

(New activities added 8/19/18)

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Week 1-3 Activities for First-Year Chemistry

This file describes how to access about 50 pages of activities on mental math, exponential calculations, and the metric system. Some activities are designed for in-class use, but most are structured as homework. The intent is to

- Assist instructors in moving a *part* of class “lecture content” to self-study, so that more time is available in class for demonstrations, discussions, feedback to students on in-class problem solving, and coverage of higher level topics, and
- Help students “automate” the recall of fundamentals and apply that knowledge to problem solving.

The activity options are designed

- For AP or college General Chemistry, when students *review* exponential calculations or the metric system at the start of the course, or
- In high school first-year or college Preparatory Chemistry, when students *first study* exponential calculations or the metric system.

In this packet,

- Part A describes the free **homework tutorials** that can be assigned to students.
- Part B provides directions for instructors to obtain **quizzes**, practice quizzes, and in-class practice sheets on topics covered in the tutorials.
- Part C offers additional activity options that review and practice the **mental math** of chemistry calculations without a calculator.

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Part A. Tutorials on Exponential Notation *and* the Metric System

For assignment by instructors, posted online are 60 pages of free homework tutorials on topics including exponential calculations and the metric system. The tutorials are organized into two chapters and 7 lessons that may be assigned all at once, gradually, and/or selectively.

Access to the online (eBook) edition of the tutorials is at

www.ChemReview.Net/InitialTutorials.html .

For students with limited internet access, the same tutorial content can be printed from a PDF and provided to students. The PDF is at:

<http://www.chemreview.net/ChemFreeCh1and2.pdf>

As Assignments In General or AP Chem

The tutorials can provide a fast homework review of fundamentals from Chem I and math courses. “Pretests” at the start of most lessons encourage students to bypass what they remember and focus where review is needed.

The lessons will likely work well enough that minimal if any lecture on these topics should be needed. A brief announced quiz on each chapter, provided at the link below, encourages timely assignment completion.

As Assignments in HS Honors and college Prep Chem

In courses to *prepare* students for AP or college chemistry, the tutorials can be assigned at a more gradual pace. A recommended pace is the assignment of 3 lessons as homework each week.

In these sections, the tutorials are recommended as homework reinforce in-class instruction. Copies of some tutorial pages may be handed out to allow students to “start homework” at the end of a long block.

Additional Tutorials

The material in the above PDF downloads is taken from the first two chapters of the textbook *Calculations in Chemistry*, available from W. W. Norton. The publisher has granted the authors of the text permission to post the first two chapters for free use by students and instructors at all times during the school year.

During certain limited periods, the publisher permits access to the first **six** chapters of the eBook edition of the text. The eBook link above will identify when the extra chapters are available. During such periods, if time permits, you may want to consider assigning additional eBook chapters.

Part B. Obtaining Quizzes

For instructors, quizzes are available on the content of tutorials. The quizzes are in an MSWord format so that you may add to, subtract from, or modify their content.

Quizzes are provided for both “Chapter/Module One Only” and “Chapter/Modules 1 and 2.”

To obtain the *latest* version of these quizzes, send an email (from a school email address) to

Quizzes@ChemReview.Net .

In the subject line, type “Send 1 and 2” Include your name and school (so we can check your school roster to verify you are a faculty member).

It is recommended that you check from time to time for updated quizzes. The filename for a newer version of each quiz will end in a higher letter.

A file of in-class “practice quizzes” to *prepare* students for each quiz can also be downloaded at

www.ChemReview.Net/CalcsCh1to6PractQuiz.PDF

(click then check your PDF downloads). For use with Chapter 1 or Chapters 1 and 2, use the first part of the first practice quiz.

Part C. “Calculations With No Calculator” -- Practice Sheets

In addition to the tutorials and quizzes, the authors of *Calculations in Chemistry* have prepared a packet of in-class practice sheets and supplemental activities aimed at helping students learn and instructors teach “mental math” skills.

Some activities are best scheduled at the time when *exponential* calculations are taught or reviewed; others will fit at that time or at later points in the school year.

The activities in the packet may be downloaded here:

For college Gen Chem or Prep Chem courses: www.ChemReview.Net/GCMentalMath.PDF

For High School and AP Chemistry: www.ChemReview.Net/MentalMath.PDF

(click and check your PDF downloads).

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