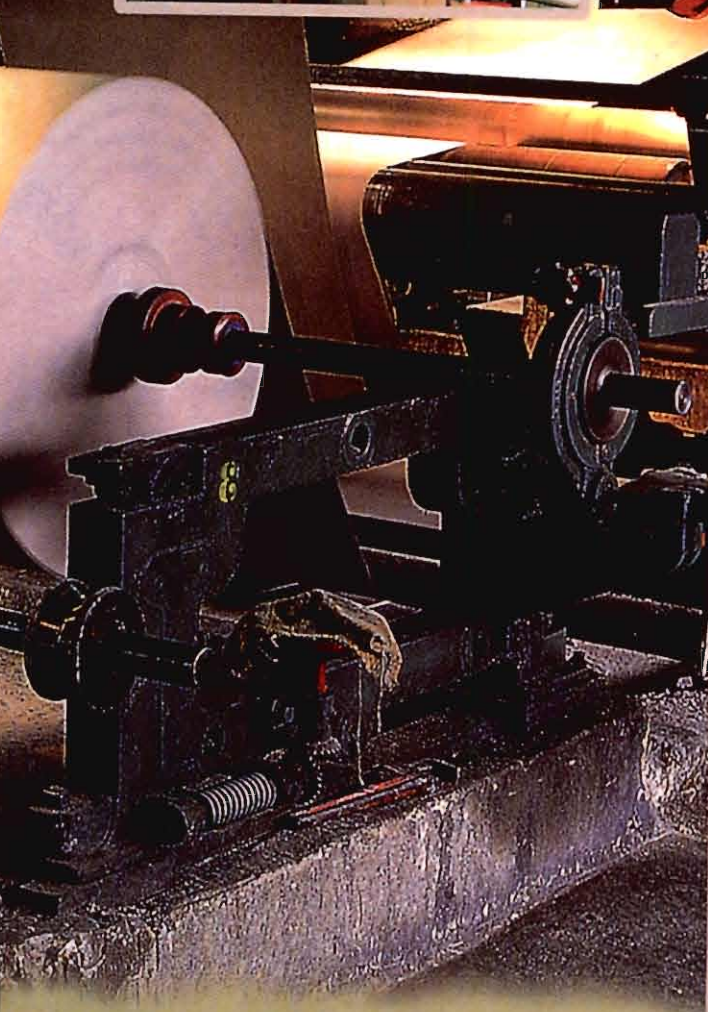


# Chemistry

ORBITALS Collection

Secondary Education  
Third Year  
Literature and Humanities  
Sociology and Economics Sections



Center for Educational Research and Development



ational  
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New Curricula

**Republic of Lebanon**

**Ministry of Education and Higher Education**

**CHEMISTRY**

**Secondary Education**

Third Year

Sections: Literature and Humanities  
Sociology and Economics

Educational Center for Research and Development




National  
Textbook  
**New Curricula**



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# CHEMISTRY

## Secondary Education

Third Year

Sections: Literature and Humanities  
Sociology and Economics

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# The National Textbook Project

The Center for Educational Research and Development (CERD) has embarked on an extensive workshop for assessing and developing the educational framework and curricula which have been placed into effect more than three years ago. With full realization of the fact that the educational cycle must continue normally through its components, and until the development process attains its aspired objectives, we are placing in the hands of students, teachers and directors of public schools, this corrected version of textbooks issued by CERD as part of the National Textbook Series.

This version is an interim stage incorporating the corrected typographical and linguistic errors discovered by CERD specialists as well as teachers and students through their daily dealings with the books. The process of assessment and development of the framework and curricula will take into consideration all the comments that have been made, or will be made, in this regard.

It is expected that once the curricula are developed and aligned with the general and specific objectives set for them, the textbooks will be realigned with the new curricular and framework requirements, including tying the content of a course to the number of teaching hours set for it during the school year, taking into consideration vertical alignment within the same course as well as the horizontal alignment with the rest of the courses.

I take this opportunity to invite all school administrators, teachers and students and all officials concerned in public and private schools alike, to promptly send their comments on these curricula and books as their contribution to enrichment of this momentous national process.

This workshop, which was launched under the kind sponsorship of His Excellency the Minister of Education and Higher Education in implementation of Decree No. 10227 embodying the educational curricula and their objectives, fits in with CERD's proclaimed new motto "Together We Build Through Education".

It is our earnest desire to see this national, all-inclusive workshop attracting the greatest amount of interest and participation to define the safest and soundest educational options that directly affect our children, as we vow to continually modernize education and develop its ways and means to keep abreast of modern developments and progress in science and technology.

Dr. Leila MALEEHA  
President CERD



# INTRODUCTION

The chemistry textbook for the third year secondary Literature and Humanities and Sociology and Economics sections attempts to achieve the goals of the scientific culture chemistry curriculum. The main goal is to prepare students to, based on scientific data and information, take efficient decisions in situations related to everyday activities, especially to health and environment.

The curriculum of the Literature and Humanities section consists of three units, food chemistry, perfumes and cosmetics, and current medicinal drugs. The Sociology and Economics curriculum contains two additional units, treatment of wastes and chemistry and economy.

Each unit is composed of one or more chapters. The content and the experimental activities of each chapter are intended to cover the stated learning objectives of the curriculum. In addition, three types of extra information are presented. Information needed by students to better understand the content is included in the text in *Italics*. Information found to be important to widen students' perspectives is included at the margins. Information on special, usually recent, topic found to be important and of interest is included at the end of each chapter as a document. Each chapter also concludes with review questions and research activities. At the end of each unit, a variety of unit questions are proposed to evaluate students' understanding of the whole unit.

It is our hope that this chemistry book, together with the other science books for the Literature and Humanities and Sociology and Economics sections, serve to the attainment of the general scientific culture goals. Comments and suggestions from all who are involved and interested in the educational process are always welcomed.

Authors



# CONTENTS



## Unit 1: FOOD CHEMISTRY 11

Chapter 1:	Carbohydrates	13
Chapter 2:	Lipids	27
Chapter 3:	Proteins	37
Chapter 4:	Minerals and Vitamins	46
Chapter 5:	Nutritional Requirements	54
Chapter 6:	Principal Foods	61
Chapter 7:	Food Diet	71



## Unit 2: PERFUMES AND COSMETICS 83

Chapter 8:	Perfumes	85
Chapter 9:	Cosmetics	95



## Unit 3: CURRENT MEDICINAL DRUGS 117

Chapter 10:	Current Medicinal Drugs	119
-------------	-------------------------	-----



## Unit 4: TREATMENT OF WASTES 143

Chapter 11:	Water and Soil Pollution	145
Chapter 12:	Solid and Hazardous Wastes	158



## Unit 5: CHEMISTRY AND ECONOMY 173

Chapter 13:	Chemistry and Economy	175
-------------	-----------------------	-----

