Making Sense Teaching And Learning Mathematics With Understanding

Learning to teach: making sense of learning to teach
Making Sense Of Children'S Drawings
Making Sense Of History
Making Sense Of Teaching in Difficult Times
Making Sense Of Education
Making Sense Of Math
Making Sense Of Number
Math Makes Sense!
Making Sense Of Algebra
Making Sense Of Number, K-10
Making Sense Of Science:
Energy
Making Sense Of Mathematics for Teaching Grades K-2
Making Sense Of Mathematics for Teaching Grades 3-5
Making Sense Of Adult Learning
Making Sense Of Theory & Practice In Early Childhood: The Power Of Ideas
Making Sense Of Lifelong Learning
Supergute Tage oder Die sonderbare Welt des Christopher Boone
Making Sense Of Learners Making Sense Of Written Language
Fast Making Sense Of Phonics, Second Edition
Making Sense Of Mathematics for Teaching Grades 3-5
Making Sense Of Secondary Science
Making Sense Of Mathematics for Teaching High School
Making Sense Of Learning
Making Sense Of Drama
Making Sense Of Money
Fitting in - Teacher's Book + Artwork
Making Sense Of Secondary Science

This 5-hour free course explored approaches to teacher education and the implications of students' experiences of learning to teach. FORWARD FAST examines the extraordinary changes that have taken place inside the classroom as a result of an explosion of personal and instructional technology. It also explores ways for educators and parents to create inspirational and meaningful learning opportunities for their children in this exciting new world. In Making Sense of Math, Cathy L. Seeley, former president of the National Council of Teachers of Mathematics, shares her insight into how to turn your students into flexible mathematical thinkers and problem solvers. This practical volume concentrates on the following areas: * Making sense of math by fostering habits of mind that help students analyze, understand, and adapt to problems when they encounter them. * Addressing the mathematical building blocks necessary to include in effective math instruction. * Turning teaching “upside down” by shifting how we teach, focusing on discussion and analysis as much as we focus on correct answers. * Garnering support for the changes you want to make from colleagues and administrators. Learn how to make math meaningful for your students and prepare them for a lifetime of mathematical fluency and problem solving. Every teacher wants to help students make sense of mathematics; but what if you could guide your students to expect mathematics to make sense? What if you could help them develop a deep understanding of the reasons behind its facts and methods? In Making Sense of Algebra, the common misconception that algebra is simply a collection of rules to know and follow is debunked by delving into how we think about mathematics. This "habits of mind" approach is concerned not just with the results of mathematical thinking, but with how mathematically proficient students do that thinking. Making Sense of Algebra addresses developing this type of thinking in your students through: using well-chosen puzzles and investigations to promote perseverance and a willingness to explore seeking structure and looking for patterns that mathematicians anticipate finding—and using this to draw conclusions cultivating an approach to authentic problems that are rarely as tidy as what is found in textbooks allowing students to generate, validate, and critique their own and others' ideas without relying on an outside authority. Through teaching tips, classroom vignettes, and detailed examples, Making Sense of Algebra shows how to focus your instruction on building these key habits of mind, while inviting students to experience the clarity and meaning of mathematics—perhaps for the first time. Discover more math resources at Heinemann.com/Math "Each chapter's activities are hands-on and should make the book a useful and enjoyable experience. It will appeal to students and teachers as a one-stop shop for portfolio advice and support." Nursing Standard "This text is much needed. Clearly written and engaging, this has the potential to become a gold standard portfolio text." Roger Watson, Editor of Journal of Clinical Nursing and Professor of Nursing, School of Nursing and Midwifery, The University of Sheffield "Having read this book, I feel that it is not only useful for nursing students, but could be useful for qualified nurses who are working on their continuing professional development folder As students progress through their course, how they manage their time, their attitude to learning and the goals they set for themselves may change. It is fitting therefore that the first chapter looks at learning in the context of portfolios and includes a time management, desire for learning and self control questionnaire – which although gives no definition to how the student manages their time, could prove to be an interesting activity particularly if completed at the start of a year and then at the completion of the year." Joanne Starkes, Nursing Student "Fiona Timmins has made the topic of nursing portfolios easy to understand with simple terms and many helpful activities throughout while still being easy to read. While covering everything from the purpose of portfolios, content and structure to portfolios
in operation this is a book that will greatly help anyone trying to produce a portfolio whether just starting or nearing the end of one I will definitely be referring to this book throughout my 3 years as a student nurse making my portfolio and would recommend others to do so as well." Laura Franklin, Nursing Student "Fiona Timmins has written a book which is not just useful for student nurses but it also makes the topic easier to understand. Throughout the book there are many activities for the reader to partake in. It covers key topics such as "portfolio content" and "portfolio structure". As a 2nd year nursing student I believe that this text is a valuable asset to any nursing students' bookshelf as it is clear, concise and makes what can be a very confusing subject appear much easier." Vicky Bain, Nursing Student "Fiona Timmins has produced a book that is not only simple and easy to read but provides activities that enable the reader to think deeper about the information they include within their portfolio. Remember points dotted through each chapter provide quick and easy hints and tips to look back on while completing a portfolio. This is one book, which I wish I had the chance to read in my first year, but it will be a handy companion while I complete my portfolio. I will recommend this book to my fellow classmates and also students in the years below, as they will defiantly benefit from this book." Leanne Haigh, Nursing Student This accessible book provides a guide to the context of portfolio development and its importance not just to assessment but to the patient experience. All students undertaking pre-registration nursing qualifications are required to complete a portfolio as part of their formal assessment, in order to bridge the gap between theory and practice and to provide evidence of achievements in practice. Fiona Timmins offers a handy guide to approaching, putting together and developing an effective portfolio, helping you answer questions like: What should be in my portfolio? How should I present it? How will my portfolio be assessed? Reflection points and portfolio examples make the book easy to use. Key topics covered include: Learning in the context of the portfolio The purpose of portfolios Reflection and reflective practice Competence in nursing Portfolio content Portfolio structure The portfolio in operation Making Sense of Portfolios is essential reading for all pre- and post-registration nursing students looking for a clear and accessible guide to creating and developing a portfolio. "Not just for students in adult education, Making Sense of Adult Learning is for anyone working with adults in a variety of settings: business, industry, organizations, colleges, universities, and training projects. Learning is at the heart of human experience, and this guide provides essential keys to understanding how adults learn and to applying that knowledge to practical, everyday situations." -- Book jacket This volume gives educational theorists the chance to let rip and say what they really want to say. In doing so it sends a blast of fresh air through the dusty halls of academe. The vast majority of the literature in education theory and philosophy follows the conventions of academic writing, and rightly so. Yet its formal, abstract and objective style, which focuses on the careful presentation of theoretical and philosophical arguments, doesn't always give us insights into what motivates and drives the authors - while for academic neophytes it can be dense and arcane. Here, those same theorists and philosophers have been given the chance to expound at length on the topics that most exercise them. What concerns them, what gets them up in the morning, and what really matters most to them? Readers will discover what happens when these thinkers are explicitly invited to go beyond academic conventions and experiment with form, style and content. Featuring collected essays from leading educationalists from Norway, Sweden, Denmark, the USA, Canada, Israel, Germany, Belgium and the UK, these essays provide vital insights into their work as well as being a compelling introduction to contemporary attempts to make sense of education through theory and philosophy. All these authors have made key contributions to their field, and their unique "manifestos" make a fascinating read for any student or practitioner in education. This book looks beyond the current rhetoric about lifelong learning and asks long overdue questions on the need of LLL, the motives of institutions, employers and the Government in promoting it, and who says what is or is not LLL. Discover a clear path for improving mathematics instructional strategies at any grade level. Designed for individuals or collaborative teams, this practical resource introduces a set of rubrics -- the Instructional Quality Assessment (IQA) Toolkit -- that readers can rely on to help guide reflections, conversations, feedback, and planning. Also included is a series of short videos that showcase how to use the book's math strategies and tools in classrooms. Ensure the instructional quality of your teaching strategies in mathematics: Utilize tasks, questions, and evidence (the TQE process) and the associated IQA rubrics as a road map for increasing instructional quality. Become familiar with the connection between efficient use of tasks and teacher questioning with increased student success. Learn how to gauge student response to tasks and lessons in order to understand student mastery of the material. Enhance your understanding of mathematics through hands-on activities. Access free online reproducibles for use in teaching mathematics in the classroom. Contents: About the Authors Introduction Part 1: Connecting to the T in TQE -- Tasks and Task Implementation Chapter 1: Potential of the Task Chapter 2: Implementation of the Task Part 2: Connecting to the Q in TQE -- Questions and Their Role as Discourse Actions Chapter 3: The Teacher's Questions Chapter 4: Teacher's Linking and Teacher's Press Part 3:
Connecting to the E in TQE -- Evidence of Students' Mathematical Work and Thinking Chapter 5: Students' Linking and Students' Providing Chapter 6: The IQA Toolkit as a Tool to Assess and Improve Instructional Practice Epilogue: Next Steps Appendix A: The IQA Toolkit Appendix B: Suggested Answers for Activity 1.4 Appendix C: Suggested Answers for Activity 3.2 Appendix D: Additional Support for Rating Tasks Appendix E: List of Figures and Videos References and Resources Index

Making Sense of Education provides a contemporary introduction to the key issues in educational philosophy and theory. Exploring major past and present conceptions of education, teaching and learning, this book makes philosophy of education relevant to the professional practice of teachers and student teachers, as well of interest to those studying education as an academic subject. The book is divided into three parts: education, teaching and professional practice; issues concerning education, the role of the teacher, the relationship of educational theory to practice and the wider moral dimensions of pedagogy, learning, knowledge and curriculum; issues concerning behaviourist and cognitive theories of learning, knowledge and meaning, curriculum aims and content and evaluation and assessment of schooling, society and culture; issues of the wider social and political context of education, concerning liberalism and communitarianism, justice and equality, differentiation, authority and discipline. This timely and up-to-date introduction assists all those studying and/or working in education to appreciate the main philosophical sources of and influences on present day thinking about education, teaching and learning. This textbook brings together findings from global research on teaching and learning, with an emphasis on secondary and higher education. The book is unique in that the content is selected in an original way and its presentation reflects the most recent research evidence related to understanding. The book covers and presents themes that are based tightly on worldwide research evidence, scrupulously avoiding opinion or any dependence on the personal experience of the authors. The book starts by reflecting on educational research itself. The four chapters that follow relate the story of the research that shows how all humans learn and the variations within that framework. These chapters offer a tight framework that underpins much of the rest of the text. The next four chapters look at the way school curricula are organised and how the performance of learners can be assessed. They summarise the research evidence related to thinking skills and consider the importance of practical teaching. This is followed by two chapters that draw from the extensive social psychology research on attitude development as it applies in education, and then by two chapters that summarise the research related to major issues of controversy: the performativity agenda and the issue of quality. One chapter looks at the place of statistics in education. The next two chapters look at the evidence that can support or undermine many typical education beliefs, or myths and mirages. Finally, the last chapter brings it all together and looks into the future, pointing to some areas where future research is likely to be helpful, based on current knowledge. Making Sense of Children's Drawings is enlivened with the real drawings of seven young children collected over three years. These drawings stimulated dialogues with the children, parents and practitioners whose voices are reported in the book. The book makes an argument for us to rethink radically the role of drawing in young children's construction of meaning, communication and sense of identity. It provides insights into the influence of media and consumerism, as reflected in popular visual imagery, and on gender identity formation in young children. It also offers strong messages about the overemphasis on the three Rs in early childhood education. This book will give teachers from all subject areas the confidence to explore the possibilities of drama in the classroom. Thinking about teaching in educational terms has become increasingly difficult because of the conceptions of higher education that predominate in both policy and public debate. Framing the benefits of higher education simply as an economic good poses particular difficulties for making educational sense of teaching. Moreover, the assumptions about social mobility, usefulness, and the economic advantages of higher education, upon which these conceptions are based, can no longer be taken for granted. The chapters in this book all wrestle with understandings of education and teaching experiences in changing global, national, and institutional contexts. They explore questions of difference and privilege, the social transformation of teaching through transforming teachers, contestations of global citizenship and interculturality, learning and sensibilities of self-in-the-world, the relationship between programme content and student decision-making, divergent conceptions of learning in international education, and subject-centred approaches to embodied teaching. The book considers the value of disciplinary tools of analysis in addressing contextual challenges in developing societies, connections between pedagogies, autonomy and intercultural classrooms, and ways of countering the marketization of higher education through online teaching communities. This book was originally published as a special issue of Teaching in Higher Education. Ken and Yetta Goodman's professional work has been a lifelong collaboration, informed by shared philosophical strands. An overarching goal has been to provide access for all children to literacy and learning and to inform and improve teaching and learning. Each also is recognized for specific areas of focus and is known for particular concepts. This volume brings together a thoughtfully crafted selection of their key writings, organized around five
central themes: research and theory on the reading process and written language development; teaching; curriculum and evaluation; the role of language; advocacy and the political nature of schooling. In the World Library of Educationalists, international scholars themselves compile career-long collections of what they judge to be their finest pieces — extracts from books, key articles, salient research findings, major theoretical and practical contributions — so the world can read them in a single manageable volume. Readers will be able to follow the themes and strands of their work and see their contribution to the development of a field, as well as the development of the field itself. This is a fresh approach to teaching and learning maths, and is designed to be used with the workbook and teacher book. It is part of the 'Making Sense of Maths' range. This bestselling book provides indispensable tools and strategies for explicit, systematic phonics instruction in K–3. Teachers learn effective ways to build students' decoding skills by teaching letter–sound relationships, blending, word building, multisyllabic decoding, fluency, and more. The volume is packed with engaging classroom activities, many specific examples, and research-based explanations. It offers a complete phonics assessment and clear guidelines for sequencing instruction to give every student a strong foundation for reading. More than 30 reproducible forms and word lists are included in the appendices. Purchasers get access to a Web page where they can download and print the reproducible materials in a convenient 8 1/2" x 11" size and find a wealth of supplemental teaching resources. New to This Edition: Six additional chapters covering key topics, including assessment, phonemic awareness, orthography, and automaticity. *A complete phonics assessment with administering and scoring guidelines. *Downloadable forms and word lists, plus a companion website with rich supplemental resources, including word/syllable cards, assessment tools, and illustrated stories featuring target words, which teachers can project or print for classroom use. *More classroom examples and "Your Turn" activities, as well as expanded word lists. See also Bringing Words to Life, Second Edition: Robust Vocabulary Instruction and Creating Robust Vocabulary: Frequently Asked Questions and Extended Examples, by Isabel L. Beck, Margaret G. McKeown, and Linda Kucan, which provide essential tools for K–12 vocabulary instruction. Develop a deep understanding of mathematics. This user-friendly series presents teachers with a logical progression of pedagogical actions, classroom norms, and collaborative teacher team efforts to increase educator knowledge and improve mathematics instruction schoolwide. Explore strategies and techniques to effectively learn and teach significant mathematics concepts, and provide every student with the precise, accurate information they need to achieve academic success. Develop a deep understanding of mathematics. This user-friendly resource presents grades 3–5 teachers with a logical progression of pedagogical actions, classroom norms, and collaborative teacher team efforts to increase their knowledge and improve mathematics instruction. Focus on an understanding of and procedural fluency with multiplication and division. Address how to learn and teach fraction concepts and operations with depth. Thoroughly teach plane and solid geometry. Explore strategies and techniques to effectively learn and teach significant mathematics concepts and provide all students with the precise, accurate information they need to achieve academic success. Benefits Dig deep into mathematical modeling and reasoning to improve as both a learner and teacher of mathematics. Explore how to develop, select, and modify mathematics tasks in order to balance cognitive demand and engage students. Discover the three important norms to uphold in all mathematics classrooms. Learn to apply the tasks, questioning, and evidence (TQE) process to ensure mathematics instruction is focused, coherent, and rigorous. Use charts and diagrams for classifying shapes, which can engage students in important mathematical practices. Access short videos that show what classrooms that are developing mathematical understanding should look like. Contents Introduction 1 Place Value, Addition, and Subtraction 2 Multiplication and Division 3 Fraction Concepts 4 Fraction Operations 5 Geometry 6 Measurement Epilogue Next Steps Appendix A Completed Classification of Triangles Chart Appendix B Completed Diagram for Classifying Quadrilaterals Deliver engaging, enquiry-driven lessons and help pupils gain a coherent chronological understanding of and across periods studied with this complete offering for Key Stage 3 History. Designed for the 2014 National Curriculum this supportive learning package makes history fun and inspiring to learn. Making Sense of History consists of four Pupil's Books with accompanying Dynamic Learning Teaching and Learning resources. Structured around big picture overviews and in-depth enquiries on different topics, the course develops pupils understanding of history and their ability to ask and explore valid historical questions about the past. - Help pupils come to a sound chronological understanding of the past and identify the most significant events, connections and patterns of change and continuity with specifically tailored big pictures of the period and of the topics within it. - Develop pupils' enquiry skills and help them become motivated and curious to learn about the past with purposeful and engaging enquiries and a focus on individuals' lives. - Ensure pupils' progress in their historical thinking through clear and balanced targeted coverage of the main second order concepts in history. - Support and stretch your pupils with differentiated material, including writing frames to support literacy and ideas for more challenge provided in the Dynamic Learning Teaching and Learning Resources. - Make assessment become a
meaningful and manageable process through bespoke mark schemes for individual pieces of work. "Published in partnership with NSTA press, National Science Teachers Association."--Cover. If you need quick, targeted baseline knowledge about using technology for teaching and learning, Making Sense of Online Learning is for you. This practical, no-nonsense primer will help you understand how online learning technologies work and how they fit into your organization. You'll gain a working knowledge of important topics such as design, infrastructure, and evaluation and the confidence to make informed decisions that will help your learners and organization thrive. Since information about online learning changes at Internet speed, the book is supported with a dedicated Web site (www.learningpeaks.com/msool/) filled with up-to-the-minute suggestions for tools and resources.

Word problems have been a staple of mathematics instruction for centuries, yet the rationale for their use has remained largely unexamined. A range of findings have shown how students consistently answer them in ways that fail to take account of the reality of the situations described. This monograph reports on studies carried out to investigate this "suspension of sense-making" in answering word problems. In Part One, a wide range of examples documenting the strength of the phenomenon is reviewed. Initial surprise at the findings was replaced by a conviction that the explanation lies in the culture of the mathematics classroom, specifically the rules implicitly governing the nature and interpretation of the word problem genre. This theoretical shift is reflected in Part Two. A detailed analysis of the way in which word problems are currently taught in typical mathematical classrooms is followed by reviews of design experiments illustrating how, by immersing students in a fundamentally changed learning environment, they can acquire what the authors consider to be more appropriate conceptions about, and strategies for doing, word problems. Part Three turns to a wider discussion of theoretical issues, a further analysis of the features of the educational system considered responsible for outcomes detrimental to many students' understanding and conception of mathematics, and suggestions for rethinking the role of word problems within the curriculum. The Planning and Evaluation Service within the Office of the Under Secretary of the U.S. Department of Education describes its education reform efforts. The service highlights evaluations, goals, programs, grants, and the 21st Century Community Learning Centers.

Making Sense of Mass Education provides an engaging and accessible analysis of traditional issues associated with mass education. The book challenges preconceptions about social class, gender and ethnicity discrimination; highlights the interplay between technology, media, popular culture and schooling; and inspects the relevance of ethics and philosophy in the modern classroom. The third edition has been comprehensively updated to include the latest research, statistics and legal policies. Each chapter challenges and breaks down common myths surrounding each topic, encouraging pre-service teachers to think critically and reflect on their own beliefs. The inclusion of a new chapter on alternative education reflects the ever-changing Australian educational landscape. In Making Sense of Mass Education, Gordon Tait expertly blurs disciplinary boundaries, drawing on sociology, cultural studies, history, philosophy, ethics and jurisprudence to provide a comprehensive understanding of the fundamental concepts of mass education.

This book presents several key principles for teaching mathematics for understanding that you can use to reflect on your own teaching, make more informed decisions, and develop more effective systems of instruction. This practical book shows you how to get to know the needs and abilities of your students and help them make sense of math concepts. Designed to enhance your professional learning, the book shows you how to notice, interpret, confirm, and respond to student thinking. You will discover how to structure learning experiences around key number concepts—quantity, counting, relating, and representing—developed across various strands: patterning and algebra, numbers and operations, measurement, geometry, and data and probability. Powerful examples of questions and prompts guide you to create a classroom where students get the support they need as they develop confidence in their number sense. Christopher Boone ist fünfzehn Jahre, drei Monate und zwei Tage alt. Er kennt alle Länder und deren Hauptstädte sowie sämtliche Primzahlen bis 7507. Er liebt die Farbe Rot, hasst hingegen Gelb und Braun. Unordnung, Überraschungen und fremde Menschen versetzen ihn in Panik, denn Christopher leidet an einer leichten Form von Autismus. Als aber der Pudel in Nachbars Garten mit einer Mistgabel umgebracht wird, beginnt Christopher, aus seiner fest gefügten, kleinen Welt auszubrechen: Mutig stellt er den schändlichen Verbrecher und erfährt außerdem, was es heißt, in der Welt der Erwachsenen zu leben. The methods for teaching mathematics usually follow the structure of mathematics. The problem with this is that the structure of mathematics took centuries of elaboration to develop and is not the same as how one originally experiences mathematics. Based on research of how mathematics is actually learned, this book presents an innovative approach for teaching mathematics that will engage pupils and can have lifelong benefits for how they take on board more advanced mathematical topics. Math Makes Sense! makes use of the realistic mathematics education (RME) philosophy, which bridges the gap between informal mathematics learning (such as in day-to-day life) and more formal teaching in school. Many real-life situations as examples for learning are included, as well as different mathematical and logic puzzles that will stimulate learning.
Making Sense Teaching And Learning Mathematics With Understanding

and foster understanding. The ideas presented are not confined to one national curriculum and so can be helpful worldwide to teachers/ instructors (both in practice and those still in training), private tutors, homeschooling parents, and educational researchers.

Contents:
Preface
Acknowledgments
About the Authors
Fostering the Learning of Mathematics
Construction of Concepts and Mathematical Interpretations
Numbering
Addition and Subtraction
Multiplication and Division
Fractions, Decimals, and Percentages
Measurement
Exploring Space
Probability and Statistics
Patterns, Relations, and Functions
The Joy of Puzzles
Technology
Assessment
Concluding Remarks
Readerhip: Teachers, trainee teachers, researchers interested in mathematics education, homeschool parents, and parents with children in primary/ elementary school.

Key Features:
This book is grounded on solid mathematics learning research, as well as on the authors' own observations in the classroom, and so combines theoretical knowledge with practice. Written in an accessible manner.

Gives educators ideas which they can easily implement in the classroom.

This textbook brings together findings from global research on teaching and learning, with an emphasis on secondary and higher education. The book is unique in that the content is selected in an original way and its presentation reflects the most recent research evidence related to understanding. The book covers and presents themes that are based tightly on worldwide research evidence, scrupulously avoiding opinion or any dependence on the personal experience of the authors.

The book starts by reflecting on educational research itself. The four chapters that follow relate the story of the research that shows how all humans learn and the variations within that framework. These chapters offer a tight framework that underpins much of the rest of the text. The next four chapters look at the way school curricula are organised and how the performance of learners can be assessed. They summarise the research evidence related to thinking skills and consider the importance of practical teaching. This is followed by two chapters that draw from the extensive social psychology research on attitude development as it applies in education, and then by two chapters that summarise the research related to major issues of controversy: the performativity agenda and the issue of quality.

One chapter looks at the place of statistics in education. The next two chapters look at the evidence that can support or undermine many typical education beliefs, or myths and mirages. Finally, the last chapter brings it all together and looks into the future, pointing to some areas where future research is likely to be helpful, based on current knowledge.

Develop a deep understanding of mathematics. This user-friendly resource presents grades K-2 teachers with a logical progression of pedagogical actions, classroom norms, and collaborative teacher team efforts to increase their knowledge and improve mathematics instruction. Explore strategies and techniques to effectively learn and teach significant mathematics concepts and provide all students with the precise, accurate information they need to achieve academic success.

Clarify math essentials with figures and tables that facilitate understanding through visualization. Benefits Dig deep into mathematical modeling and reasoning to improve as both a learner and teacher of mathematics. Explore how to develop, select, and modify mathematics tasks in order to balance cognitive demand and engage students. Discover the three important norms to uphold in all mathematics classrooms. Learn to apply the tasks, questioning, and evidence (TQE) process to ensure mathematics instruction is focused, coherent, and rigorous. Use charts and diagrams for classifying shapes, which can engage students in important mathematical practices. Access short videos that show what classrooms that are developing mathematical understanding should look like. Contents

Introduction
1 Number Concepts and Place Value
2 Word Problem Structures
3 Addition and Subtraction
4 Using Counting Strategies
5 Geometry
6 Measurement
Epilogue
Next Steps
Appendix A
Completed Classification of Triangles Chart
Appendix B
Completed Diagram for Classifying Quadrilaterals

Learning is an inseparable part of human experience. Understanding how adults learn and applying that expertise to practical everyday situations and relationships opens the window on a broader understanding of the capacity of the human mind.

Dorothy MacKeracher's Making Sense of Adult Learning was first published in 1996, and was acclaimed for its readability and value as a reference tool. For the second edition of this essential work, MacKeracher has reorganized and revised many of the chapters to bring the text up-to-date for contemporary use. Concepts are presented from learning-centred and learner-centred perspectives, while related learning and teaching principles provide ideas about how one may enable others to learn more effectively. Written for people preparing to become adult educators, Making Sense of Adult Learning provides background information about the nature of adult learning and the characteristics that typify adult learners. This new edition will be quick to assert its place as the premier guide in the field.

This title offers students an overview of a range of theoretical concepts, some traditionally associated with early childhood and some less traditionally. It aims to stimulate debate and to demonstrate how theoretical thinking can inform pedagogy and research with innovative results.

Develop a deep understanding of mathematics. This user-friendly resource presents high school teachers with a logical progression of pedagogical actions, classroom norms, and collaborative teacher team efforts, to increase their knowledge and improve mathematics instruction. Explore
strategies and techniques to effectively learn and teach significant mathematics concepts and provide all students with the precise, accurate information they need to achieve academic success. A concise introduction to personal and professional numeracy skills, helping readers to become more mathematically competent. What ideas do children hold about the natural world? How do these ideas affect their learning of science? 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 contribute to subsequent learning and research has shown that teaching is unlikely to be effective unless it takes learners’ perspectives into account. Making Sense of Secondary Science: Research into Children’s Ideas provides a concise, 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; and physical processes. Much of this material has hitherto been difficult to access and its publication in this convenient form will be welcomed by all science teachers, both in initial training and in schools, who want to deepen their understanding of how their children think. What ideas do children hold about the natural world? How do these ideas affect their learning of science? Young learners bring to the classroom knowledge and ideas about many aspects of the natural world constructed from their experiences of education and from outside school. These ideas contribute to subsequent learning, and research has shown that teaching of science is unlikely to be effective unless it takes learners’ perspectives into account. Making Sense of Secondary Science provides a concise, accessible summary of international research into learners’ ideas about science, presenting evidence-based insight into the conceptions that learners hold, before and even despite teaching. With expert summaries from across the science domains, it covers research findings from life and living processes, materials and their properties and physical processes. This classic text is essential reading for all trainee secondary, elementary and primary school science teachers, as well as those researching the science curriculum and science methods, who want to deepen their understanding of how learners think and to use these insights to inform teaching strategies. It also provides a baseline for researchers wishing to investigate contemporary influences on children’s ideas and to study the persistence of these conceptions. Both components of Making Sense of Secondary Science – this book and the accompanying teacher’s resource file, Making Sense of Secondary Science: Support materials for teachers – were developed as a result of a collaborative project between Leeds City Council Department of Education and the Children’s Learning in Science Research Group at the University of Leeds, UK.