

**SPECIAL METHOD IN  
ELEMENTARY  
SCIENCE FOR  
THE COMMON SCHOOL**

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Special method in elementary science for the common school by Charles A. McMurry

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**CHARLES A. MCMURRY**

**SPECIAL METHOD IN  
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SCIENCE FOR  
THE COMMON SCHOOL**



UNIV. OF  
CALIFORNIA

SPECIAL METHOD  
IN ELEMENTARY SCIENCE

TO THE  
LEGISLATURE OF  
CALIFORNIA



UNIV. OF  
CALIFORNIA

SPECIAL METHOD  
IN  
ELEMENTARY SCIENCE  
FOR THE COMMON SCHOOL

BY  
CHARLES A. McMURRY, Ph.D.

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## PREFACE

THIS volume is a complete revision of the "Special Method in Science" first published in 1896. It is also extended to include the entire course of the elementary school. The plan is to give a broad view of the problem of science teaching by a brief historical and critical survey of elementary science work and of the ideas thus far developed in schools.

The discussion passes from general aims to specific plans for the course of study and method of instruction. A few illustrations are also given of a full treatment of topics.

One of the greatest difficulties is to find some basis for selecting and arranging the most important and suitable topics for a course of study, where the field of science furnishes such a vast and varied collection of materials.

We have also undertaken the difficult problem of combining the usual nature study topics with a great series of studies based upon the practical applications of science to life. So far as this is successful,

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it will bring the science lessons into the closest relations to geography, history, and manual training, and, what is more important, will bring children close to the social and industrial problems of modern life.

The course of study given in Chapter IX is offered with diffidence. And yet it must be the important, central thing in all our present discussion of this subject. Our theories will amount to little until they eventuate in a reasonably good course of study.

A definite course of study needs to be backed up by a carefully selected list of books and helps. In the last chapter we have tried to give a complete list of such books as will be most useful to teachers and pupils, with the names of the publishers.

In order to meet still better the practical necessities of teachers in carrying out such a course of study, we now have in press a separate volume of "Science Lessons for Primary Grades," in which most of the primary topics are given a full treatment. It is our purpose to continue this series in two other volumes of complete science lessons for intermediate and grammar grades.

The present volume is the fifth of a series of Special Methods in the common school studies. The complete series runs as follows:—

I. Special Method in the Reading of Complete English Classics in the Common Schools.

II. Special Method in Primary Reading and Oral Work in Story Telling.

III. Special Method in History.

IV. Special Method in Geography.

V. Special Method in Elementary Science.

VI. Special Method in Manual Training and Constructive Work. (In press.)

VII. Special Method in Language. (In preparation.)

VIII. Special Method in Arithmetic. (In preparation.)

CHARLES A. McMURRY.

PALATKA, FLORIDA,

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