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CURRICULUM BULLETIN
Number Seven

"The Evolution of Common Things"

UNIT 4—ILLUMINATION

by
Myrna Ingram Schuck

Teacher—Rapid Learner Class
P. S. 500 (Speyer School)

1939
PUBLICATION NO. 8

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Public School 500 (Speyer School)

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UNIT 4—ILLUMINATION

MYRNA INGRAM SCHUCK
Teacher—Rapid Learner Class

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1939

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THE EVOLUTION OF COMMON THINGS

A Series of Units Developed
for Rapid Learners
At Public School 500, Manhattan,
Speyer School

UNIT 4: ILLUMINATION

by Myrna Ingram Schuck

Foreword

January 3, 1939.

Supervisors and Teachers,
Ladies and Gentlemen:

The general plan of the series on *The Evolution of Common Things*, of which this is Unit 4, was set forth at length in issuing Unit 1: Aviation.[1] The reader is referred to the Foreword there formulated by the Superintendents and the Educational Advisers. It is necessary to say only a few words here.

With each unit of our series must go the special reminder that this material has been developed with and for *very rapid learners only.* It will, therefore, be unsuitable for the generality of classrooms, in both private and public elementary schools. Children must be *tested* for determination of mental ability, and for degree of literacy, before being launched upon a project like this one. As there have been many inquiries since the publication of *Unit 1* concerning the mental tests and the literacy tests used in the selection of pupils, we may state that the I.Q.'s of our pupils which are here published, and upon which we depended primarily for selection, are derived from Stanford-Binet, while the measurements of degree of literacy are determined by means of Stanford Achievement Test. These matters have been discussed in detail elsewhere.[2]

It is the ideal of democracy that every child should be educated in accordance with his capacity to receive and serve.[3] But without mental measurement, this ideal remains a mere romanticism. We must "take the measure" of a child before we can know what his capacity for learning is, and how he should be taught. There is no way of knowing

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[1] Schuck, Myrna Ingram, *The Evolution of Common Things, Unit 1: Aviation.* Curriculum Bulletin No. 1, Board of Education, 500 Park Avenue, New York City, 1937.

[2] Hollingworth, Leta S., *The Founding of Public School 500: Speyer School.* Teachers College Record, Vol. 38, pp. 119–128, November, 1936.

[3] Butler, Nicholas Murray, Is Thomas Jefferson the Forgotten Man? Address delivered at the Parrish Art Museum, Southhampton, Long Island, September 1, 1935. Published at 405 West 117 Street, New York City.

these things intuitively. The value of this series of units arises from the fact that the work has been experimentally based on *mental measurement*, so that the caliber of the class was known *beforehand.*

Furthermore, it is to be borne firmly in mind that this handbook is not a syllabus to be followed word by word. It is a suggestive guide rather than a prescribed "course". It is an outcome of the learning of one particular group of twenty-five highly intelligent elementary school children; not a solidified body of facts and ideas to be offered to other similar groups, without variation. Any other group of young children, equally endowed by nature, might well work out the area of *Illumination* rather differently, stressing different aspects. For instance, our pupils did not especially accent the part glass has played in illumination, which might well engage the interest of another group to the comparative neglect of some aspect which was well studied by our class.

If all possible aspects of illumination were to be exhaustively covered, it is obvious that too much of the total time available would be spent on this one area of the evolution of common things; so that selective emphasis is bound to occur.

With very highly intelligent pupils, the ideal is to allow for unusual variation and individuality of interest. Also, the form of handbooks in fields being experimentally explored (as concerns the curriculum) should be allowed to vary with the teacher in charge. It will be observed that the separate units being published in our series on *The Evolution of Common Things* are not uniform in style. Since this handbook is merely a guide, perfection is not claimed in the formulation of the subject. All that is claimed is stimulating endeavor, by pupils of the elementary school, striving to understand how their world came to be what it is. The trend and scope of their intellectual curiosity and interest are made clear, for the guidance of those who have responsibility for the education of very rapid learners.

Lest it be feared that the pupils engaging in such studies as those being reported in our series on *The Evolution of Common Things* may fall by the wayside in the subjects of the prescribed curriculum of the elementary school, a graph is herewith presented (Figure 1) to show standing in the "regular" subjects, as of the term when Unit 4: Illumination was being made. It will be seen how far above the age-

grade norms our pupils stand, as compared with unselected pupils the nation over, in mastery of such subjects as are prescribed for all. This superiority is of course *not caused* by our enriched program. It was present to the same extent when our pupils entered the Rapid Learner Classes, *before any enrichment program had been undertaken,* and is due to their native intelligence. The great amount of idleness and boredom implied by the presence of pupils in grades where all the matters taught had already been learned by them long before was the very reason for inaugurating the enrichment program.

The unposed photographs of pupils at their work illustrating this unit were taken by *The News,* of New York City, and are here reproduced by courtesy of *The News,* except for the photograph in Figure 3, which is a gift from *The Literary Digest* to our store of photographic records. The development of modern "candid" photography enables the taking of photographs while pupils are unaware, and naturally engaging in their classroom activities; so that such photographs constitute valuable records of education.

BENJAMIN B. GREENBERG,
Assistant Superintendent of Schools,
Executive Officer of the Institute of Educational Research, Division of School Experimentation, Teachers College, Columbia University, for the Board of Education of New York City.

LETA S. HOLLINGWORTH,
Professor of Education,
Executive Officer of the Institute of Educational Research, Division of School Experimentation, Teachers College, Columbia University, for Teachers College.

THE EVOLUTION OF LIGHT*

When grandma was a little girl,
And was sent up to bed,
She carried then a tallow dip
Held high above her head.

When mamma used to go upstairs,
After she'd said "Good Night",
Her mother always held a lamp,
So she could have its light.

As soon as sister's bedtime came,
When she was a little lass,
If she found the room too dark,
Mamma would light the gas.

Now when the sandman comes for me
I like to have it bright;
So I reach up and turn the key
Of my electric light.

And maybe my dear dolly,
If she lives out her days,
Will see right through the darkness
With magical X-rays.

—ANNA F. MAGEE.

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ILLUMINATION

A Unit Developed with a Class of Rapid Learners

Introduction

The children quickly came to a decision as to the unit of work they desired to develop during our fourth semester. A general discussion of the previous unit, "Communication",[4] recalled the valuable contributions of Thomas Alva Edison; also that mention of his electric incandescent lamp was made during the biography periods conducted in conjunction with that unit of work. The mention of Edison and his lamp terminated our search for a topic, as the children felt that artificial light was one of the most common and most valuable of all contributions to our present day comforts, and a subject upon which they were not very well informed.

Little did we realize, when we set out upon our task, what small progress was made in artificial lighting from prehistoric times until the late 18th Century. Little did we realize that the Betty lamp in common use in Colonial and early 19th Century America was no different in principle from the shallow shell and stone lamps of prehistoric man.

Mental Caliber of the Pupils

The rapid learner classes were reorganized at the beginning of the fourth semester, the children above ten years of age, chronologically, being placed in one group and those below ten years of age in the other. The complete range of I.Q., as present before reorganization, was maintained in each group. The C. A., I.Q., sex and reading ability of each member of the group is tabulated below, to make clear to those who may desire to undertake a similar study the mentality required of a group which can complete the work satisfactorily, with a feeling of success for all of its participants. Children of lesser degrees of intelligence will be found unsuited to carry out the work as here presented.

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[4] Schuck, Myrna Ingram, *The Evolution of Common Things*. Unit 2: Communication. Curriculum Bulletin No. 3, Board of Education, 500 Park Avenue, New York City, 1938.

The status of the class may be summarized, as follows. In September, 1937, when the study of *Illumination* was begun, the median chronological age of the children was 9 years 0 month. The median I.Q. (S–B) was 140. In December, 1937, when the study was in progress and was about three-fourths completed, the median reading age (Stanford Achievement Test) was 13 years 9 months, and the median grade status in reading was 7.9, indicating a reading ability equal to the norm for the end of the seventh grade.

				Dec., 1937 Standford Achievement	
Child	C.A.	I.Q. (S-B)	Sex	Reading Age	School Grade
1	8-3	200	F	17-0	U.M.*
2	8-2	184	F	13-3	7.5
3	9-5	172	F	15-9	9.8
4	9-2	171	F	12-7	6.8
5	8-9	163	M	16-2	U.M.*
6	9-6	159	M	16-6	U.M.*
7	9-0	155	M	16-2	U.M.*
8	9-3	150	M	14-6	8.5
9	9-4	147	M	13-3	7.5
10	9-10	144	M	15-2	9.2
11	8-9	143	F	13-3	7.5
12	8-11	142	M	15-2	9.2
13	8-2	140	F	13-5	7.5
14	8-6	140	M	13-9	7.9
15	8-11	140	F	12-11	7.2
16	9-2	140	M	13-11	8.1
17	9-9	138	F	14-4	8.4
18	9-0	138	F	13-9	7.9
19	9-4	137	M	13-7	7.8
20	10-0	137	F	14-6	8.5
21	9-1	136	M	11-1	5.2
22	9-8	132	F	13-9	7.9
23	8-10	131	F	13-3	7.5
24	8-10	130	F	12-10	7.1
25	9-2	120†	M	12-6	6.7

* U. M. stands for Undistributed Maximum, and denotes that the reading ability of the child listed is above the point where it can be measured in terms of grading, by the Stanford Achievement Test, falling somewhere along the distribution for senior high school pupils.

† Highly specialized ability in schematic design (Pintner-Paterson I. Q. 155).