

**SPECIAL METHOD IN
NATURAL SCIENCE FOR
THE FIRST FOUR GRADES
OF THE COMMON SCHOOL**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649241309

Special method in natural science for the first four grades of the common school by Charles A. McMurry & Lida B. McMurry

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CHARLES A. MCMURRY & LIDA B. MCMURRY

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UNIV. OF
SPECIAL METHOD

...IN...

NATURAL SCIENCE

FOR THE

FIRST FOUR GRADES

OF THE

COMMON SCHOOL.

THIRD EDITION.

...BY...

CHARLES A. McMURRY, PH.D.

AND

MRS. LIDA B. McMURRY.

PUBLISHED BY
PUBLIC-SCHOOL PUBLISHING COMPANY
BLOOMINGTON, ILLINOIS.

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BIBLIOPHIAO

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Copyright, 1896, 1899.
BY CHARLES A. MCMURRY.
NORMAL, ILL.

EDUCATION (35)

*Printed and Bound by
Pantagraph Printing and Stationery Co.,
Bloomington, Ill.*

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UNIV OF CALIFORNIA

PREFACE.

THIS is the fourth of a series of Special Methods in the common school studies, and is designed to be a direct help to teachers in recitation work. The plan is to give a broad view of the problem of science teaching by a brief historical and critical survey of science teaching, and of the ideas thus far developed in schools.

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

The method of treating science topics in these grades is treated at some length.

Although natural science instruction is fundamentally based upon direct observation, the best books are found extremely helpful to teachers. A list of about a hundred and fifty books, somewhat carefully selected and classified, is presented for the help of teachers, and the publishers are named with addresses.

A large number of topics for first and second grade, worked out and used by Mrs. Lida B. McMurry in primary classes, is given in the full treatment.

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The plan for third and fourth grades has been worked out and more fully illustrated by examples in this second edition of the book.

It is the purpose of the author to work out in a separate volume a course of study in Natural Science for the last four grades of the common school (5th to 8th grade inclusive).

The other works of this series are:

Special Method in *Literature and History*, especially the oral treatment of stories in primary and intermediate grades. The history course for grammar grades is also discussed and outlined.

Special Method in *Reading*, a discussion of the quality, culture-value, and method of using the best classics as reading exercises. A full list of one hundred and forty-six choice books, arranged according to grades, is given.

Special Method in *Geography*, a plan of geography lessons for third and fourth grades. It deals with the selection and method of important types. The material for thirteen of these type-studies of the Mississippi Valley is given in full.

CHARLES A. McMURRY,
Normal, Illinois.

STATE NORMAL UNIVERSITY,
September 30, 1908.

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INTRODUCTORY DISCUSSION.

FOR AT least three centuries there has been abundant discourse among writers on education in favor of natural science study in the schools. Educational reformers like Comenius, Rousseau, and Colonel Parker have laid great stress upon the educative value in childhood and youth of the contact between mind and matter in the forms which nature presents. School education has always been too bookish, too much separated from objects and realities of experience.

Comenius found education in his day mired in Latin forms, technicalities, and abstractions. It was a killing process to try to awaken childlike interests and mind action upon the dead rules and inflections of a purely formal grammar. By means of his *Orbis Pictus* and other books of method he tried to infuse some degree of interest and meaning into the lifeless drills of the schools. But it was an almost hopeless task so long as Latin remained, like a vast breastwork of obstruction, at the very doorway of education. It was impossible to establish a rational system of popular education so long as a dead language stretched its lifeless body across the threshold of school life, barring

entrance to the fields Elysian. But thanks to the power and vigor of our native tongue, it has taken at last the supreme place among languages in a child's education, and when he first enters school he is in possession of this treasure. The same thing has happened in France and Germany and in other European countries.

The vernacular has become the fundamental medium of thought. One of the enormities, therefore, that vexed the souls of children two or three hundred years ago has been swept away. But the linguistic and verbal spirit of the old régime is still with us, and many teachers still think children have the ideas when they have only conned the forms in which ideas are expressed. In the days of Latin supremacy, Comenius and the other reformers tried to save instruction from empty verbalism by associating the objects in nature with the Latin names, and we have been trying, for more than one generation, by means of object lessons and nature studies, to redeem education from the dry rot of verbal memorizing. But in our day we have already got beyond the idea that natural science is simply an auxiliary, a means of making language and other studies more significant and real. Nature study stands out in its own right, an equal among such studies as reading, mathematics, and language.

It is a matter of no little surprise with many that nature study has made so small progress in