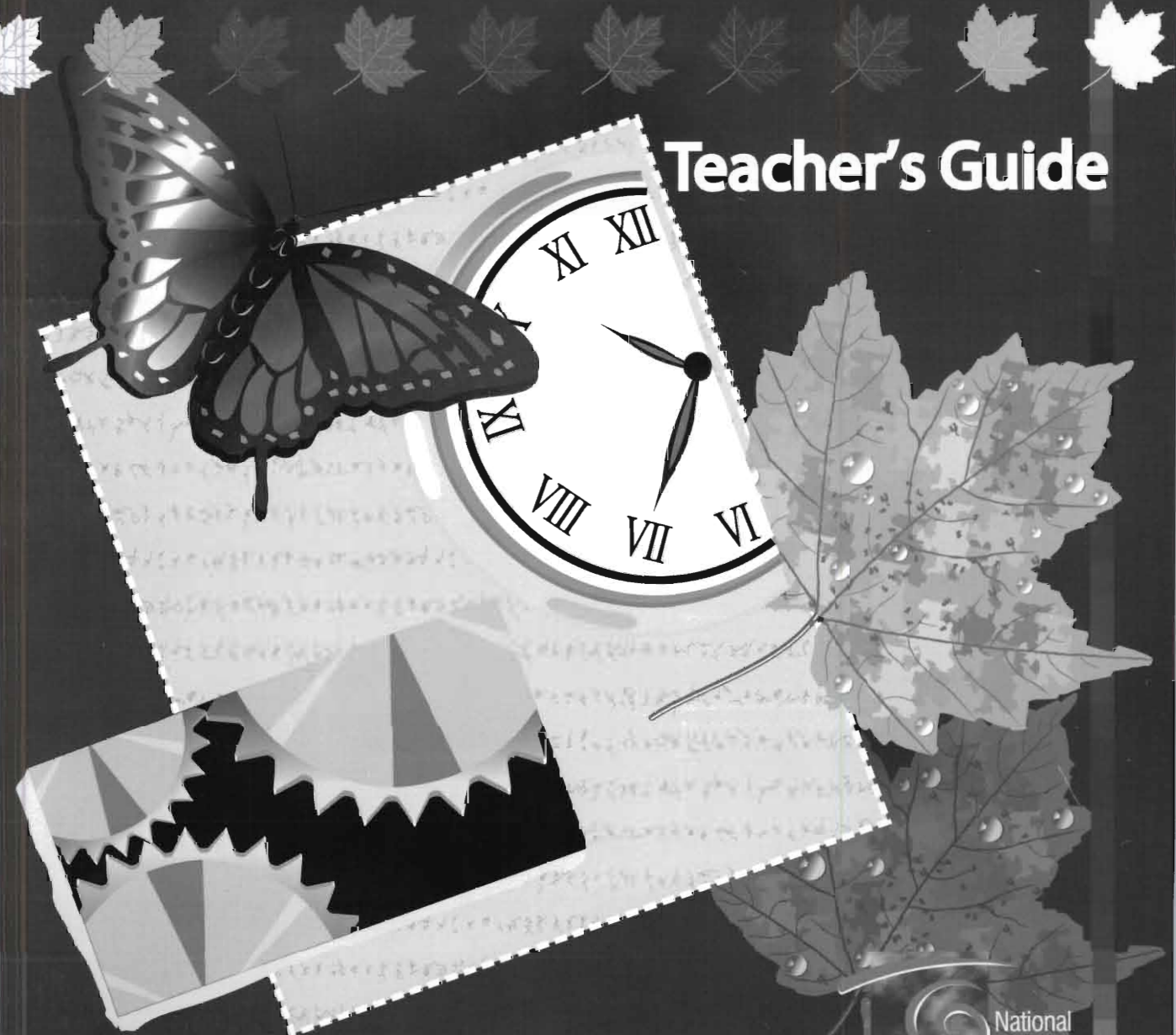


# My 1<sup>st</sup> Science Book

Grade One - Basic Education

Teacher's Guide



National Center for Educational Research and Development



National  
Textbook

New Curricula

# Republic of Lebanon

Ministry of National Education, Youth and Sports

## MY FIRST SCIENCE BOOK

Teacher's Guide

Basic Education

Grade One

General Coordinator  
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The translation into English of this book was reviewed  
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# MY FIRST SCIENCE BOOK

Teacher's Guide ■

**Basic Education**

Grade One

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**Educational Company**

for Printing, Publishing and Distribution S.A.R.L.

**Technical Preparation:** Technical Team ■ NCERD  
**Illustrations:** Graphics Team ■ NCERD  
**Production and Distribution:**  **Educational Company**  
for Printing, Publishing and Distribution S.A.R.L.  
Printing : By Green Glory

© NCERD 1998, Sin-EI-Fil, Lebanon, P.O.Box: 55264

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First Published September 1998

2<sup>nd</sup> impression 2007

3<sup>rd</sup> Impression 2010

## ... WE BUILD THROUGH EDUCATION

Four years ago, under the leadership of the Minister of National Education, Youth and Sports, the National Center for Educational Research and Development (NCERD) initiated the overall reform of the educational system in Lebanon. Today, NCERD is pleased to present the first collection of textbooks, developed in conformity with the new curricula announced by decree no. 10227, dated the 8th of May, 1997, to all those involved in the education sector.

This collection covers the first year of each of the three basic education cycles, as well as the first year of the secondary cycle. It will be followed, over the next two years, by the textbooks addressed to the remaining two years of each cycle.

The publication of these textbooks follows directly from previous steps undertaken as part of the overall effort to rebuild the educational system. The Plan for Educational Reform, the adoption of a new educational ladder, the new curricula and the new textbooks are all part of a continuous and coherent reform effort. The reform process views the education of the individual learner as a means to develop citizens capable of serving their country and self-confident adults ready to face the challenges of the twenty-first century.

Textbooks play an important role in this ambitious project because they embody the educational and civic objectives of the new curricula. In keeping with the spirit and philosophy of the new curricula, a large number of specialists who had contributed to shaping the new curricula were called upon, from both the private and the public sector, to become members of author committees. The Higher Committee for Planning and the Advisory Committee, which were created by NCERD to oversee the whole reform process, closely monitored the development of the new textbooks. In addition, NCERD sought the assistance of experts from outside Lebanon.

However, we do not claim that the textbook we present to you today is perfect, or that it does not require any revisions whatsoever. Our work is certainly far from complete. After thirty years of stagnation, it was important to act and to do so promptly. We thus considered it appropriate to view this first edition as a starting point and to subject the first collections to the classroom test. A textbook's strengths and weaknesses can really only be identified in the classroom. It is now

up to teachers and students to evaluate these new textbooks. Thanks to their collaboration, we should arrive at concrete proposals for the improvement of subsequent editions.

It should also be pointed out that textbooks have become only one of many available sources for the transfer of knowledge. Indeed, our students are confronted with a constant deluge of information from a variety of media. Consequently, it becomes imperative for students to "learn how to learn" from textbooks, as well as from other sources. This means that we must adopt new work and teaching strategies in order to transform the classroom into an interactive space between a dynamic and enterprising learner and an informed teacher. The teacher's role must lie in assisting the student to acquire knowledge and competencies, to heighten his or her critical sense and to develop teamwork and participatory skills. This is why the educational reform calls for teacher training, the establishment of a structure capable of advising teachers and providing guidance and counseling to students, and the modernization of the exam and evaluation systems to be undertaken alongside the development of new textbooks.

Our attention is now focussed on the next three years. This period will provide an experimental phase, not only for the new textbooks, but also for all the activities that have preceded or accompanied their launch. Thus, the next three years should be viewed as an evaluation phase for the overall educational system of Lebanon.

Finally, I wish to thank sincerely all those who contributed to writing, editing, designing and producing the new textbooks. We hope that our combined efforts to build the future for the children of Lebanon will contribute to the reconstruction of our country.

Beirut, July 22, 1998

**President, NCERD**

**Mounir ABOU-ASSALI**

## **Dear Colleagues and Parents**

Science Education is a vital force in helping all students recognize the critical importance of scientific developments in today's world and tomorrow's. This book has been designed in accordance with the newly reformed Lebanese national science curriculum of 1997 (decree / law No. 10227, dated May 8, 1997). The book has been designed for children of six years of age who are learning to read. It employs proven reflective reading tasks, games, pictures, and independent long range projects with a focus on much work and discussion done in class. The text is based on global education and introduces students to basic science process skills. These skills focus on observation, inferences and an introductory approach to experimentation. As the text progresses, students will master increasingly complex tasks for their age. For example, students will move from direct to open-ended inquiry, from reading and completing tables to reading and writing their information. In this way, the child observes, compares, experiments, cooperates through group work, discusses, expresses him/herself, and relates to his/her environment. Furthermore, the book emphasizes health and environmental education intermingled within certain features found in the text.

To accomplish the general goals and objectives that have been set by the Lebanese curriculum of 1997, a stress on a hands-on, minds-on approach to learning has been identified. Students are viewed as actively involved learners and not mere receivers of information. It is their job to discover the information and the teacher's job to help supervise and not give the information discovered. This we truly believe is the best way to learn Science.

**Best Wishes**

*Committee of Lebanese Authors*



## Rationale

This book has been designed in such a way that students discover their own information. Your job is to guide them through the proper inferences that they may make from their observations. In addition, a focus on primary scientific skills is essential. The text itself offers a balance between textual and investigative material challenging student misconceptions and with enough flexibility to suit individual teaching styles and classroom needs. The text presents relevant and recent facts that are used to build science concepts. Illustrations, activities relating to those illustrations and in-text questions encourage students to participate, to draw on previously learned information, to make judgments and to inquire thereby forming a basis for conceptual learning. Not to mention an introductory approach to cooperative learning.

The book also provides for the full development of science skills that are inherent in the major themes covered. Some learning skills gained through firsthand experience could be observing, inferring, classifying, identifying, and interpreting. Furthermore, most skills and activities require recording of data in chart form, teachers can easily assess whether their students have developed proficiency in skill development.

## Vocabulary in Science

Reading in Science presents students with a large unfamiliar technical vocabulary. Since students will not be reading much in the book at the beginning of the year, this does not create a problem. However, once you do reach the certain parts that require students to read the information you may want to try the following:

1. Identify the vocabulary words in each lesson.
2. Pronounce all new words.
2. Define all new and potentially difficult terms.
4. While teaching, draw student's attention towards the "visuals" in the text. This will also help them understand new words and concepts.

## Writing in Science

Since writing skills are the basics for proper language communication, it is important that students master the foundations of proper writing. Thus when using the text make sure:

1. Students have written the words properly and neatly.
2. Students write answers as well as they are given in their book. All exercises involving **some** writing abilities should be used not only for reinforcement as **an evaluative** and diagnostic aid, but also an opportunity to develop writing skills.

## Speaking in Science

At this age the form of communication is verbal. It is thus why this skill is most often used, **however** it is sometimes used improperly. It is essential here that students further **develop** this language skill. Oral communication is the most effective and common means of communicating and is the basis for a sound program in reading and writing. To enhance this:

1. Encourage students to participate through individual to class discussion, group to group discussions, individual to group discussions, individuals within group discussions. One out of many techniques discussed in the text is cooperative learning.
2. Have students act out concepts presented in the text.

## Listening in Science

Listening skills should be developed concurrently with speaking skills. This can be done by encouraging students to:

1. Listen to questions posed by the teacher or another student.
2. Listen to directions given out for carrying out activities / exercises.
3. Have good listening habits by you being a good listener to the student.

## Questioning in Science

It is important to understand and use good questioning techniques and strategies during the instructional process. Thought provoking questions and improved questioning techniques can help you maintain, develop, and sustain students interest, provide new ways to deal with subject matter, and give purpose to student's evaluations.

Besides the type of questions you ask, the number of questions you ask affects the student's response. It is easy to ask too many questions during an instruction period. This only leads to very brief student responses. It is therefore better to allow time for students to answer. This provides an atmosphere more conducive to discussion and learning. Moreover, it allows students to use the time to give a more organized complete answer.

Along with waiting a few seconds, after asking a question, pausing after a student's response is also helpful. This increases the chance that the students will add to his/her response or that other students will add to the initial response. If you follow these techniques of waiting before and after a student's response, more students may become involved and you may not need to ask as many questions.

## Education in Science

The philosophy of the new science curriculum promotes practical evaluation methods in a classroom setting and within a new pedagogical dimension, it reinforces the educational system.

The content of the new science curriculum includes a group of objectives that can be easily measured and evaluated. The student's performance is evaluated and measured after the application of what he/she has learned and not before. Furthermore student evaluation is based on listed skills that he/she has to accomplish during the school year.

This form of evaluation not only makes things easier for the student to understand what he/she needs to accomplish, and thus learn how to learn, but also provides parents with an awareness of what skills their children are supposed to achieve, therefore allowing parents to play a role in their child's educational achievement.

In order to achieve the set educational goals, the book has been structured as follows:

### **Unit Introduction**

Each unit begins with a unit introduction which informs you of things you can do in order to introduce the unit. The units are made up of several lessons that have been numbered consecutively from one unit to another.

### **Planned Observation And Activities**

Every lesson begins with an *Open-Ended Observation* where students may observe diagram(s) in their book and relate it to posters on the walls of the classroom. Here students have an open discussion in which the teacher does not inform them about what they are required to know.

Under *Guided Observations*, students' observations are gathered in order to answer certain verbal questions found in the teacher's book or proposed by the teacher. After which, students can sum up what was learned and then go on to the Activity Card.

Here, the *Activity Card* promotes certain activities that focus on the central main objective for that lesson.

Finally, assessment procedures are done via Exercises which could be; presentations, group work etc ...

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