A series of water molecules, each consisting of one red oxygen atom and two black hydrogen atoms, are shown falling from the top left towards the bottom left. At the bottom left, a glass Erlenmeyer flask is partially filled with a clear liquid. The flask has a vertical scale on its left side with markings at 100, 200, 300, 400, and 500. Several water molecules are shown entering the flask from the top, with some already inside the liquid.

Bringing the cost of student textbooks down:

A novel approach to publishing and distributing a preparatory chemistry textbook and its tools.

Mark Bishop

preparatorychemistry.com/Bishop_WCCTA_2009.pdf

A series of water molecules, each consisting of one large orange sphere and two smaller grey spheres, are shown falling from the top left towards a flask at the bottom left. The flask is a conical flask with a scale on its side, ranging from 100 to 500. The water molecules are falling into the flask, which is partially filled with a liquid. The background is a light blue gradient.

What are your interests?

- Are you teaching a prep-chem course?
- If you are not teaching a prep-chem course, do you teach at a college that offers a prep-chem course?
- Are you a published author?
- Have you written a book that is unpublished?
- Are you thinking of writing a book?
- Are you interested in learning of ways to bring the cost of textbooks down?



An Introduction to Chemistry by Mark Bishop

- Textbook intended for use in beginning chemistry courses that have no chemistry prerequisite...for students who are
 - preparing themselves for general college chemistry.
 - seeking to satisfy a science requirement for graduation.
 - in health-related or other programs that require a one-semester introduction to general chemistry.
 - taking high school chemistry.



Chemistry-First Version

- Moved unit conversions to Chapter 8, immediately before chemical calculations in Chapters 9 and 10
- Brief introduction to elements, atomic theory, compounds, and chemical bonding in Chapters 2 and 3 with more in Chapters 11 and 12
- Early description of chemical reactions in Chapters 4-6

http://preparatorychemistry.com/Bishop_Chemistry_First.htm



Atoms-First Version

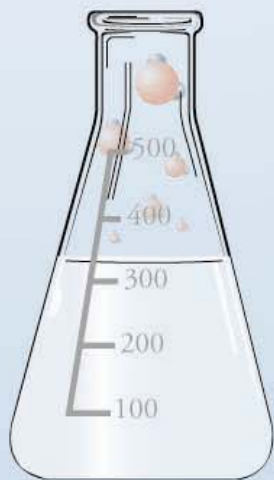
- Early introduction to unit conversions in Chapter 2
- More complete description of elements and atomic theory in Chapters 3 and 4
- More complete description of chemical bonding and compounds in Chapters 5 and 6
- Chemical reactions described in Chapters 7-9

http://preparatorychemistry.com/Bishop_Atoms_First.htm



History

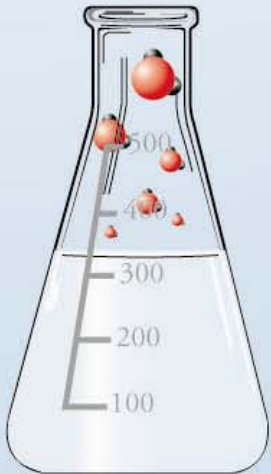
- Originally published by Benjamin Cummings in 2002
- Now published by Chiral Publishing Company with a new model for distribution.
 - Traditional printed text
 - Two versions of the text and all of their tools are freely available on the Internet in PDF form.
 - Audio version also available on the Net.



A series of water molecules (H₂O) are arranged in a descending arc from the top left towards the center of the slide. Each molecule consists of one large orange sphere (oxygen) and two smaller grey spheres (hydrogen).

Low Cost - Internet

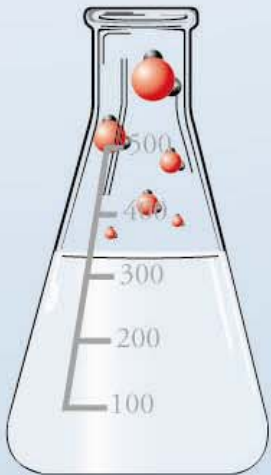
- **Option 1:** Students who have easy access to the Internet and who feel comfortable viewing the text on the computer are asked to pay \$20 for that privilege.
- **Option 2:** If \$20 creates a significant financial hardship, I'm happy to provide the Internet version of my text and tools for free. (This is on the honor system. Students can decide on their own about whether they can afford the \$20 payment.)





Low Cost (cont.)

- **Option 3:** Students who want a regular printed copy of the text can purchase one from my website for \$69.95, including shipping.
- **Option 4:** My text can be purchased through your bookstore at a list price of \$79.95.
- **Option 5:** For \$59.95, students can purchase a DVD that contains all of the website files. This includes both versions of the text and all of their supporting tools.





Emphasis on the Development of Visualization Skills

Do you ever worry that your students can write balanced chemical equations but do not have a clear mental image of the events that occur during a chemical reaction?

- In the text

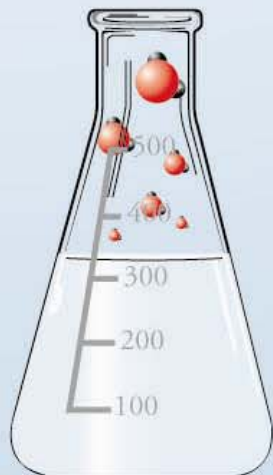
http://preparatorychemistry.com/Bishop_Book_atoms_7.pdf

- Animations

http://preparatorychemistry.com/precipitation_flash.htm

- Audio text

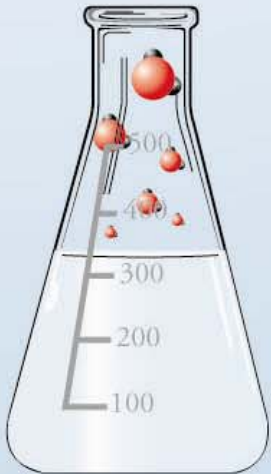
http://preparatorychemistry.com/Bishop_Section_7_3_atoms.htm



A vertical column of water molecules (H₂O) is positioned on the left side of the slide. Each molecule consists of one large red sphere (oxygen) and two smaller white spheres (hydrogen) bonded to it. The molecules are arranged in a descending staircase pattern from the top left towards the bottom left.

Identification of Skills to Review

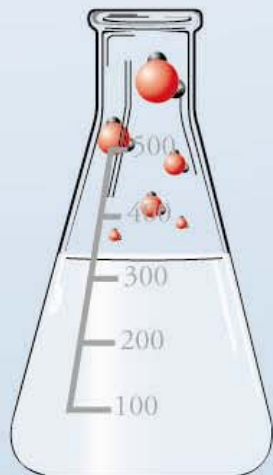
When your students have trouble with a task, do you ever think that it's because they have not completely mastered some of the lessons presented in earlier chapters?

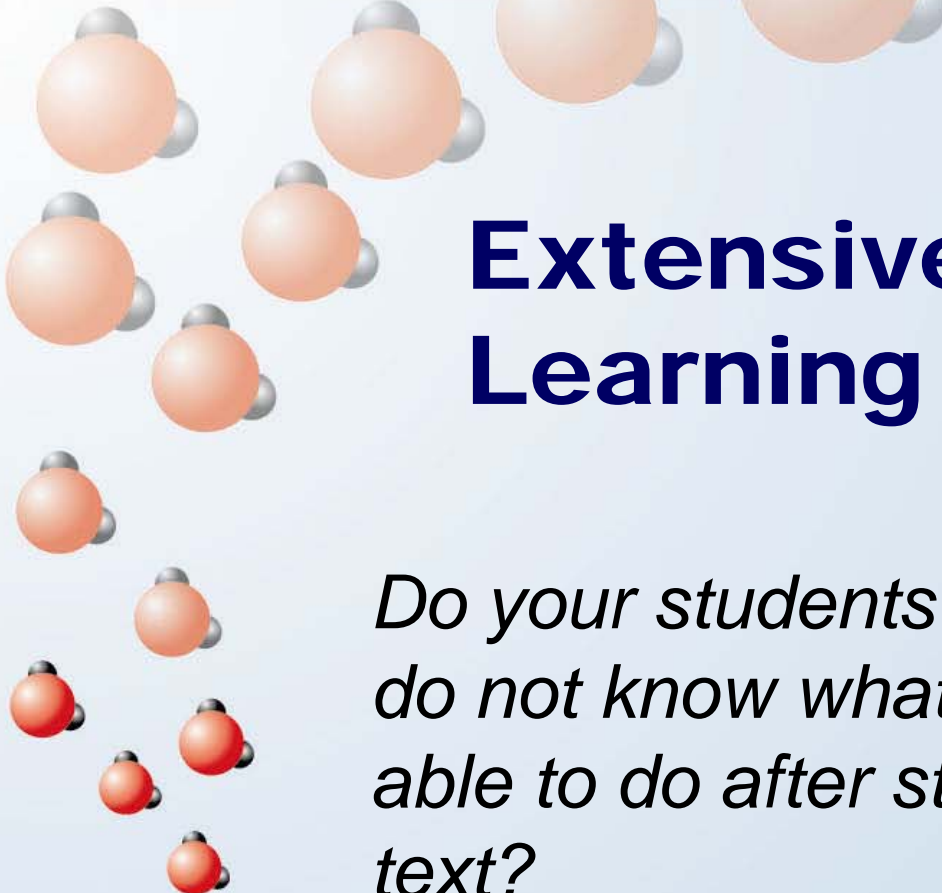


A vertical column of water molecules (H₂O) on the left side of the slide. Each molecule consists of one large orange sphere (oxygen) and two smaller grey spheres (hydrogen) bonded to it. The molecules are arranged in a descending staircase pattern from top to bottom.

Sample Study Sheets

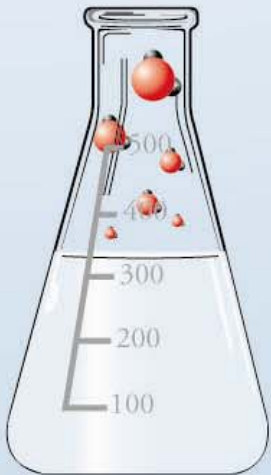
Are the best-organized students in your class often the most successful? Do you ever wish that the text you were using helped students get more organized?




A series of water molecules, each consisting of one large orange sphere and two smaller grey spheres, arranged in a descending arc from the top left towards the center of the slide.

Extensive List of Learning Objectives

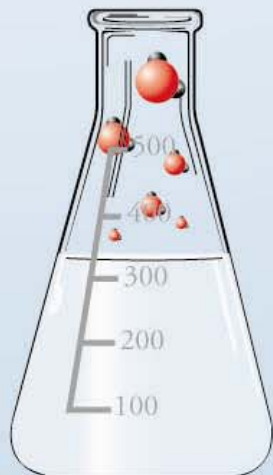
Do your students ever complain that they do not know what they are supposed to be able to do after studying a chapter in the text?



A vertical column of water molecules (H₂O) is positioned on the left side of the slide. The molecules are represented by a large red sphere for oxygen and two smaller white spheres for hydrogen, arranged in a bent shape. The column starts with a large molecule at the top and tapers down to a smaller one at the bottom, with several intermediate molecules of varying sizes in between.

Chapter Glossaries and Glossary Quizzes

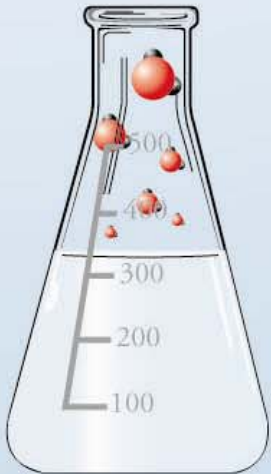
*Do you wish your text did more to help
students learn the language of chemistry?*



A series of water molecules, each consisting of one large orange sphere and two smaller grey spheres, arranged in a descending arc from the top left towards the center of the slide.

Real-World Examples

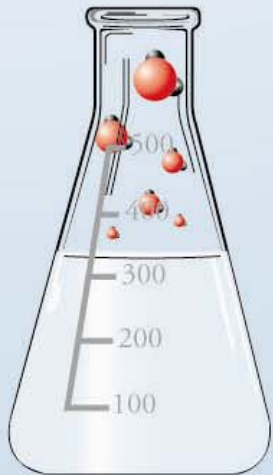
Do your students feel that what they read in their textbook is too far removed from the real world?



A series of water molecules, each consisting of one large orange sphere and two smaller grey spheres, arranged in a descending arc from the top left towards the center of the slide.

Key Ideas Questions

Have you ever wondered whether the chapter reviews in many textbooks are useful to students?



A decorative graphic on the left side of the slide. It features a vertical column of orange spheres of varying sizes, each with two smaller grey spheres attached to its sides, resembling a molecular model. These spheres are arranged in a descending staircase pattern from the top left towards a flask at the bottom. The flask is a clear Erlenmeyer flask with a scale on its side, marked with numbers 100, 200, 300, 400, and 500. The flask is partially filled with a clear liquid, and several of the orange and grey spheres are shown falling into it from above.

Tools for Text

- Layout program (InDesign)
- Photo manipulation software (Photoshop)
- Drawing Program (Illustrator)
- Acrobat
- Web site creation software (Dreamweaver or other)
- Animation software (Flash or Director)
- All of these tools come bundled as Adobe's Creative Suite CS4 Design Premium, which includes InDesign, Photoshop, Illustrator, Acrobat, Flash, Dreamweaver, and other components. It's \$598.95 for educators at the Academic Superstore.

<http://www.academicsuperstore.com/>

A decorative graphic on the left side of the slide. It features a vertical column of orange spheres, each with two smaller grey spheres attached to its sides, resembling a molecular model. These spheres are arranged in a descending staircase pattern from the top left towards a flask at the bottom. The flask is a white Erlenmeyer flask with a black outline and a scale on its left side. The scale has markings at 100, 200, 300, 400, and 500. The flask is partially filled with a clear liquid, and several of the orange and grey spheres are shown falling into it from above.

To Self Publish (1)

- Get a guide book to tell you more about what's involved in self-publishing. (e.g. *The Self-Publishing Manual* by Dan Poynter)
- Pick and register your company's name
- Register with the tax board
- Purchase an ISBN and barcode.

<http://www.bowker.com/index.php/supportfaq-isbn/49-support-isbn/380-faqs-isbn-howtoget>

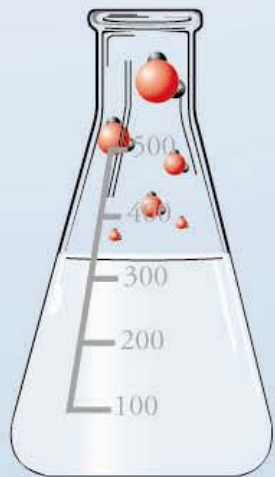
<http://www.bowkerbarcode.com/barcode/>



To Self Publish (2)

- Find a company to print the textbooks.
 - I use [Apex Book Manufacturing](#) for digital printing and [Four Colour Imports](#) for offset printing. There's a good list at <http://www.aeonix.com/bookprnt.htm>
- Purchase shipping supplies, such as boxes, tape, and packing materials (I get most of my supplies from [Uline](#).)
- Develop a shipping plan (I use FedEx or UPS for domestic shipping and USPS for international shipping)
- Purchase business software to keep you organized and to create invoices and receipts. (e.g. Quickbooks)

Making Audio Files



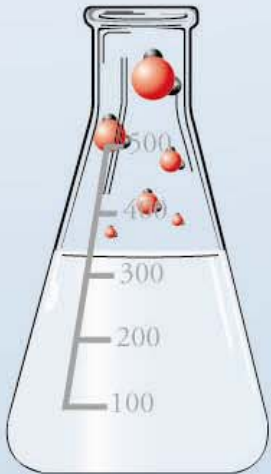


Tools for Audio Files

- Microphone (with stand and shield)
 - I use a AKG 3000 B microphone (\$349 at Musician's Friend).
- USB audio interface and audio file manipulation software
 - I use Digidesign's MBox 2 with Pro Tools LE (\$449 at Musician's Friend).

<http://www.musiciansfriend.com/>

<http://www.digidesign.com/index.cfm?langid=1&itemid=4893>



A decorative graphic on the left side of the slide. It features a vertical column of orange spheres, each with two smaller grey spheres attached to its sides, resembling a molecular model. These spheres are arranged in a descending staircase pattern from the top left towards a flask at the bottom. The flask is a standard Erlenmeyer flask with a scale on its side, marked with numbers 100, 200, 300, 400, and 500. The flask is partially filled with a clear liquid, and several of the orange and grey spheres are shown falling into it from above.

Web Tools

- Adobe Flash
- Web site creation software (Dreamweaver or other)
- Drawing Program (Illustrator)
- Photo manipulation software (Photoshop)

All of these tools come bundled as Adobe's Creative Suite CS4 Web Premium, which includes Flash, Dreamweaver, Illustrator, Photoshop, and other components. It's \$548.95 for educators at the Academic Superstore.

<http://www.academicsuperstore.com/>

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Key Web Addresses

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