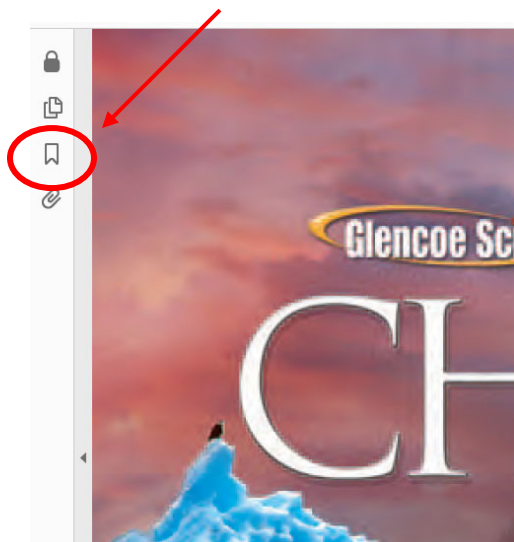
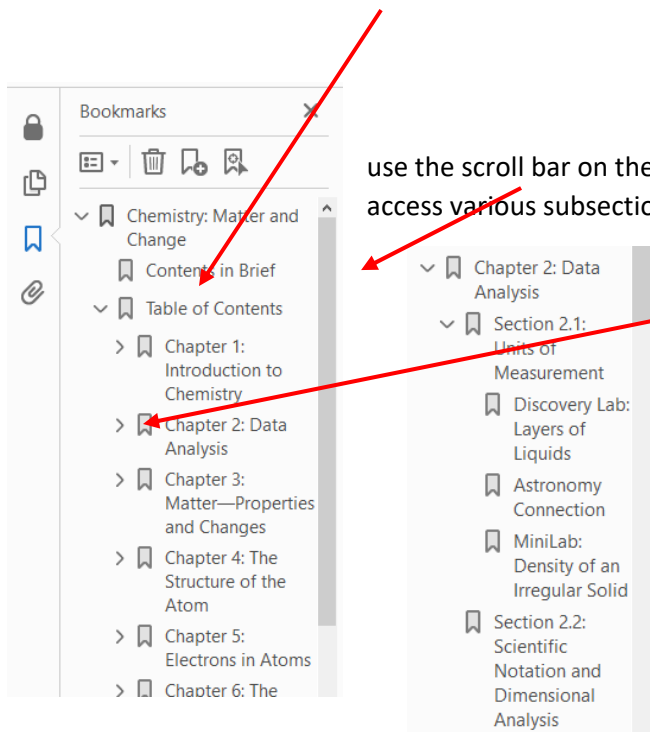


Click on the “bookmark” icon



to access the textbook’s table of content – for faster navigation



use the scroll bar on the right to quickly goto a specific chapter and use the “>” icon to access various subsections in that chapter.

clicking on the desired chapter or subsection in a chapter will bring you to that section in the textbook, which can be seen in the main “window”; e.g. ch. 2.2 – shown below

30 Chapter 2 Data Analysis chemistrymc.com/self_check_quiz

CONTENTS

Section 2.2 Scientific Notation and Dimensional Analysis

A proton’s mass is 0.000 000 000 000 000 000 000 000 001 672 62 kg. An electron’s mass is 0.000 000 000 000 000 000 000 000 000 000 000 910 939 kg. If you try to compare the mass of a proton with the mass of an electron, the zeros get in the way. Numbers that are extremely small or large are hard to handle. You can convert such numbers into a form called scientific notation.

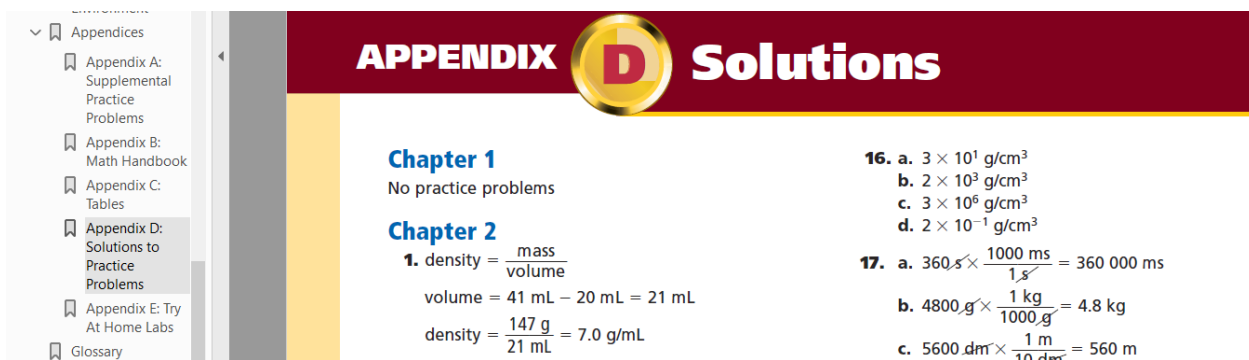
Objectives

- Express numbers in scientific notation.
- Use dimensional analysis to convert between units.

Vocabulary

Scientific Notation

To access the answer key to potential homework problems, goto appendix D



The image shows a digital interface for Appendix D Solutions. On the left is a navigation menu with a tree view containing: Appendices, Appendix A: Supplemental Practice Problems, Appendix B: Math Handbook, Appendix C: Tables, Appendix D: Solutions to Practice Problems (highlighted), Appendix E: Try At Home Labs, and Glossary. The main content area has a dark red header with 'APPENDIX D Solutions' in white text, where 'D' is inside a gold circle. Below the header, the page is divided into two columns. The left column contains 'Chapter 1' (No practice problems) and 'Chapter 2' (1. density = mass/volume, volume = 41 mL - 20 mL = 21 mL, density = 147 g / 21 mL = 7.0 g/mL). The right column contains problems 16 and 17 with their solutions: 16. a. 3 x 10^1 g/cm^3, b. 2 x 10^3 g/cm^3, c. 3 x 10^6 g/cm^3, d. 2 x 10^-1 g/cm^3; 17. a. 360 s x 1000 ms / 1 s = 360 000 ms, b. 4800 g x 1 kg / 1000 g = 4.8 kg, c. 5600 dm x 1 m / 10 dm = 560 m.

APPENDIX D Solutions

Chapter 1
No practice problems

Chapter 2

1. $\text{density} = \frac{\text{mass}}{\text{volume}}$
 $\text{volume} = 41 \text{ mL} - 20 \text{ mL} = 21 \text{ mL}$
 $\text{density} = \frac{147 \text{ g}}{21 \text{ mL}} = 7.0 \text{ g/mL}$

16. a. $3 \times 10^1 \text{ g/cm}^3$
b. $2 \times 10^3 \text{ g/cm}^3$
c. $3 \times 10^6 \text{ g/cm}^3$
d. $2 \times 10^{-1} \text{ g/cm}^3$

17. a. $360 \cancel{\text{s}} \times \frac{1000 \text{ ms}}{1 \cancel{\text{s}}} = 360\,000 \text{ ms}$
b. $4800 \cancel{\text{g}} \times \frac{1 \text{ kg}}{1000 \cancel{\text{g}}} = 4.8 \text{ kg}$
c. $5600 \cancel{\text{dm}} \times \frac{1 \text{ m}}{10 \cancel{\text{dm}}} = 560 \text{ m}$