, ideas for developing scientific literacy, ideas for embedding mathematical skill in science, advice for extended writing in science, advice to make practical work safe, meaningful and worthwhile, and top tips for teaching the difficult topics that students tend to dislike! Catrin offers tips for teaching areas of the science curriculum including electricity, evolution and balancing equations. Suitable for all teachers, including NQTs and experienced teachers who are looking for new ideas. If you are looking for quick and easy ideas to make science fun and relevant, while ensuring that all students are successful and confident in your lessons, and not overloaded with facts, then this book is for you.

This book focuses on the talk of science classrooms and in particular on the ways in which the different kinds of

interactions between teachers and students contribute to meaning making and learning. Central to the text is a new analytical framework for characterising the key features of the talk of school science classrooms. This framework is based on sociocultural principles and links the work of theorists such as Vygotsky and Bakhtin to the day-to-day interactions of contemporary science classrooms.

What skills are required of secondary student physical education teachers? What are the key areas that these student teachers need to understand? How can current challenges be addressed by these student teachers? Learning to Teach Physical Education in the Secondary School combines underpinning theory and knowledge with suggestions for practical application to support student physical education teachers in learning to teach. Based on research evidence, theory and knowledge relating to teaching and learning and written specifically with the student teacher in mind, the authors examine physical education in context. The book offers tasks and case studies designed to support student teachers in their school-based experiences and encourages reflection on practice and development. Masters level tasks and suggestions for further reading have been included throughout to support researching and writing about topics in more depth. This fully-updated third edition has been thoroughly revised to take into account changes in policy and practice within both initial teacher education and the National Curriculum for Physical Education. The book also contains a brand new chapter on the role of reflective teaching in developing expertise and improving the quality of pupil learning. Other key topics covered include; lesson planning, organisation and management observation in physical education developing and maintaining an effective learning

environment inclusive physical education assessment developing wider community links using ICT to support teaching and learning in physical education Learning to Teach Physical Education in the Secondary School is an invaluable resource for student physical education teachers. Learning to Teach Using ICT in the Secondary School offers teachers of all subjects a comprehensive, practical introduction to the extensive possibilities that ICT offers pupils, teachers and schools. Under-pinned by the latest theory and research, it provides practical advice and guidance, tried-and-tested examples, and covers a range of issues and topics essential for teachers using ICT to improve teaching and learning in their subject. The third edition has been fully updated in light of rapid changes in the field of both ICT and education and includes six brand new chapters. Key topics covered include: Theories of learning and ICT Effective pedagogy for effective ICT Using the interactive whiteboard to support whole class dialogue Special needs and e-inclusion Literacy and new literaciesNEW Multi-play digital games and on-line virtual worldsNEW Mobile learningNEW e-Safety Supporting international citizenship through ICTNEW Linking home and school ICT tools for administration and monitoring pupil progressNEW Tools for professional development. Including case studies and tasks to support your own learning, as well as ideas and activities to use with all your students, Learning to Teach Using ICT in the Secondary School is a vital source of support and inspiration for all training teachers as well those looking to improve their knowledge. If you need a guide to using ICT in the classroom or for professional support, start with this book.

Teaching Secondary Science: Theory and Practice provides a dynamic approach to preparing preservice science teachers for practice. Divided into two parts - theory and practice - the text allows students to first become confident in the theory of

teaching science before showing how this theory can be applied to practice through ideas for implementation, such as sample lesson plans. These examples span a variety of age levels and subject areas, allowing preservice teachers to adapt each exercise to suit their needs when they enter the classroom.Each chapter is supported by pedagogical features, including learning objectives, reflections, scenarios, key terms, questions, research topics and further readings. Written by leading science education researchers from universities across Australia, Teaching Secondary Science is a practical resource that will continue to inspire preservice teachers as they move from study into the classroom. This book includes a single-use twelve-month subscription to Cambridge Dynamic Science.

The improvement of science education is a common goal worldwide. Countries not only seek to increase the number of individuals pursuing careers in science, but to improve scientific literacy among the general population. As the teacher is one of the greatest influences on student learning, a focus on the preparation of science teachers is essential in achieving these outcomes. A critical component of science teacher education is the methods course, where pedagogy and content coalesce. It is here that future science teachers begin to focus simultaneously on the knowledge, dispositions and skills for teaching secondary science in meaningful and effective ways. This book provides a comparison of secondary science methods courses from teacher education programs all over the world. Each chapter provides detailed descriptions of the national context, course design, teaching strategies, and assessments used within a particular science methods course, and is written by teacher educators who actively research science teacher education. The final chapter provides a synthesis of common themes and unique features across contexts, and offers directions for future research on

science methods courses. This book offers a unique combination of ‘behind the scenes’ thinking for secondary science methods course designs along with practical teaching and assessment strategies, and will be a useful resource for teacher educators in a variety of international contexts. Solidly grounded in current recommendations of the National Science Education Standards, this text offers teaching guidance and strategies for physical, biological, and earth science courses for middle school, junior high, and high school. The authors' extensive curriculum development experience imbues the text with a practical focus. Their collective knowledge of the field balances coverage of the theory and research behind the strategies they present. Also, inherent in the text is a description of the role of constructivism in science teaching and the connection between science and society including how technological development is driven by societal needs. KEY TOPICS: A seven-part organization includes an introduction, historical perspectives and contemporary trends, goals and objectives, curriculum perspectives, planning for instruction and assessment, understanding and working with students, and induction and professional development. MARKET: For middle through secondary school science teachers.
Learning to Teach Science in the Secondary School is an indispensable guide with a fresh approach to the process, practice and reality of teaching and learning science in a busy secondary school. This fourth edition has been fully updated in the light of changes to professional knowledge and practice and revisions to the national curriculum. Written by experienced practitioners, this popular textbook comprehensively covers the opportunities and challenges of teaching science in the secondary school. It provides guidance on: • the knowledge and skills you need, and understanding the science department at your school •

development of the science curriculum • the nature of science and how science works, biology, chemistry, physics and astronomy, earth science • planning for progression, using schemes of work to support planning , and evaluating lessons • language in science, practical work, using ICT , science for citizenship, Sex and Health Education and learning outside the classroom • assessment for learning and external assessment and examinations Every unit includes a clear chapter introduction, learning objectives, further reading, lists of useful resources and specially designed tasks – including those to support Masters Level work – as well as cross-referencing to essential advice in the core text Learning to Teach in the Secondary School, sixth edition. Learning to Teach Science in the Secondary School is designed to support student teachers through the transition from graduate scientist to practising science teacher, while achieving the highest level of personal and professional development.
This book will provide invaluable support whether you are a newly-qualified science teacher, an experience teacher of chemistry who wants to extend the range of strategies and approached used, a biologist or physicist who has to teach chemistry, or a student training to be a teacher. Each chapter covers a broad section of the curriculum and is divided into topics. For each topic the book covers: - The pupil's possible Previous knowledge - A suggested Teaching sequence with activities necessary to cover the basic physics - Warnings about pupils' misconceptions, common problems with individual activities and safety issues - Further activities that develop the pupils' understanding of the topic - Enhancement ideas that relate the science to everyday contexts and provide new ideas for experienced teachers - Suggestions for using ICT TThis second edition reflects the requirements of current secondary science curricula, ideas from recent curriculum development projects and innovations in IT. This

book draws on the experience of a wide range of teachers and those involved in science education. It has been produced as part of the Association for Science Education's commitment to supporting science teacher by disseminating best practice and new ideas to enhance teaching.

Teaching science is no simple task. Science teachers must wrestle with highly abstract and demanding concepts, ideas which have taken humanity's greatest minds thousands of years to formulate and refine. Communicating these great and awesome theories involves careful forethought and planning. We need to deliver crystal clear explanations, guide students as they develop their embryonic knowledge and then release them to develop their thinking independently, all the while curating and tending to their long-term understanding as it develops over time. In Teaching Secondary Science: A Complete Guide, Adam breaks down the complex art of teaching science into its component parts, providing a concrete and comprehensive set of evidence-informed steps to nurturing brilliant science students. Adam hopes that you finds this book interesting, but his main aim is for you to find it useful. Useful when it comes to sketching out your curriculum, useful when preparing your explanations, useful for mapping out how you will check student understanding and useful for all other aspects of science teaching. This is a truly complete guide, and science teachers of any experience will find it packed with ideas that are new, challenging, interesting and, most importantly, useful.

Enhance your teaching with expert advice and support for Key Stages 3 and 4 Physics from the Teaching Secondary series - the trusted teacher's guide for NQTs, non-specialists and experienced teachers. Written in association with ASE, this updated edition provides best practice teaching strategies from academic experts and practising teachers. - Refresh your subject knowledge, whatever your level of expertise -

Gain strategies for delivering the big ideas of science using suggested teaching sequences - Engage students and develop their understanding with practical activities for each topic - Enrich your lessons and extend knowledge beyond the curriculum with enhancement ideas - Improve key skills with opportunities to introduce mathematics and scientific literacy highlighted throughout - Support the use of technology with ideas for online tasks, video suggestions and guidance on using cutting-edge software - Place science in context; this book highlights where you can apply science theory to real-life scenarios, as well as how the content can be used to introduce different STEM careers Also available: Teaching Secondary Chemistry, Teaching Secondary Biology

Essential reading for everyone concerned with the practice of secondary science education.This completely new edition of the highly regarded ASE Guide to Secondary Science Education covers, in its 26 concise chapters, a wide range of topics about learning and teaching science in the secondary school. This book, edited by Martin Hollins, and with contributions from a wide range of science educators, has five sections.

A companion to Aspects of Teaching Secondary Science, the first section of this reader provides an overview of the key issues, discussing the nature of science and its role in the school curriculum. The second section goes on to examine critically the ways in which science is reflected in the school curriculum, while the third section discusses recent curriculum initiatives and developments. Turning the focus from what is taught on to who is taught, section four shows that students are very much active learners in the classroom, making sense of their experiences and constructing their own meanings. The final section covers the role of research in science education, giving examples of research papers and considering how productive collaboration between teachers

and researchers can impact upon the effectiveness of classroom practice.

This is a brand new title in the successful 100 ideas series which provides secondary school science teachers with practical ideas and activities to use in their lessons as well as teaching and planning strategies to help make practice outstanding every day. The author is a science teacher and winner of the Wellcome Trust Enthuse award for Science. He has a growing Twitter following and the book will be full of his really original and engaging science ideas. The book will include ideas on integrating literacy into science lessons, safety in the lab and ideas for challenging the more able.

'An excellent companion to Learning to Teach in Secondary School ... full of good ideas and better advice ... Mentors will certainly want to use it, and so, I'm sure, will the rest of the history department ... Make sure they buy one, and keep your copy under lock and key.' – Michael Duffy, Times Educational Supplement 'A very well written and readable book. Overall, this is an excellent book and one which students and teachers outwith England would find a valuable addition to their library.' – Scottish Association of Teachers of History, Resources Review 'This book is without question the standard text for the history PGCE market.' – Dr Ian Davies, University of York, on the first edition. Learning to Teach History in the Secondary School provides an accessible introduction to teaching and learning history at secondary level. Underpinned by a theoretical perspective and backed up by the latest research, it encourages student teachers to develop a personal approach to teaching history. This fourth edition has been thoroughly updated for the new curriculum, with a brand new chapter on subject knowledge and a new section on action research to better support those reflecting on and developing their own practice. It provides an array of references and materials that give a sound theoretical

foundation for the teaching of history, including weblinks to further resources, while a range of tasks will enable students to put their learning into practice in the classroom. Practical advice is combined with reference and access to a wide range of recent and relevant research in the field of history education, to support Masters Level research and aid reflective practice. Key issues covered include: The benefits of learning history Planning The use of language and strategies for teaching Inclusion Technology in history teaching Assessment Continuing professional development Offering comprehensive and accessible support to becoming a history teacher, this book remains an invaluable resource for all training and newly qualified history teachers. Readings for Learning to Teach in the Secondary School brings together key articles to develop and support student teachers' understanding of the theory, research and evidence base that underpins effective practice. Designed for all students engaging with M Level study, each reading is contextualised and includes questions to encourage reflection and help you engage with material critically. Annotated further reading for every section supports your own research and writing. Readings are structured to make links with the practical guidance in the accompanying core textbook, Learning to Teach in the Secondary School. Topics covered include: motivation troublesome classroom behaviour ability grouping inclusive education personalised learning testing achievement and underachievement. Edited by the team that brings us Learning to Teach in the Secondary School, this Reader is an indispensible 'one-stop' resource that will support all students studying, researching and writing at M level on PGCE courses, as well as those on all other secondary education courses and masters degrees. Science education has changed radically in recent years, both as a result of debates within the subject and because of

curriculum legislation. Jerry Wellington discusses the major issues in science education today - such questions as the balance of content and process in the curriculum, the role of practical work and the nature of science as a subject - and uses this discussion to support a very practical resource for teachers in training and their mentors. The book covers every aspect of science teaching, including: Planning Differentiation and special needs Assessment Practical work Problem solving and investigations IT in science Handling sensitive issues, e.g. sex education Building on children's prior learning Throughout, Wellington's guidance is accompanied by suggestions for discussion, activities for individual and group use and annotated lists of further reaing aimed at helping the reader to build up a personal approach to the teaching of the subject. Students will also be helped by the glossaries of specialist terminology at the end of each chapter and by the references to National Curriculum attainment targets at every point in the book.

This title is intended to identify the ways in which ICT can be used to enhance secondary science education.

How can a potato be a battery? How quickly will a shark find you? What food should you take with you when climbing a mountain? The Really Useful Book of Secondary Science Experiments presents 101 exciting, ‘real-world’ science experiments that can be confidently carried out by any KS3 science teacher in a secondary school classroom. It offers a mix of classic experiments together with fresh ideas for investigations designed to engage students, help them see the relevance of science in their own lives and develop a passion for carrying out practical investigations. Covering biology, chemistry and

physics topics, each investigation is structured as a problem-solving activity, asking engaging questions such as, ‘How can fingerprints help solve a crime?’, or ‘Can we build our own volcano?’ Background science knowledge is given for each experiment, together with learning objectives, a list of materials needed, safety and technical considerations, detailed method, ideas for data collection, advice on how to adapt the investigations for different groups of students, useful questions to ask the students and suggestions for homework. Additionally, there are ten ideas for science based projects that can be carried out over a longer period of time, utilising skills and knowledge that students will develop as they carrying out the different science investigations in the book. The Really Useful Book of Secondary Science Experiments will be an essential source of support and inspiration for all those teaching in the secondary school classroom, running science clubs and for parents looking to challenge and excite their children at home.

A comprehensive guide To The theory and practice of teaching minds-on practical work in secondary science.

Enhance your teaching with expert advice and support for Key Stages 3 and 4 Biology from the Teaching Secondary series - the trusted teacher's guide for NQTs, non-specialists and experienced teachers. Written in association with ASE, this

updated edition provides best practice teaching strategies from academic experts and practising teachers. - Refresh your subject knowledge, whatever your level of expertise - Gain strategies for delivering the big ideas of science using suggested teaching sequences - Engage students and develop their understanding with practical activities for each topic - Enrich your lessons and extend knowledge beyond the curriculum with enhancement ideas - Improve key skills with opportunities to introduce mathematics and scientific literacy highlighted throughout - Support the use of technology with ideas for online tasks, video suggestions and guidance on using cutting-edge software - Place science in context; this book highlights where you can apply science theory to real-life scenarios, as well as how the content can be used to introduce different STEM careers Also available: Teaching Secondary Chemistry, Teaching Secondary Physics
This text provides a new approach to science teaching for student teachers, newly qualified and established science teachers wishing to re-examine their practice and upgrade their skills.
When children begin secondary school they already have knowledge and ideas about many aspects of the natural world from their experiences both in primary classes and outside school. These ideas, right or wrong, form the basis of all they subsequently learn. Research has shown that

teaching is unlikely to be effective unless it takes into account the position from which the learner starts. Making Sense of Secondary Science provides a concise and accessible summary of the research that has been done internationally in this area. The research findings are arranged in three main sections: * life and living processes * materials and their properties * physical processes. Full bibliographies in each section allow interested readers to pursue the themes further. Much of this material has hitherto been available only in limited circulation specialist journals or in unpublished research. Its publication in this convenient form will be welcomed by all researchers in science education and by practicing science teachers continuing their professional development, who want to deepen their understanding of how their children think and learn.
This book brings together ongoing debates about personalised learning, creativity and ICT in education, with a cross-curricular focus, and establishes a principled framework for cross-curricular teaching and learning in Science.
The working model for "helping the learner to learn" presented in this book is relevant to any teaching context, but the focus here is on teaching in secondary and college science classrooms. Specifically, the goals of the text are to: *help secondary- and college-level science faculty examine and redefine their roles in the classroom;

*define for science teachers a framework for thinking about active learning and the creation of an active learning environment; and *provide them with the assistance they need to begin building successful active learning environments in their classrooms. Active Learning in Secondary and College Science Classrooms: A Working Model for Helping the Learner to Learn is motivated by fundamental changes in education in response to perceptions that students are not adequately acquiring the knowledge and skills necessary to meet current educational and economic goals. The premise of this book is that active learning offers a highly effective approach to meeting the mandate for increased student knowledge, skills, and performance. It is a valuable resource for all teacher trainers in science education and high school and college science teachers.

The articles which make up this reader provide both overview and analysis of the central issues in secondary education. Focused closely upon what it means to teach and learn in the modern secondary classroom, this book provides invaluable insight into the development of secondary education today. It is an ideal introduction to the task of teachers in secondary schools. Issues covered in the book include: the new agenda around teaching and learning effective pedagogy the teacher-student relationship teaching, learning and the digital age grouping by ability managing the curriculum change

assessment equal opportunities and educational change This is the lead book in a series which bring together collections of articles by highly experienced educators which introduce, explore and illuminate the issues surrounding teaching in secondary schools. They are invaluable resources for those training to become teachers, newly qualified teachers and more experienced practioners, particularly those mentoring NQTs.

A comprehensive and critical guide for new and experienced teachers on the teaching and learning of science. It combines an overview of current research with an account of curriculum changes to provide a valuable and practical guide to the business of classroom teaching.

Designed for all trainee and newly qualified teachers, teacher trainers and mentors, this volume provides a contemporary handbook for the teaching of science, covering Key Stages 2, 3 and 4 in line with current DfEE and TTA guidelines.

Now fully updated in its third edition Teaching Secondary Science is a comprehensive guide to all aspects of science teaching, providing a wealth of information and ideas about different approaches. With guidance on how children understand scientific ideas and the implications this has on teaching, teachers are encouraged to construct their own meanings and become reflective in their practice. Relating science to government agendas, such as the National Strategies, Assessment for Learning and Every Child Matters, this new edition reflects and maps to changes in national standards. Key features include: illustrative examples for use in the classroom theoretical grounding linked to practical application the pros and cons of different approaches M Level support materials additional section on earth, atmosphere

and space advice on teaching ‘difficult ideas’ education for sustainable development managing the science classroom and health and safety support for talk for learning, and advice on numeracy in science. Presenting an environmentally sustainable, global approach to science teaching, this book emphasises the need to build on and challenge children’s existing ideas so they better understand the world in which they live. Essential reading for all students and practising teachers, this invaluable book will support those undertaking secondary science PGCEs and provides material suitable for those studying at M Level.

A fully revised edition of this thorough introduction to the theory and practice of science teaching in middle and secondary schools Science teaching is an art that requires a unique combination of knowledge and skills to engage students and foster their understanding. This book is a thorough introduction and embraces the full spectrum of contemporary reforms in education. It presents science teaching as a dynamic, collaborative activity and highlights recent developments in research into excellence in science teaching. Emphasizing pedagogy, curriculum, and assessment, this book is designed for educators preparing to teach science at middle and high school levels. Fully revised and updated, this second edition includes new chapters which address the use of ICT in the science classroom and suggest innovative ways of developing an engaging, thinking science classroom. Throughout the book, the authors reflect a student-centered approach to science teaching as advocated in reform curriculum documents throughout the world. Written by leading science educators and incorporating classroom examples and activities, this book outlines the main issues science teachers face today.

Covering physics/physical science, life science/biology, earth and space science, and chemistry, this research-based guide

shows secondary teachers how to develop and use formative assessments to enhance learning in science.