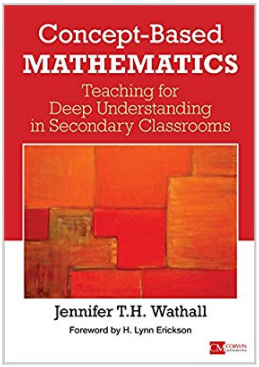

Concept-Based Mathematics: Teaching for Deep Understanding in Secondary Classrooms (Corwin Mathematics Series)

By Jennifer Wathall

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Give math students the connections between what they learn and how they do math—and suddenly math makes sense

If your secondary-school students are fearful of or frustrated by math, it’s time for a new approach. When you teach concepts rather than rote processes, you help students discover their own natural mathematical abilities.

This book is a road map to retooling how you teach math in a deep, clear, and meaningful way to help students achieve higher-order thinking skills. Jennifer Wathall shows you how to plan units, engage students, assess understanding, incorporate technology, and there’s even a companion website with additional resources.

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Concept-Based Mathematics: Teaching for Deep Understanding in Secondary Classrooms (Corwin Mathematics Series) By Jennifer Wathall Bibliography

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Editorial Review

Review

"Secondary teachers are constantly being encouraged to change their practice but few books have addressed the topics of secondary mathematics nor given examples that secondary teachers can relate to. This book does that. Another strength is the connection of the content to the math processes and practices, the heart of good instruction. The figures provided to summarize big ideas are excellent. I love the potential of this book for using it as a text for middle and secondary teachers, a guide for professional development, and a place for individual reflection. I know for sure that I would use it for my student teacher seminar class and anytime that I was instructing upper level math teachers. I've been waiting for this!"
(Barbara Fox, Adjunct Professor, Student Teacher Supervisor)

"The author provides a solid rationale, backed up by numerous practical and authentic examples to increase the quality of conceptual math classroom teaching practices so needed to develop the next generation learners. This is a must have for any secondary school's professional library."
(Dave Nagel, Author Consultant)

"I attended a Concepts Based Curriculum training course led by Jennifer Wathall and was really inspired by what I learned. Far too often, as teachers, we can become narrowly focused on the topics that we are covering; with concepts there is a whole new opportunity for students to understand the big ideas and the connections between different subjects. Jennifer skillfully guided us through how we can introduce students to a concept-based curriculum. I was really impressed with the method of writing principle generalizations which provide a framework for exploration. These generalizations can in fact make the focus of a lesson or series of lessons much more exciting, allowing students to break out of the constraints of a limited topic range. Ultimately, I left the course determined to try out a concepts-based model with a new unit we are developing on Human Rights. With the conceptual lens, this promises to be a much more thought-provoking unit for our students."
(John Edwards, Head of History Department)

"One of the major strengths of the book is the examples and the visual diagrams that outline major topics. The book provides rubrics that allow teachers to determine where they are in their methodology and a opportunity to decide where they can improve their teaching strategies."
(Amanda McKee, High School Mathematics Instructor)

"The major strength of the book is that it addresses teaching mathematics in a way that invites students to learn and encourages not only content knowledge, but depth of knowledge, rigor, and critical thinking. Inquiry is a means of synergizing your classroom and drawing students in so that they ***want*** *to learn. This is going to require a change of mindset for teachers and the administrators alike as well as training. This book provides an opportunity for both."*
(Pamela L. Opel, Intervention Specialist)

"Jennie Wathall's book offers a clear understanding of how complex learning of mathematics is, and how to use this understanding to create a thinking classroom. She explains, from a scientific point of view and in a very well-researched and comprehensive manner, sprinkled with plenty of practical examples, what is the

interdependence between the processes and knowledge and how to plan, run and assess for a concept-based mathematics classroom. This book is a must-read for all mathematics educators, a book that should definitely be on the table in each mathematics office."

(Dr. Daniela Vasile, Head of Mathematics)

"Wathall is a master at covering all the bases here; this book is bursting with engaging assessment examples, discussion questions, research, and resources that apply specifically to mathematical topics. Any math teacher or coach would be hard-pressed to read it and not come away with scores of ideas, assessments, and lessons that she could use instantly in the classroom. As an IB Workshop Leader and instructional coach, I want this book handy on a nearby shelf for regular referral – it's a boon to any educator who wants to bring math to life for students the world over."

(Alexis Wiggins, Instructional Coach, IB Workshop Leader and Consultant)

"Jennifer Wathall's book is one of the most forward thinking mathematics resources on the market. While highlighting the essential tenets of Concept-Based Curriculum design, her accessible explanations and clear examples show how to move students to deeper conceptual understandings. This book ignites the mathematical mind!"

(Lois A. Lanning. Author)

About the Author

Jennifer Wathall has been a teacher of mathematics for over 20 years. She graduated from the University of Sydney with a BSC majoring in Mathematics and she has completed postgraduate studies at The University of Hong Kong.

She has worked in several international schools including South Island School, Hong Kong, The United Nations International School (UNIS, one of the original IB schools), New York and she is currently working at Island School, Hong Kong as Head of Mathematics. She is currently an honorary faculty advisor and part time instructor for The University of Hong Kong.

In the international arena she has presented workshops such as "How to Effectively Integrate Multimedia into the Classroom" at the 21st Century Conference in Hong Kong and Shanghai and The Asian Technology Conference in Mathematics, Bangkok and Beijing. She has also given talks around Asia about how to effectively integrate a 1:1 program into the mathematics classroom.

?As a qualified International Baccalaureate workshop leader ("Mathematics, Concepts and Inquiry in the Diploma Program and Approaches to Teaching and Learning") Jennifer has delivered numerous workshops in the Asia Pacific region. Her role as a field representative for the IB Asia Pacific serves as part of the quality assurance framework. She has consulted on IB Mathematics textbooks and has developed a Category 3 workshop on "The Use of the Casio GDC in IB Mathematics". In 2014 she was invited to deliver a talk at the IB Asia Pacific Conference titled "Using Inquiry in the IB Mathematics Classroom" and in 2015 Jennifer will be presenting at the IB Americas annual conference.

She is a certified trainer in the DISCtm behavior assessment tool and a certified independent consultant in "Concept Based Curriculum Design" by Dr H. Lynn Erickson. Jennifer works as a consultant helping math

departments and schools transition to concept-based curriculum and instruction. She utilizes her skills as a certified Performance Coach to facilitate transition and change.

For 2014 to 2019 she will be part of the external curriculum review group for IB Diploma Mathematics based in The Hague and Cardiff.

?Currently she is working with schools to transition towards a concept and inquiry based curriculum.

Users Review

From reader reviews:

Dorothy Alvarez:

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Stephen Redmond:

Typically the book Concept-Based Mathematics: Teaching for Deep Understanding in Secondary Classrooms (Corwin Mathematics Series) has a lot of information on it. So when you make sure to read this book you can get a lot of help. The book was compiled by the very famous author. The author makes some research just before write this book. This particular book very easy to read you can get the point easily after perusing this book.

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