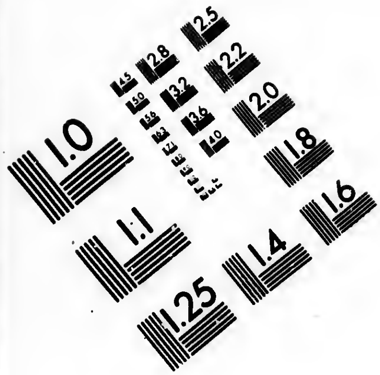


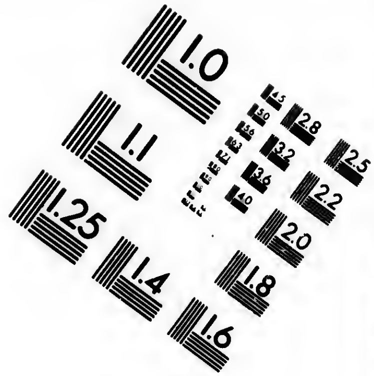
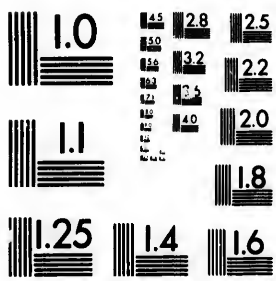
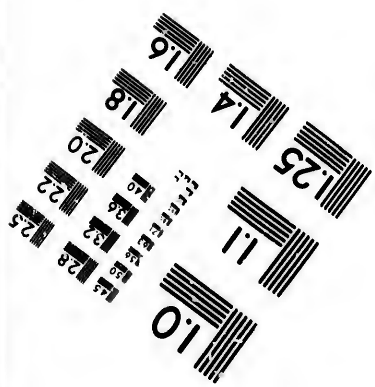
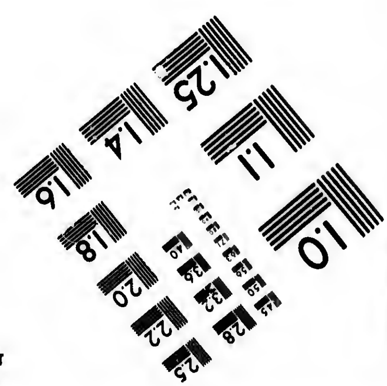


IMAGE EVALUATION TEST TARGET (MT-3)



6"





Photographic Sciences Corporation

23 WEST MAIN STREET
WEBSTER, N.Y. 14580
(716) 872-4503

CIHM/ICMH
Microfiche
Series.

CIHM/ICMH
Collection de
microfiches.

Canadian Institute for Historical Microreproductions / Institut canadien de microreproductions historiques

© 1984

Technical and Bibliographic Notes/Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- ☐ Coloured covers/ Couverture de couleur
- ☐ Covers damaged/ Couverture endommagée
- ☐ Covers restored and/or laminated/ Couverture restaurée et/ou pelliculée
- ☐ Cover title missing/ Le titre de couverture manque
- ☐ Coloured maps/ Cartes géographiques en couleur
- ☐ Coloured ink (i.e. other than blue or black)/ Encre de couleur (i.e. autre que bleue ou noire)
- ☐ Coloured plates and/or illustrations/ Planches et/ou illustrations en couleur
- ☐ Bound with other material/ Relié avec d'autres documents
- ☐ Tight binding may cause shadows or distortion along interior margin/ La reliure serrée peut causer de l'ombre ou de la distortion le long de la marge intérieure
- ☐ Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/ Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.
- ☐ Additional comments:/ Commentaires supplémentaires:

- ☐ Coloured pages/ Pages de couleur
- ☐ Pages damaged/ Pages endommagées
- ☐ Pages restored and/or laminated/ Pages restaurées et/ou pelliculées
- ☑ Pages discoloured, stained or foxed/ Pages décolorées, tachetées ou piquées
- ☐ Pages detached/ Pages détachées
- ☑ Showthrough/ Transparence
- ☐ Quality of print varies/ Qualité inégale de l'impression
- ☐ Includes supplementary material/ Comprend du matériel supplémentaire
- ☐ Only edition available/ Seule édition disponible
- ☐ Pages wholly or partially obscured by errata slips, tissues, etc., have been refilmed to ensure the best possible image/ Les pages totalement ou partiellement obscurcies par un feuillet d'errata, une pelure, etc., ont été filmées à nouveau de façon à obtenir la meilleure image possible.

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	12X	14X	16X	18X	20X	22X	24X	26X	28X	30X	32X
				✓							

The copy filmed here has been reproduced thanks to the generosity of:

Ralph Pickard Bell Library
Mount Allison University

The images appearing here are the best quality possible considering the condition and legibility of the original copy and in keeping with the filming contract specifications.

Original copies in printed paper covers are filmed beginning with the front cover and ending on the last page with a printed or illustrated impression, or the back cover when appropriate. All other original copies are filmed beginning on the first page with a printed or illustrated impression, and ending on the last page with a printed or illustrated impression.

The last recorded frame on each microfiche shall contain the symbol → (meaning "CONTINUED"), or the symbol ▽ (meaning "END"), whichever applies.

Maps, plates, charts, etc., may be filmed at different reduction ratios. Those too large to be entirely included in one exposure are filmed beginning in the upper left hand corner, left to right and top to bottom, as many frames as required. The following diagrams illustrate the method:

L'exemplaire filmé fut reproduit grâce à la générosité de:

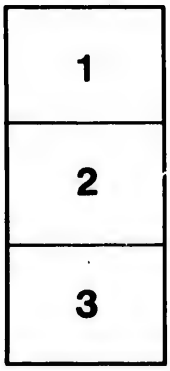
Ralph Pickard Bell Library
Mount Allison University

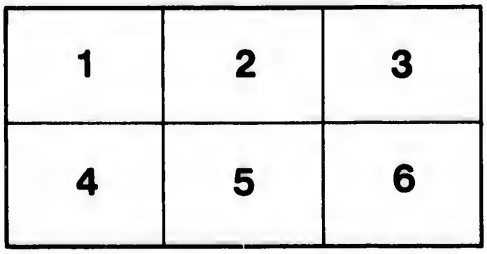
Les images suivantes ont été reproduites avec le plus grand soin, compte tenu de la condition et de la netteté de l'exemplaire filmé, et en conformité avec les conditions du contrat de filmage.

Les exemplaires originaux dont la couverture en papier est imprimée sont filmés en commençant par le premier plat et en terminant soit par la dernière page qui comporte une empreinte d'impression ou d'illustration, soit par le second plat, selon le cas. Tous les autres exemplaires originaux sont filmés en commençant par la première page qui comporte une empreinte d'impression ou d'illustration et en terminant par la dernière page qui comporte une telle empreinte.

Un des symboles suivants apparaîtra sur la dernière image de chaque microfiche, selon le cas: le symbole → signifie "A SUIVRE", le symbole ▽ signifie "FIN".

Les cartes, planches, tableaux, etc., peuvent être filmés à des taux de réduction différents. Lorsque le document est trop grand pour être reproduit en un seul cliché, il est filmé à partir de l'angle supérieur gauche, de gauche à droite, et de haut en bas, en prenant le nombre d'images nécessaire. Les diagrammes suivants illustrent la méthode.





7.50

NOTES ON EDUCATION:

A PRACTICAL WORK

ON

METHOD AND SCHOOL MANAGEMENT.

BY

J. B. CALKIN, A.M.,

PRINCIPAL OF THE NORMAL SCHOOL, TRURO, N. S.

A. & W. MACKINLAY,
HALIFAX, N. S.
1893.

PREFACE.

THIS book has been prepared more especially for the use of Normal School students. Hence some portions of it are outlines and jottings, rather than full exposition; the necessary unfolding of details being left for oral work in the class-room. Indeed, the book is, for the most part, a collection of "Notes" which, for several years past, have formed the basis of class lectures. The hope is indulged, however, that the treatment of the various topics is sufficiently clear to render the book suggestive and helpful to such teachers as may wish to gain professional knowledge and skill by private study and self-criticism.

The writer makes little claim to originality of ideas on the subjects presented. He has not aspired to invent a "new education," or to discover new ways of arriving at the old. His aim has been to present briefly those methods of teaching and management which have been followed by successful educators, and which have been, to some extent, verified by his own experience.

No discussion of the mental powers has been attempted, for the simple reason that any space which could be afforded for such purpose would be entirely inadequate for more

than a bare outline. A subject so closely related to the education of the young ought not to be disposed of so hastily. The writer believes, however, that the ideas which have been presented in the following pages are in entire harmony with the teachings of psychological science.

This work is in effect divided into four parts :—

The first six chapters discuss general educational principles ; Chapters VII.-XV. give practical suggestions on the teaching of various branches included in common school education ; Chapter XVI. treats of School Organization, and Chapters XVII. and XVIII. discuss the subject of School Management.

Here and there throughout the book, acknowledgments are made for borrowed material ; and yet it would be too much to assert that all obligations have been recognized. In a somewhat extensive reading of educational works, during a period of many years, ideas have been accumulated, and forms of expression may have been retained, while the sources have been forgotten.

J. B. CALKIN.

NORMAL SCHOOL, TRURO, N.S.,
February, 1888.

CONTENTS.

CHAPTER I.

SCOPE AND CHARACTER OF EDUCATION.

CHAPTER II.

KNOWLEDGE AND DEVELOPMENT.

CHAPTER III.

METHOD.

CHAPTER IV.

THE ART OF QUESTIONING.

CHAPTER V.

ATTENTION.

CHAPTER VI.

CLASS WORK.

CHAPTER VII.

READING.

CHAPTER VIII.

FIRST STEPS IN READING.

CHAPTER IX.

SPELLING.

CHAPTER X.

ORAL LESSONS.

CHAPTER XI.

OBJECT LESSONS ON POSITION, DIRECTION, AND FORM.

CHAPTER XII.

LANGUAGE.

CHAPTER XIII.

GRAMMAR.

CHAPTER XIV.

GEOGRAPHY.

CHAPTER XV.

ARITHMETIC.

CHAPTER XVI.

SCHOOL ORGANIZATION.

CHAPTER XVII.

SCHOOL MANAGEMENT.

CHAPTER XVIII.

SCHOOL PUNISHMENTS.

NOTES ON EDUCATION.

CHAPTER I.

SCOPE AND CHARACTER OF EDUCATION.

The value of an ideal.

1. "It is worth much," says a noted author, "to have a good ideal of anything that is worth doing. The grandest lives are but approaches to grand ideals." How valuable then to the teacher, as an inspiring and guiding force, must be a noble conception of the possibilities that lie within his reach! For what work has grander aims or is fraught with more important results than the education of the child? The skilled worker in wood or metal effects wonderful transformations. The deftly-strung musical instrument seems almost a thing of conscious life and intelligence as it expresses the soul symphonies of him whose fingers sweep the

keys. The labours of the teacher are not directed to the moulding of dead matter, but to the unfolding of the immortal mind, —to the development of those faculties of the soul which stamp upon the human being the image of the great Creator.

It is, indeed, worth much to the teacher to have a high and definite aim; to feel that he is intelligently working out a noble purpose; and to have a well-grounded conviction that the means which he is using are fitted to secure the end in view. The workman who without plan lays brick after brick wherever he can find for it a lodging-place, may build up a huge pile, a mass of brick and mortar, but he will certainly fail to erect a well-proportioned edifice. So the teacher must remember that he has a higher and nobler mission than lodging a few facts in the memory. Out of the routine of each day he should seek to gather some imperishable material and build it into right character, the proper outcome of his work.

The spirit of the teacher.

2. The teacher should realize that the destiny of an immortal spirit is committed

to his care. The true teacher is in the highest sense a philanthropist who, by a thorough consecration of energy and life, aims at the emancipation of mind and the uplifting of the human being to a higher plane of existence, usefulness, and enjoyment. Among the first qualifications for such service are feelings of true benevolence towards those to whom it is rendered, and of responsibility for the kind of work done. The man or the woman who has no love for children and no tender sympathy with their weaknesses may well pause at the threshold of the school-room, or turn his footsteps to some more congenial field of labour. The school-room is not the sphere of the hireling or of him who can give but perfunctory service. Spirit and life and love must underlie every other qualification of the teacher. He who feels this love deep down in his soul, and desires to fan its fire into intenser burning and brighter flame, will do well to study the lives of those who, by ardent devotion and self-sacrifice, have sought to awaken the world to a higher conception of the

teacher's work. Let him try to catch the inspiration of such educational reformers as Pestalozzi and Frœbel and Stowe; especially let him sit at the feet of the Great Teacher, imitate His example, and weigh the import of His solemn words: "Whoso shall offend one of these little ones, it were better for him that a millstone were hanged about his neck and that he were drowned in the depth of the sea."

The primary condition of mind.

3. The child is born into the world possessed of potential rather than actual energy. He is entirely destitute of knowledge, and his powers of action are either very feeble or altogether dormant. His mind, however, is not to be regarded as a blank table to be written upon; but as a germ awaiting the proper conditions for its awakening and unfolding. These conditions are supplied in the process of education.

Definition of Education.

4. Education, in its widest sense, may be defined as the development of all that pertains to the child as a human being. It should be the aim of the educator to secure to the child the nearest possible approach

to the perfection of humanity, to make him all that he is capable of becoming, physically, mentally, and morally. The ideal of education is the setting forth of the human being with full command of all the conditions of usefulness and happiness, fitted to discharge every obligation arising out of the various relations of life, and prepared for a higher stage of existence in the unseen world.

"Education cannot create; it can only help to develop to reality what was already a possibility; it can only help to bring forth to light the hidden life." (*Rosenkranz.*)

"The word education comes to us from the Latin verb *educare*, to train, nurture, or bring up a child, physically or mentally; and this again is connected with *educere*, to lead or draw out. Thus we see that the root idea of education is the leading out, the training or cultivation, of the powers or capabilities of action with which man is endowed. This development of the faculties depends upon their proper, frequent, and regular use; and thus exercise, both physical and mental, becomes a matter of

prime importance to us—a necessity of our well-being. 'The intellect,' says Aristotle, 'is perfected, not by knowledge but by activity. Rightly used the powers expand, strengthen, and progress towards perfection, but if allowed to remain unemployed they lose their elasticity—their power both of growth and of ready action—and move only in a lethargic and feeble manner when called upon."

The complex nature of the child.

5. The complete education of the child must regard him on every side of his complex nature. It must care for him as an animal, possessed of a complicated physical system with its various organs by which are carried on such vital processes as digestion, respiration, circulation, and the generating and distributing of nervous force. It must have respect to his mental and moral nature, providing right conditions for awakening and developing every faculty, including intellect, sensibility, will, and conscience. Further, the complete and symmetrical education of the human being must be guided by those laws which arise out of the interdependence of the various

powers, physical, mental, and moral, upon each other, and it must never lose sight of the fact that the healthful state of any one power is conditioned on the well-being of the others. Human education may thus be divided into various branches as *Physical Education*, *Intellectual Education*, and *Moral Education*.

Educational agencies.

6. Many factors or agencies are concerned in the work of awakening the latent powers of the child and in moulding his character. Some of these factors are accidental forces which work without design or conscious educative purpose. These forces arise out of the child's environment and the circumstances of his daily life, including every incidental influence which brings a new experience or tends to fix the impression of a former one. Those educational forces which have a direct purpose and aim are presented by such agencies as the school, the family, the workshop, the church, and books. It is indeed to the operation of such agencies as designedly aim to impart knowledge, to develop power, and to train to facility in some definite

line of action, that the term education is generally applied.

The function of the school.

7. As the public school is but one of the many forces employed in the work of education, it must not be charged with the whole duty of caring for the physical nature, of informing and developing the mind, of training in technical skill, and of cultivating the moral and religious nature. It must not be expected, indeed, to perfect the child in any one of these spheres, but rather to give him an impulse toward self-education. The special function of the school is the care of the intellect, or that faculty of the child's mental nature which has to do with knowledge; and in this department its highest attainment consists not so much in the amount of knowledge imparted as in the culture of the desire to know, and in training in right methods of learning. Through its intellectual and moral discipline it should lay a broad basis on which the pupil may safely build the superstructure of his future intellectual and moral life.

School-education aims to make the pupil

self-dependent. It has done its work well when it has prepared him for successful work in the higher school of self-education by giving him the ability to avail himself of the accumulated knowledge of mankind, and by developing such powers of observation and thought as will enable him to gather new knowledge by original research in the field of nature.

The relation of the school to the child's physical nature.

8. Whilst the school is not a gymnasium for the training of an athlete, it should have due regard to the child's physical nature. The teacher should be well acquainted with the laws of health, and should see that, as far as may be practicable, these laws are observed in the school-room. Especially should the child suffer no bodily harm through the ignorance or neglect of the teacher in relation to the important matters of ventilation, light, physical exercise, proper position in sitting and standing, frequent change of position, and variation of study. All injurious forms of punishment should be avoided, as well as unnecessary restrictions on the freedom of the child, which may result in

temporary discomfort or permanent harm. Exclusive attention to the furnishing and developing of the mind is too costly, and defeats its own ends, if it sows the seeds of incurable bodily disease. Moreover, mental energy and activity are dependent on health and vigour of body, so that the best intellectual results may not be reached in consequence of neglecting the child's physical nature.

The relation of the school to practical life.

9. Again, while it is not the business of the common school to give that specific training which develops the practical skill required in any given pursuit or trade, yet the knowledge and discipline which it imparts should underlie success in every sphere of practical life. It is the function of the common school to impart that general intelligence which shall open up the avenues leading to the specific knowledge of the vocations, and to develop that general versatility and power which, when directed into particular channels, ensure technical skill.

The relation of the school to morals and character.

10. Further, while the common school should leave to the family, the Sunday

school, and the church, the inculcation of theological dogmas and denominational creeds, it should be a grand moral agent in leavening our youth with sentiments of honour and virtue, in instilling principles of truth, honesty, and fidelity, and in training to habits of industry, temperance, and benevolence. In the domain of practical virtues, however, it should effect its object largely by indirect means, using to this end the example of the teacher and the incidents of every-day experience, and making its influence contribute both to the maintenance of order and the development of character.

The two functions of education.

11. School education, in its specific character, involves two elements—knowledge and power; or, otherwise stated, it has two functions—informing and developing. It is essential to successful work that the teacher clearly apprehend the nature of these functions and their relation to each other. Knowledge alone is not education. Much of the knowledge gained at school is soon forgotten; it is in the residuum of power that the gain lies. This remains a

permanent possession. The test of education rather lies in what one is able to do than in what he knows. Can he observe? Can he think? Can he work out knowledge for himself? Can he use the knowledge which he possesses in carrying out the purposes of practical life? In the work of the school both instruction and discipline are important, but the knowledge element should be held subordinate to that of discipline. That the mind is a power to be developed rather than a receptacle to be filled is a sound maxim in education.

CHAPTER II.

KNOWLEDGE AND DEVELOPMENT.

Knowledge and words.

12. Knowledge may be defined as that state of mind which arises from the apprehension of truth. It consists of ideas of things and their relations. The teacher should guard against mistaking the semblance of knowledge for the thing itself. Failure to discriminate between words and knowledge is one of the commonest and greatest mistakes in practical teaching. Words are the husk or shell; they may or may not contain the kernel. They are arbitrary signs, having no natural resemblance to the thing for which they stand. It is through association that they come to represent ideas and suggest them to the mind. If a word has not thus acquired this power to bring up a mental picture of what it represents, it is mere sound without sense or significance.

The primary source of knowledge.

13. To the young child just setting out in life words are wholly destitute of meaning. He must, through his powers of

observation, obtain his ideas exclusively from things, the primary source of knowledge. No telling can possibly give the young child the elements of knowledge. Thus, for example, the words used for expressing form, as round, square, and triangular; or those for colour, as red, green, and blue; or those for taste, as bitter, sweet, and sour, cannot, in the first instance, convey to the child an idea of these qualities. The child gains the idea primarily through his own experience in seeing or tasting; he then receives the word as the name of the idea; and he subsequently associates the word and the idea, so that the one suggests the other. The case is precisely the same with persons in every stage of mental development, as regards the first experience of any simple idea. Suppose, for example, that one reads of the recent discovery of a new colour; the name given to this colour conveys no idea whatever of what the colour is like. Seeing alone can give this knowledge.

Ideas gained through language.

14. After the learner has, through his experience, made considerable progress in

the acquisition of ideas with their appropriate terms, he can, through the medium of language, gain definite knowlege of an unknown complex object, provided the qualities of such object, taken individually, and the words by which they are named form a part of that old experience. Suppose he is told of an object which he has not seen, that it is nine inches in length, one inch in width, flat, thin, and smooth like the blade of a knife, that it is elastic, white, semi-transparent, of the hardness and general appearance of bone. If the separate ideas expressed by inch, nine, length, width, flat, etc., have already become a part of the mind's furniture, the description gives materials for a distinct mental picture; if these ideas have not been experienced, the description is worthless as a source of knowledge.

Well-known words may fail to convey ideas.

15. Again, it is to be noted that the words employed to convey knowledge may be well-known signs of old ideas, and yet fail in their purpose as instruments of thought. The food may be good, but if the digestive organs are inactive, it will

afford no nourishment; so knowledge is conditioned on mental action. That language may serve its purpose, as in the description given in the preceding paragraph, the active mind must, by its power of imagination, combine the various elements into a complete mental picture. Similarly also in a process of reasoning, as in the demonstration of a proposition, if any real knowledge is received, the mind must by its own activity mark the relation of one idea to another and recognize the conclusion in the premises.

Memorizing not education.

16. It is evident, therefore, that the mere memorizing of words is not education; nor is the ability to recite these words a true test of knowledge. It should be remarked, however, that there are many degrees between absolute ignorance and a clear and full apprehension of truth. Words when memorised may be partially understood, the ideas which they represent may be "seen through a glass darkly;" and yet they may be profitably received by the mind and held by the memory as material for the future elaboration of thought.

The evolution of mind.

17. The mind is originally a latent germ, a bundle of possibilities. Mental development is the evolution of this germ, or the converting of the possible into the actual. When the mind has been once awakened to activity it may continue to act by a self-moving power, one state of mind following another according to a regular law of succession; or it may be governed in its mode of action by some external force such as the educating influences to which it is subjected. Mental growth is conditioned on mental activity. This principle may be variously stated, as, *Exercise is the law of Development;* or, The mind is developed into whatever it is capable of becoming only by the exercise of its own powers.

First ideas through the senses.

18. The mind is awakened from its original dormant condition through the excitement of some organ of sense, as sight or touch, by an object in the external world. It is at first very sluggish in responding to these outward influences, being scarcely awakened to consciousness and probably retaining no permanent impression. By repeated action of this kind it

acquires power to act with greater facility and energy; it experiences a distinct change of state corresponding to the quality of the object and to the particular organ of sense acted upon. This mental change is a simple idea and may be regarded as the beginning of knowledge. Interest in external objects is soon aroused, and the power of attention, or of holding the mind to one object for a definite period, is developed. Through one or more of the senses the mind now observes different qualites of the same object; it combines the various simple ideas or percepts resulting from this observation into one compound mental picture. This compound mental picture, or sense-concept, as it has been called, represents an individual object, as a rose or a dog.

Memory and language.

19. Meanwhile a new power has been unfolding,—the memory,—by which the mind registers or fixes an idea so as to be able to recall it and recognize it as something previously experienced. In the work of registering and recalling ideas the

mind summons language to its aid. And here it may be observed that the development of language does not anticipate the progress of ideas. The first words of the child are names of simple ideas and individual objects.

The imagination.

20. Following this power of the mind to accumulate ideas through the presentative faculty and memory, comes that of working over these mental pictures and forming new ideas from old materials. The mind analyses its complex pictures and recombines the elements into new wholes; or it constructs these pictures by translating significant words into ideas. This mode of mental activity is called the imagination.

The thinking faculty.

21. At this stage of its development the mind enters upon a new phase of activity. It reflects on the knowledge which it has accumulated through observation and memory, and elaborates new truth by a process of thinking or reasoning. The knowledge which is gained through observation is a knowledge of individuals

and is called concrete knowledge;* that which is elaborated by a process of thought is called abstract knowledge. The idea or notion formed of each individual object is complex, being made up of various attributes. The mind now compares the objects which have come under observation, marking their resemblances and differences. Taking those objects that resemble each other, it drops from its notice all points of difference and forms a general idea or concept which includes the attributes possessed by all in common. Ideas of this kind re-

* "Strictly speaking, there is no absolute line between concrete and abstract instruction; but, in general, the degree of concreteness may be estimated by nearness to sense, and the degree of abstractness by remoteness from sense. . . . The following statements illustrate the almost insensible transition from the so-called concrete to the abstract. The simple truth is that both elements appear in each statement; but the concrete predominates in the first members of the series, and the abstract in the last:

1. This rose (exhibiting the object) is red.
2. That rose was red.
3. That rose was beautiful.
4. Roses are beautiful.
5. Rose is a beautiful colour.
6. Beautiful colours are admired.
7. 'A thing of beauty is a joy for ever.'"

W. H. Payne: *Science of Education*, p. 77.

present a whole class. Thus by dropping out of sight the individual peculiarities of all the roses that have been observed, the mind forms the general notion of rose. Advancing to yet higher stages of thought, the reasoning faculty derives principles and laws from individual facts; or it reverses the process and infers the particular truth from the general. The rules of grammar and the principles of science are derived by the first process, which is called induction; the demonstrations in geometry are examples of the other process, which is called deduction.

Knowledge and growth the products of mental action.

22. In all the modes of mental activity that have been noticed, the mind deals with knowledge, acquiring knowledge of individuals or concrete knowledge, acquiring knowledge of classes or abstract knowledge, reproducing knowledge, and recombining knowledge. These various activities also have a reflex influence upon the mind, each mode of activity producing its own specific effect. In gaining knowledge by observation the mind acquires increased power to observe, and so of the other

powers, each activity developing facility for itself. The net products of mental activity are knowledge and development or growth.

Order of development.

23. It has been shown that the faculties of the mind are not all awakened at the same time. The order of development is predetermined by the very nature and function of these faculties. The mind cannot reason without something to reason about; it cannot remember without some old knowledge to recall; it cannot form general notions except by comparing individual notions. The awakening must begin with the perceptive faculty.

The mental powers of the child all active.

24. It must not be supposed, however, that there is any extended period during which the mind is confined to any one mode of working. All the faculties are awakened in childhood; but all do not at this stage act with equal energy. The powers of observation are in most vigorous exercise, gathering in new knowledge of the external world; meanwhile the thinking powers are, in a more feeble manner, comparing and generalizing the ideas thus

acquired, and evolving new knowledge out of the old.

Food of the mind.

25. Some writers speak of knowledge as the aliment of the mind, representing it as holding the same relation to mental development as food to the nourishment and growth of the body. This figure does not present the true state of matters. Knowledge and development are both alike effects or productions of mental activity, though they may not be in uniform proportion. The knowledge acquired by a certain effort may be forgotten and yet the power resulting from that effort may remain a permanent possession. Again, much knowledge may be gained through such outside help as to involve little mental effort on the part of the learner, and hence be accompanied with little mental growth. Mental exercise is the one essential condition of development.

Classification of studies.

26. The various subjects of learning are sometimes classified as practical or useful—knowledge studies and disciplinary studies. The sciences are placed in the first-named class on account of their utility for guid-

ance in practical life; classics are placed in the other class because of their effect in developing the mind. This distinction, however, can determine only relative values. It would be difficult to name a study which does not yield more or less of both kinds of value. Every study impresses its own specific character on its discipline, and hence a well-balanced or symmetrical development demands variety of studies.

A study may be best as useful knowledge or as discipline according to the way in which it is pursued. Thus arithmetic is of greatest practical value to the accountant when it is taught in such a manner as to secure accuracy and readiness in going through the various arithmetical processes —when it simply makes ready reckoners. It is vastly more useful as a means of mental discipline when the learner is guided to the discovery of principles and the reasons for these processes.

The discipline, also, resulting from the pursuit of any study will vary greatly both in kind and extent according to the

way in which it is pursued. Botany, for instance, studied from nature by the direct examination of plants, is a most effective means of developing the powers of observation and classification; studied from the text book exclusively, it exercises the memory chiefly.

All useful knowledge not needed by everybody.

27. The fact that a branch of knowledge is of great practical value in the affairs of life is not in itself a reason for including that subject in a general course of study. Navigation, for example, is very useful, but it is scarcely advisable to require it of every pupil at school. Again, it would be difficult to over-estimate the importance of analytical chemistry; but it would not be desirable to make a skilled analyst of every one.

The domain of practical knowledge is too wide to admit of its full comprehension by any one mind. The division of labour, which distinguishes civilised society from the ruder conditions of barbarism, assigns to each individual his own special department of activity, and that knowledge is, in general, most useful to each which bears

most directly on his own profession or occupation. When, on occasion, one has need of knowledge lying outside his own special sphere, he finds it most advantageous to avail himself of the help of him who has made that department of knowledge a specialty.*

Kinds of Discipline.

28. Discipline is either *specific* or *general.* A study serves a specific purpose when it develops some particular faculty or power. Thus botany cultivates the power of observation chiefly; physics, the power of inductive reasoning; geometry, the power of deductive reasoning. A study serves a general disciplinary purpose when it gives tone to the mind as a whole, exercising both intellectual and emotional activities and developing an easy poise of its faculties. Such studies as language, history, and literature, which relate to man as an active, intelligent, and progressive being, are of this character. Music, painting, poetry, and good society are the chief instruments in promoting that form of

* See Herbert Spencer's *Education*, Chap. I.; Bain's *Education as a Science*, Chap. V.; W. H. Payne's *Contributions to the Science of Education*, Chap. III.

general discipline denominated *culture*. The most potent factor of culture which the school-room can furnish is the personality of the cultured teacher.

The moral value of knowledge.

29. The moral value of knowledge should not be overlooked. Besides its value as a practical guide and as a means of discipline, knowledge relieves the tedium of commonplace life, touches new springs of action, and opens up new sources of enjoyment which lead the thoughts away from low and debasing subjects and elevate men to a higher type of manhood. This value of knowledge is exceedingly well presented by a French educationist in the following quotation:—"To cause gross natures to pass from the life of the senses to the intellectual life; to make study agreeable to the end that the higher pleasures of the spirit may struggle successfully against the appetites for material pleasures; to put the book in the place of the wine bottle; to substitute the library for the saloon; in a word, *to replace sensation by idea*,—such is the fundamental problem of popular education." (*Compayre.*)

School education should prepare for self-education

30. The school can yield no mature fruitage: it can simply sow the seed and supply suitable conditions for germination and early growth. It cannot impart all necessary knowledge or unfold the mental powers to their fullest capacity. It should, at least, develop the desire for knowledge and show how to learn. The teacher may judge of the success of his work by its effect in enabling the child to do without him. He has done well if he has given the pupil an impulse to self-culture and trained him in habits of independent effort. "The end and aim of education is the emancipation of youth. It strives to make him self-dependent, and as soon as he has become so, it wishes to retire and leave to him the sole responsibility of his actions." (*Rosenkranz.*)

CHAPTER III.

METHOD.

Method based on rational principles.

31. In its general sense method is the course pursued for the purpose of securing a certain definite end. Teaching, which is the process by which school education is carried on, has for its end the awakening of the mental activities of the child so as to secure knowledge and mental power. A rational method of teaching is conditioned on the laws of mental action, the state of mental growth already attained, and the mental change sought after. It presents the various subjects in such a way as to bring them within the reach of the child's intelligence, and it deals with the child in such a way as to awaken him to vigorous self-activity.

The flexibility of method.

32. A rational method of teaching is governed by law, but its laws are those of organic being, and not those of inert matter. In the inorganic world the law of gravitation, the law of chemical combina-

tion, and the law that governs the formation of crystals require, in their several spheres, mechanical exactness and rigid uniformity. The laws of life allow freedom for growth and individuality of character. No two leaves or blades of grass or human minds are exactly alike. The type is maintained under variety of form. Method of teaching, therefore, should not be a cast-iron thing, unyielding and inflexible, treating pupils of all ages and degrees of mental development in the same manner; but it should adjust its treatment to the ever changing condition of the growing mind. Without ignoring the gradually unfolding powers of thought, it should keep the younger children in close contact with *things*, and it should provide those of more fully developed reflective powers with that knowledge which has been systematised by processes of thought.

The two aspects of method.

33. Method may be viewed in two aspects :—

(1.) As relates to the way in which the subject is presented.

(2.) As relates to the mental attitude demanded of the learner.

In respect to the mode of presenting the subject, method may be either *inductive* or *deductive;* or it may be *analytic* or *synthetic.* As to the mental attitude of the learner, he may be treated either as an active being or as a passive recipient of knowledge.

The inductive method.

34. The inductive method presents the subject of study as it exists in nature, that is in the concrete form, as individual things, examples, or facts. The learner begins with individuals and works up from them by processes of observation and thought to various forms of abstract knowledge, as principles, definitions, and rules. The course is one of investigation and is similar to that pursued by an original explorer. As an illustration of this method of teaching, suppose the aim is to develop the idea of a cube. The children examine several cubes of different sizes, and discover that all are alike in having six equal square faces. By comparing these blocks with others of different forms, the children gain a more definite notion of those forming the

subject of the lesson. The term *cube* is given as the name of these blocks, and the children are then required to give a definition of a cube. In the same manner the rule for the formation of the plural of nouns may be derived from examples.

The deductive method.

35. The deductive method presents knowledge in the abstract or generalized form, as definitions, principles, and rules. The children commit these to memory and apply them to particular cases. For instance, the child learns the definition of a transitive verb and the rule relating to its government. He meets with a verb which answers to the definition, and he infers that what the rule asserted of the whole class belongs to this individual. It will be seen that this method begins where the inductive method ends. It sets before the learner at the outset the product of other people's thinking.

The analytic and synthetic methods.

36. The analytic method presents the object first as a whole and proceeds from this to the examination of its parts and qualities. The synthetic method begins with the constituent parts and ends by

combining them into a whole. A flower may be studied according to either of these methods. The *word method* of teaching reading is analytic; the *phonic method* is synthetic.

Relation of the analytic and synthetic methods to the deductive and inductive methods.

37. All deductive teaching is analytic. It proceeds from the general truth to the contained particular truth. All inductive teaching is synthetic, since it builds up or derives general knowledge from individual examples contained under the general knowledge. Analytic teaching, however, is not always deductive; nor is synthetic teaching always inductive. The analytic method does not necessarily begin with generalized knowledge; nor does the synthetic method necessarily lead up to such knowledge. The learner may be guided from an individual whole, as a flower, or a word, to the examination of its constituent parts; or he may proceed from the constituent parts to build up the individual whole, as in making out a word by combining its elementary sounds.

The first step analytic: from the individual whole to its parts.

38. For reasons already stated young children should be taught chiefly through objects. They fail to gain clear ideas through the medium of words, and they must, therefore, be brought into contact with things, the primary source of knowledge. Especially do they need to be introduced to every new subject through its concrete truths as they are presented in individual objects and examples. As these objects are complex, possessing various parts and qualities, the first step in the teaching process is analytic, setting out from the individual whole, and leading the learner to observe the constituent parts and properties. When a new idea is developed, the appropriate word is given. In studying the leaf of a plant, for example, the learner is guided from the leaf as a whole to the examination of its colour, form, and parts through all the details of its base, margin, apex, and frame-work. In this manner leaves of different plants are examined separately.

The second step inductive: from the particular to the general.

39. Guided by the inductive method along the course pursued by an original

explorer, the learner should now be led to compare several individuals which agree in certain features and differ in others. Fixing his attention upon certain concrete qualities, he works up to the general or abstract notion. Thus from red, blue, and yellow, he may arrive at the general notion of colour; or from round, square, and triangular, he may arrive at the general notion of form. Examining individual objects as to their resemblances and differences, he groups them in classes.—Thus, for example, by comparing the framework of different leaves, he observes two general plans: hence he classifies leaves as parallel-veined and netted-veined. Then by observing the netted-veined leaves more closely, he sub-divides them into radiate-veined and feather-veined. Or, guided along a somewhat different line of observation and thought, the learner is led to form definitions by discriminating between the accidental qualities peculiar to certain individuals of a class, and the common and essential qualities of those individuals.

Adaptation of methods to ends

40. The adaptation of the analytic and inductive methods, as described, to secure to young children the proper ends of teaching is obvious. The learner is taken to nature, the true source of knowledge, he is guided along the line of investigation, and every step in his progress is intelligible. Having worked out the knowledge for himself, he not only has a clear apprehension of its meaning, but he has it firmly impressed on his memory. Further, such a course is well suited to exercise and develop the powers of observation and reflection, and to train the pupil to become a successful independent searcher after truth.

The deductive method not suited to young children.

41. It has already been shown that the deductive method presents the subject in the abstract or generalized form. It does not bring the learner into contact with things, but presents, through the medium of language, the product of other people's observation and thought. The learner is required to commit to memory definitions, principles, and rules, as contained in text books. As a method of

teaching beginners it is highly objectionable. The child is unskilled in those processes of thought through which the abstract principles were derived; he cannot trace these principles back to the individual examples on which they are based; and hence he fails to understand them. He commits words to memory, but gains no real knowledge, and with the exception of the memory there is no exercise of any of the mental powers. But the worst evil of such a course remains to be stated. The child acquires the habit of hearing, reading, and repeating words without looking for ideas. This habit may be retained through life, impeding his progress in knowledge and mental development.

Memorizing unintelligible words.

42. It is sometimes plausibly urged that the child may profitably memorize knowledge in its generalized form, even though he does not understand the meaning of words which he is learning. It is maintained that in early youth the faculty of memory is more active, that even its unintelligent exercise is not irksome, and

that the words which, at this stage, may be wholly without meaning, will be treasured up, and, with the development of the child's intelligence, will be fully understood. This argument would have more force if it were a question of giving the child unintelligible words to commit to memory, or giving him nothing. The more excellent way is to give him real knowledge.

Abstract knowledge may be given to advanced pupils.

43. There is a stage in his progress, however, when the learner can profitably deal with the abstract knowledge of the text book. The process of investigation is slow, and the field of knowledge is wide. No one can afford, in any one subject, to go over all the ground travelled by the explorers that have gone before him. When the learner has become so familiar with the processes of generalization that he can, as it were, see the particular truths through the general terms in which they are expressed, he can with intelligence and profit enter upon the inheritance of formulated knowledge which has, through the medium of language, been handed down through the ages.

Larger stores of knowledge are thus brought within the reach of the learner; his time and strength are economized; and his mental powers are developed by being brought into contact with the products of well-ordered thinking.*

The apprehension of knowledge involves mental activity.

44. The second aspect of method relates to the mental attitude of the learner. Knowledge cannot be poured into the mind of the pupil by the teacher as water is poured from one vessel into another. The mind cannot receive knowledge without putting forth some effort to apprehend the truth which is placed within its reach. One may gaze upon an object of sense and not really see it intelligible words may fall upon the ear and awaken no idea, because the mind

* "Sense impressions are the original material out of which the mind, by its elaborative processes, constructs the whole fabric of thought. . . . When a sense impression has once been established there is no further need of the object that produced it. Forever after, the symbol of the thing is all that the processes of thought require. . . . The senses have served their purpose when they have furnished the mind with the crude materials of thought."—W. H. PAYNE, *Contributions to the Science of Education* (New York) p. 81.

does not place itself in that active attitude necessary for the reception of the knowledge presented. As was stated in a preceding chapter, if the pupil gains knowledge of an object from verbal description, he must form a mental picture of that object by building up the elements into a whole; and if he gains knowledge by reading the demonstration of a proposition in geometry, he must enter into the reasoning process and mentally anticipate the conclusion before he has read the words by which it is stated.

Active and passive attitudes.

45. There are, however, degrees of mental activity, and the clearness, fullness, and permanence of one's knowledge are proportionate to the intensity of this activity. The child who sees an object and examines it for himself has a more definite knowledge of that object than he could gain from a verbal description. When a child discovers the qualities of an object by his own self-activity, he has put forth more effort than if he had simply noticed those features as they were pointed out to him; and when a pupil

solves a problem in geometry by his own unaided efforts, he has exerted more mental power than if he had merely recognized the correctness of the process as it was worked out by another. The statement that the teacher may deal with the learner as an active worker or as a passive recipient of knowledge, is to be understood in a relative sense; since if the learner really receive knowledge, there must be some degree of mental activity. The teacher treats the child as a passive being in doing for him what he is capable of doing for himself. The teacher treats the child as an active being when he does not see for him or think for him, but stimulates and guides him in working out knowledge by the full exercise of his own powers of observation and thought.

Knowledge gained in different ways.

46. Knowledge is acquired in one of three different ways. It is either discovered through the exercise of the perceptive powers, it is inferred through a process of reasoning, or it is received through direct telling. A proper method of teaching discriminates with regard to

what the pupil should observe, what he should infer, what he should be told, and what he is, in the meantime, not ready to receive. The nature of the knowledge and the circumstances must determine the proper course in any given case. A good practical rule is, *Do not tell a pupil what he is able to find out for himself.* In conducting an object lesson, the teacher should not see for the pupil, but should lead him to discover, by the exercise of his observing powers, the parts and qualities of the object; nor should he think for him, but should lead him, by the use of his powers of reflection, to trace relations, to compare, to generalize, and to infer. Facts, as in history and geography, must be told either by the text-book or by the teacher—that is if the pupil has arrived at that stage when he ought to know them. There is no practicable method by which a pupil can be led to discover for himself such knowledge as the length of a river, the height of a mountain, or the particulars of a battle. Frequently, however, those matters which

require to be told form a basis for the exercise of the pupil's thinking powers. Particular statements may lead up to a principle or a rule; general statements may be traced to their origin in individual examples. The pupil may be led to infer the effect from the cause, or the cause from the effect.

Method may be right in one aspect and wrong in the other.

47. The teacher may pursue the proper method in so far as relates to the form in which he presents the subject, beginning with the concrete and working up to the abstract, and making everything intelligible; but yet doing all the observing and all the thinking, or the chief part of it, himself. The child understands and assents to the truth; but his attitude is so passive, that he acquires little mental development. Hence the most fluent talker is not always the best teacher. He is too apt to display his own powers instead of exercising those of his pupils.

Explanation.

48. Explanation is simply removing the mountain or the hill that obstructs the progress of the pupil—making matters *plain*. It is quite possible to make the rough places

too plain. The pupil should be trained to overcome difficulties and surmount obstacles by manly effort and skilful ingenuity. If he cannot climb the hill by facing it squarely, he may take a zig-zag course obliquely along its side, until he reach the top. Every successful effort inspires with fresh courage and gives added strength. In working out knowledge the pupil must not be left entirely to himself. He may not feel the force of motive sufficiently strong to induce effort; or he may not know how to approach a difficulty, or how to overcome it by a succession of efforts. Hence he requires to be stimulated and guided in observing and thinking by the direct influence of the teacher. He often needs to be directed to the proper point of observation, and to be guided in his comparisons and judgments. When he blunders in his gropings, it is better to lead him to see his error, than to tell him that he is wrong. When he falters and becomes discouraged, his interest must be sustained, and he must be encouraged with timely aid.

CHAPTER IV.

THE ART OF QUESTIONING.

49. A properly conducted lesson includes a judicious combination of *examination*, *teaching*, and *telling*. By examination the teacher tests the knowledge of his pupils, by teaching he awakens their self-activity and guides them to the discovery of new knowledge, and by telling he gives them suitable terms for the expression of new ideas, and also such needed knowledge as they are unable to find out for themselves. To a large extent, the work of examination and teaching is carried on by means of questions. The ability to question skilfully is an attainment on which the teacher's success in conducting a lesson largely depends.

A lesson includes examination, teaching, and telling.

50. Questions are used for two distinct purposes, — they either test the pupil's knowledge, or they guide him to the discovery of new knowledge. On the basis

Questions classified on the basis of purpose.

of purpose, therefore, questions may be classified as—

(1.) *Tentative* or *examining* questions.
(2.) *Teaching* or *guiding* questions.

Both kinds of questions are needed in conducting every lesson, whether the lesson be oral or a recitation from the text-book. The oral lesson, however, calls more especially for skill in the use of teaching questions, and the text-book lesson for skill in the use of examining questions.

Examining questions.

51. Examining questions are used to ascertain the amount of knowledge possessed by the pupils. They are employed, for example, in testing their knowledge of a text-book lesson which has been assigned for preparation; also, in conducting a review of old work; also, at the beginning of an oral lesson for the purpose of finding out what knowledge of the subject the pupils already possess; and at the end of such lesson to test the knowledge worked out during its progress.

An examining question should be so framed as to be a thorough test of knowl-

edge on the matter which it covers. Hence it should not, by implication or otherwise, include its answer, nor should it in any way suggest to the pupil the answer which he is expected to give. Questions requiring *yes* or *no* for their answer are generally of this character. The teacher frequently indicates, by his tone of voice, which of these monosyllables he is looking for.

Clearness is another important characteristic. This excludes all haziness arising from unintelligible words, faulty arrangement of words, or too many words. Conciseness contributes much to the clearness of a question. A long question confuses the pupil. The mind is kept so long in a state of tension in order to grasp the meaning, that, in the effort, it breaks down in utter bewilderment.

Precision or definiteness, also, is a characteristic feature of good questioning. A vague or indefinite question points to nothing in particular, but leaves the pupil wandering in all directions. It admits of two or more answers equally correct, and

the pupil can only guess which one is required. Precision limits the question in such a way that only one correct answer can be given. "What can you say of this apple?" says the unskilled questioner, when he wishes a statement respecting its size, its form, or its colour. Or he asks—"What did God give the children of Israel while they were in the wilderness?" The children might correctly say—He gave them manna; or, He gave them quails. The teacher wishes them to say—*He gave them the Ten Commandments.*

In general, it is best to avoid all unnecessary words, and state the question in the most direct and simple form. "What is the population of Europe?" is better than—"How many can tell me the population of Europe?"

Examination should proceed in logical order.

52. Questions should follow each other naturally, so as to unfold the parts of the subject in the order of their dependence. Each question seems then to be suggested by the preceding answer, and the answers, if properly given, form a connected and logical statement of the subject.

This mode of treatment exercises and develops the intelligence of the pupil and also aids him in remembering what he has learned.

Examining questions classified on the basis of ground covered.

53. Examining questions are either *specific* or *topical*. A specific question bears on a single feature of an object or on some one particular of a paragraph; a topical question is more comprehensive, including in its range several of the various features of an object or the facts of a paragraph. The examiner may give several specific questions to bring out the various particulars desired, or he may give one topical or general question covering the same ground. Thus in questioning on a battle, he may ask — When was the battle fought? Where was the battle fought? Why was the battle fought? What forces were engaged on each side? Who were the commanders? Who gained the victory? Or instead, he may ask for a full account of the battle. In examining on the metal *lead*, the teacher may give separate questions on its colour, its degree of hardness, its specific gravity,

its fusibility, etc.; or he may ask for a full description of the metal.

Topical questions

54. The topical question demands more effort and ability on the part of the pupil than the specific question. Hence, whilst it may be too difficult for very young children, it has special advantages in the case of those who are more advanced. It gives freedom to the pupil, throws him upon his own resources, tests his knowledge more thoroughly, trains to connected thinking, and cultivates language. This mode of examination also economizes time.

A topical question may often be followed with advantage by specific questions bearing on points covered by this topical question. Specific questions may thus be given to bring out some particulars which have been omitted in the general answer, or to ascertain if the terms used are understood, or to emphasize some particular, or to test some member of the class.

Show how to deal with topical questions.

55. Young children require to be guided and sustained by specific questions. In training them to deal with topical questions, the teacher should give a topical

question, but without insisting on a full answer, or even on any answer; he should proceed to bring out the various particulars by means of specific questions. When the pupil has, in this way, learned the extent of the general question first proposed, the teacher should repeat this question and require a full answer. For example, the teacher asks for a description of an object which he brings before a class. He receives no answer or a very imperfect one. He then proposes the following questions:

Of what material is it made?
What is its colour?
What is its form?
What is its size?

He now returns to his original question and asks for a description of the object.

The pupil needs to be guided and sustained by teaching questions.

56. As already stated in a preceding chapter, the child should be taught in such a way as to lead him to become an independent worker. It is not to be supposed, however, that during his school life he is likely to attain that fulness of development which will enable him to dispense with the aid of the teacher. Children

when left to work out knowledge wholly by themselves fail to pursue any systematic plan or to exercise long-sustained attention; hence their efforts are desultory, short-lived, and comparatively unproductive. They need to be directed, encouraged, and sustained by some external influence. This guiding and upholding power is exerted by the teacher, in large measure, through the instrumentality of teaching questions.

The pupil's position is not precisely that of an original investigator who experiments and explores without knowing the results at which he may arrive. He pursues a more direct course under the guidance of the teacher, who knows, at the outset, the end at which he is aiming, and the general course to be pursued in order to reach that end. If the knowledge sought after is to be gained by observation, the teacher gives such questions as will direct the pupil's attention to the proper quarter and guide him in a systematic examination of the object. If this knowledge is to be gained by a process of thinking, the teacher asks

such questions as will bring before the pupil's mind the objects or qualities to be compared, or those old ideas which he would have the pupil use as data from which he may derive new knowledge. The questions lead the pupil to discern various relations which he had not previously apprehended, as resemblance and difference, cause and effect, part and whole.

Teaching not telling or hearing recitation.

57. Through the instrumentality of teaching questions, an oral lesson becomes something very different from a lecture, and a text-book lesson much more than hearing a recitation. Oral teaching includes telling, but it also makes the pupil a co-worker with the teacher in finding out new knowledge. So also in conducting a text-book lesson, the teacher may give new knowledge by direct statement for the purpose of awakening interest, illustrating and impressing some fact in the lesson, or giving greater fulness to the subject. But he does not rest here. By means of teaching questions, he leads the pupils to trace the relationship of the facts stated to one another, or to some other truth. Two

apparently disconnected facts are thus found to be related as cause and effect, concrete truths or individual examples are built up into law, or principle, or rule: principles and rules are traced back to the examples from which they have been derived.

Skill in questioning demands study and practice.

58. Skill in questioning is not attainable without much study and practice. The teacher who would excel in this art must study his pupils and his lessons with great care. In preparing lessons he should practise drawing up a series of supposed questions and answers, and then note the deviations from his plan which are found to be necessary to meet the actual wants of his pupils He will find that he cannot anticipate the variable conditions which he will experience in the schoolroom. Many questions which might seem to lead to the desired result will be found too difficult and receive no answer; others which were supposed to be quite definite will receive answers altogether different from what had been expected. He has to withdraw those questions which demand

too much effort from his pupils, and substitute simpler questions which lead to the same end by two or more successive steps. The unsatisfactory answers of vague and indefinite questions, he must humbly accept as chargeable to his own lack of skill, and endeavour to meet the case with less ambiguous questions.

Teaching by questions illustrated.

59. It is not easy to illustrate, by an imaginary lesson, the method of using teaching questions. A general outline of such a lesson may, however, give added clearness to what has been stated. Suppose the subject of the lesson to be, *Why one is liable to take cold from wearing wet clothes.* The course pursued might be like the following:—

What takes place when water is exposed to the air? This question may bring no answer, and the teacher changes its form to the following—What becomes of water when it is poured on the hot stove? Why do we not see this water after it is passed into the air? What do we call it in this changed state? What effect has this evaporation on the temperature

of the stove? Wet your finger and hold it up in the air. Wave it to and fro. How does it feel? What has become of the moisture? What changed this water into vapour? Where did the heat come from when the water evaporated from the stove? Where did it come from when the water evaporated from your finger? Wrap this damp cloth around your finger, and move your hand through the air. How does your finger feel? What change do you notice in the cloth? Now, if you wear damp clothing, what will become of the water? What will cause it to evaporate? Where will the heat come from? If heat is taken from your body, how will you feel?

Methods of calling on pupils.

60. In conducting a lesson, the teacher may call on pupils *simultaneously*, *consecutively*, or *promiscuously*.

Concert answers are a very uncertain test of knowledge. Perhaps three-fourths of the pupils who join in such answers could give no satisfactory response, if tested separately. They merely echo the words of the leaders. And yet, for certain

purposes, the simultaneous method has its advantages. It is useful in rapid review requiring short answers, as dates in history. A brief statement of knowledge, as a definition or rule, may be repeated simultaneously by a whole class for the purpose of impressing it on the memory. As a means of securing briskness and life in an oral lesson, simultaneous answers may be allowed in response to teaching questions. All important questions answered in this way should be repeated and answered by a pupil named for the purpose. If simultaneous answering is found to cause confusion, the class should be under such control that the teacher can change the method without difficulty. Concert answering develops confidence in young and timid children. It may be employed with good effect in the preparatory steps of a reading class taught from the black-board, and in ball-frame exercises. Special care is needed to guard children against *sing-song* in this concert work. The first approach to it should be checked. Some pupils may be asked

to give the statement in a low, natural tone, and the whole class may then be required to give it in the same manner.

When pupils are called on consecutively, as they are numbered or seated, the attention of the class is not so fully sustained as when no such order is observed. Care is necessary, however, that in naming pupils promiscuously none are overlooked. In the distribution of questions, inattentive and mischievous pupils should be called on more frequently than those whose attention can be held by interest in the work. As an aid in keeping the attention of all, a pupil may sometimes be stopped in the middle of a recitation, and another may be called on to complete the answer.

The question should be stated before the pupil required to give the answer is named. By this means every pupil in the class will be made to feel that the question is addressed to himself.

Every recitation a language lesson.

61. The rules of grammar and of composition have much less effect in forming habits of speech than the ordinary use of language in the school-room. More-

over, correctness and precision in the expression of knowledge have a reflex influence on the mind and tend to clearness and definiteness in thinking. Hence every recitation should be a language lesson.

Pupils should be trained to give their answers in complete and well-constructed sentences. They should use pure English words and such words as are appropriate to the ideas which they wish to express. Except in rapid review, such fulness should be required as will make the answer intelligible without reference to the question. It is not sufficient to tell the blunderer that his answer is faulty, or to point out the faults. Answers which are defective or incorrect should be correctly re-stated by the pupil. Pupils should also be required to state what they have to say with distinct articulation, and give to every word its full and correct pronunciation. In this way every recitation will aid in developing these essential qualities of good reading.

62. Many teachers have the absurd habit of repeating the answers of the pupils, thus

The teacher should not repeat the answers.

occupying much time and wearying themselves with unnecessary talking. This practice sometimes has its origin in the desire to bring before the class an answer which has been indistinctly stated. A wiser course would require the pupil to make himself intelligible.

CHAPTER V.

ATTENTION.

63. Attention consists in holding the mind to some one thing. It is not a distinct mental faculty, but the degree of energy with which a faculty acts—a concentration of energy in some one kind of activity in which the mind is, for the time, engaged. This directive force may, for instance, be given to the observing faculty, rendering the mind specially active in noticing objects of sense. The mind may thus single out some one object, or some particular quality of an object, for special observation; or it may limit its activity to some one sense. Thus a person may be so absorbed in the examination of a picture that he fails to hear music. Or, held by the power of attention, the mind may be so completely occupied in recalling its past experiences, or in carrying on some process of thought, as in solving a mathematical

The nature of attention.

problem, that the objects which appeal to the senses are wholly disregarded.

Importance of attention.

64. The correctness, clearness, fulness, and permanence of one's knowledge of a subject depend on the degree of attention with which he brings his mind to bear on that subject. The ability to gain and hold the attention of his pupils is one of the first elements of a teacher's success. "One may as well talk to the deaf or to the dead as to teach a child who is wholly inattentive."

Qualities of attention.

65. The two leading qualities of attention are *intensity* and *continuity*. Intensity is that quality by which the mind is completely and thoroughly riveted to the subject under consideration, so that the person is blind and deaf to everything else. Continuity gives lasting power, by which the mind is sustained for a long period in examining some object of observation or of thought. It is a quality of the highest importance in all intellectual work, enabling one to examine a subject in all its parts, qualities, and relations. The great thinkers have been noted for their ability

to concentrate their thoughts for a long time on one thing. Sir Isaac Newton said that he owed everything to patient thought.

Intense and long-continued attention depends partly on the amount of nervous energy which one is for the time able to command; and partly on the strength of the influence which arouses the mind to activity.

66. The attention is controlled by two kinds of influences:— *Attention controlled in two ways.*

(1.) It may be arrested and held to an object by some attractive qualities in the object itself, or in the conditions under which it is presented to the mind. Attention which is aroused by such external stimulus is sometimes called *spontaneous attention.* It consists in a direct appeal from the object of attention, or from something connected with that object.

(2.) Again, attention may be given to an object as the result of some impelling force originating in the mind. The object in itself may not appear to possess any special interest, but the mind determines to examine it, and directs its energies to that end. For instance, a pupil may find no

attractiveness in a certain lesson, and yet may give it his attention through some motive, as a wish to know more of the subject, desire to please his teacher, to gain some reward, or to avert a punishment. This kind of attention is the result of power of will, and is called *voluntary attention.*

Characteristics of a child's attention.

67. It is of the highest importance that the teacher should understand what he may reasonably expect from his pupils as regards the matter of attention. Otherwise he may soon become discouraged, or he may treat the weaknesses incident to childhood as faults demanding punishment. He should measure the child's power of attention with the same moderate estimate as he judges of his physical strength.

Voluntary attention—that is, attention as controlled by the power of will—is weak in childhood. It is a power to be developed. The child's attention is given to that object which for the time possesses for him the most attractive force. He is also unable to keep his attention for any long period on one thing: he lacks the

power of continuity, and hence requires frequent changes. This is particularly the case with children who have little nervous energy. Their attention can be held only by frequent application of some new stimulus. Such children may be bright and active for a few minutes, when they become apathetic and listless.

Means for securing attention.

68. Compulsory attention—that attention which is not sustained by interest—is short-lived, and during its brief existence it has little energy. The teacher must not, therefore, hope to secure attention of the right form by demanding it, however imperious may be his tones; he cannot obtain it by threatening and punishment; nor should he hope to gain it by entreaty, promises, or rewards. He must adapt himself and his methods to the character of mind he has to deal with, and skillfully, though it be slowly, work up to higher conditions. Beginning with those qualities of an object or with those features of a subject which are most attractive to the child, he should proceed to bring into notice other related features. In this

way he will appeal to the child's curiosity and develop that love of knowledge which is the highest motive force that can be brought to bear on mental activity.

The attention of young children is most easily aroused and sustained by objects of sense. Hence the teacher should make every proper use of objects, pictures, maps and diagrams.

Children are attracted by novelty.* The teacher should avoid monotony in all its forms. He should cultivate variety in illustration, in manner, in gesture, and in voice. Frequent change of subject, also, is necessary. For young children, especially,

* "Every teacher knows the value of a strong emphatic mode of utterance in commanding the attention; and this effect is partly due to action of strong sensuous impressions in rousing mental activity. This momentary direction of the attention is governed by the law of change or contrast. According to this principle, an unvarying impression, if prolonged, fails to produce a mental effect. The constant noise of a mill soon ceases to be noticed by one who lives near it. . . . The teacher who continually or very frequently addresses his class in loud tones, misses the advantage of an occasional raising of the voice." *Teacher's Hand-Book of Psychology*, Sully (New York), p. 71.

the lessons should be short. "Little and often" is the rule that best meets their wants. Children who are inattentive through physical weakness or lack of nervous energy should be treated with great patience. Calisthenic exercises will often prove effective in restoring their exhausted force.

"Never exhaust wholly the pupil's power of attention. Stop when signs of weariness appear, and either dismiss the class or change the subject to kindle fresh attention" (*Gregory*).

Obstacles to attention.

69. All obstacles to attention should be removed. The child's position, whether standing or sitting, should be comfortable, and his position should be frequently changed. Lounging on the desk when sitting, leaning against the desk or wall when standing, and all attitudes that encourage listlessness should not be tolerated. The air of the school-room should be kept pure and at a proper temperature. The pupil should not be exposed to a glare of light by facing a window. All interruptions during a lesson should be

guarded against. The child should not be expected to give attention to his lesson amid the diverting influence of sights and sounds which awaken his interest. His mind is more strongly attracted by objects of sense than by subjects of thought, and it is but reasonable that it should obey the stronger impulse.

CHAPTER VI.

CLASS WORK.

The class an organic unity.

70. Through the teacher as its heart and soul the class is transformed from a gathering of separate individuals into an organic whole. Its members are held together by a bond of sympathy and mutual dependence, the peculiarities and distinct interests of each contributing to the advantage of all the others. The work of teaching a class is more complicated and difficult than that of teaching a single pupil, but when properly done it yields more excellent results. The elements of number and diversity, which embarrass the unpractised teacher, when skillfully directed become a source of power and a means of success. The variety incident to class work drives away monotony, prevents one-sidedness and infuses life. In a properly managed class there are no idlers. The work done by one pupil is done by all. The questions and illustrations given by the teacher are

received by every individual in the class as if specially addressed to himself; and the pupil called on speaks for the class, every member of which holds himself responsible for the answer given. Then he who for the time acts as spokesman for the class, feeling the pressure which comes from the interest and eagerness of the others, is stimulated to greater effort and higher achievement than he could attain to apart from this impelling force.

Subtle forces.

71. The artist may paint the violet or the rose, but he cannot give his picture the fragrance of the natural flower. In like manner pen fails to delineate all the forces wielded by the successful teacher. The power of managing a class skillfully, in its more delicate touches, is a subtle thing, difficult of analysis, containing some qualities which, though easily felt, cannot well be described. Hence the advantage to those who are ambitious of the highest success of closely observing good teaching and of breathing its atmosphere. They may fail fully to analyze the work and discover the principles which underlie its

success, and yet they may catch the inspiration and learn to imitate the art of the master-workman. And yet, in the main, successful teaching does not transcend law or elude analysis. Some of the chief elements of successful class management are embodied in the succeeding paragraphs.

The teacher should prepare the lesson.

72. To one who expressed surprise that after such long successful experience in teaching he should spend so much time in preparing for class work, Dr. Arnold of Rugby is said to have replied—"Wholesome water cannot be obtained from the stagnant pool." No matter how frequently the teacher may have taught the lesson, he will find advantage in fresh study. If he gains no new facts, he will, at least, find new ways of presenting the old ones; and even though the new way is, in itself, no better than the old, it will inspire the teacher with fresh enthusiasm and power. The teacher who ever follows the same beaten track becomes a weariness to himself, and enfeebles his energies by his monotonous humdrum.

In the case of the text-book lesson, the teacher should carefully study what has been assigned for the pupils to learn. This is essential to thorough and skillful examination, and also to such use of the statements of the book as shall give them power to awaken new thoughts in the minds of the pupils. The teacher who requires to keep one eye on the text book, while conducting a lesson, cannot exercise much power over his class. But the teacher should have other resources and more complete knowledge than the text book affords. The ability to bring out of his treasury things new and old will inspire him with consciousness of power, give freedom in following out the details of the subject, and furnish him with varied illustration. It will give him the power to awaken the interest of his pupils and develop a love of knowledge which can never result from simply "hearing the lesson."

Show pupils how to study.

73. A mother once remarked that if the teacher would show her children how to prepare their lessons she would hear them recite. Teachers are liable to overlook the

fact that children do not know how to study. The preparation which they are most likely to make consists in simply memorizing words. They need to be taught to analyze the lesson, so as to discover its various parts, divisions, or topics, with their relationship to each other and to old knowledge. Having thus looked at the lesson in its general outline, they should follow out each part in its details, illustrations, and practical applications. Such a preparation is based on intelligence. In assigning the lesson, the teacher should guide the pupils in this analysis until they acquire the ability to make it without his aid.

Position of the pupils.

74. Vigorous mental action is dependent on physical energy. A careless, lounging attitude of body induces a correspondingly relaxed and sluggish condition of mind. Pupils should sit erect in an attitude of expectancy, with eyes directed to the teacher; when called on to answer a question, they should rise promptly, stand firm and erect, and remain standing until directed by word or sign to resume their

seat. Children should not be required to sit in any unnatural or constrained position, nor in any one position for a long time.

Position and manner of the teacher.

75. The teacher should be animated and energetic, but not boisterous. A sitting posture is not sufficiently stimulating, and should be taken only as a brief rest after long standing. The teacher should stand where he can have a commanding view of the whole school, not rigidly in one place, but moving noiselessly and easily within the limits of two or three yards. His eyes should be vigilant, moving up and down the class. When requiring to use the black-board, he should not turn his back to the class, but stand with the left side to the board. The work must move on briskly. After a difficult question, it may be advisable to allow a little time for thought before naming the pupil to give the answer. Even here, however, caution is necessary lest a habit of slow thinking be cultivated. The succeeding question should follow promptly after an answer has been given. A pleasant, cheer-

ful, and courteous manner, ease and grace in movement, and taste in dress are important elements of success in the school-room.

Voice culture

76. Careful culture of the voice claims the attention of every teacher who aims at a high standard of excellence. A good voice is a power in securing attention and order in the school-room. The teacher should not talk too much, nor too loud, nor in continued monotone. Children are often made uncomfortable and wholly unfit for work by the loud shouting and constant monotonous talk of the teacher. By speaking in low, soft, and well-modulated tones, the teacher is less wearied with work, and he is stimulated by the very music of his voice to higher effort; by the same means, also, the attention of the children is secured and a receptive condition of mind is induced by the peaceful serenity of the atmosphere in which they are working. Some teachers speak in loud tones for effect—to make an impression. This is a mistake. Emphasis lies in modulation and contrast. Variation of

voice should be cultivated,—low and loud and low again; from soft to strong, from slow to swift; but always *distinct.* Especially in giving reproof let the teacher speak in low, deliberate voice. Consciousness of power does not seek noisy demonstration.

The pupils should do the work.

77. Doing is at once the highest test of knowledge and the surest means of progress. The teacher shows his ability by keeping his pupils in the foreground with the least possible display of himself. It is often easier for the teacher to do the work himself than to lead the pupil to do it intelligently. Sometimes, however, especially in miscellaneous schools, through lack of time, telling or showing must take the place of teaching. When a teacher is compelled to work an exercise for a pupil, he should afterwards give the pupil a similar exercise to work out by himself. As far as practicable the making of diagrams and maps, black-board exercises, pointing out places on maps, and other work of this kind should be done by the pupils.

78. The teacher should impress the idea that, unless by special exception, all questions and explanations are intended for every pupil in the class, and that every one is held responsible for the answers given. When the question has been stated all who are prepared to answer should raise the hand. This should be done quietly, without gesticulation or undue eagerness. When one is called on to answer, the others should put down their hands and remain quiet until the speaker has taken his seat. Any movement to express dissent while one is speaking, besides being a violation of the rules of courtesy, will naturally cause embarrassment. After the one called on has taken his seat, hands should be raised to show dissatisfaction. It is often advisable to call on pupils who have not held up their hands. This will make an uncomfortable exposure of negligence and tend to secure attention.

Require full attention and self-control.

79. Children are naturally inquisitive. The teacher should aim to cultivate the desire for knowledge and to direct it into proper channels. He should be especially

Desire for knowledge should be encouraged.

attentive to those pupils who have little love for study, watching for manifestations of interest in different kinds of work. He should seek to encourage and strengthen any awakening interest that he may discover, and through it develop wider interest and greater mental activity. Children should be encouraged to ask questions on matters connected with the subject in hand, and also, at proper times, on other subjects in which they may be interested. If the question is irrelevant, calculated to take the attention from the subject under discussion, the matter should be deferred to a more suitable time. If the teacher is unable to answer a pupil's question, he should admit it frankly, and take the first available opportunity to obtain the desired information.

The teacher should recognize approvingly the faithful preparation of lessons. He should examine into causes of failure, and discriminate between failures, which arise from negligence and those which do not imply any fault on the part of the pupil.

80. As means of influencing the members of a class generally, place-taking and prizes are of little educational value. The places of honour are within the reach of only a small portion of the class, and generally those who are thus influenced are the pupils who least need stimulating. The keen contest that is going on near the head of the class scarcely disturbs the lower half. Sometimes, indeed, the boy who has no hope of rising to the first place covers his weakness by appearing to be ambitious of standing at the foot. In like manner prizes stimulate only the few whose superior abilities make success possible.

Place-taking and prizes.

CHAPTER VII.

READING.

Aims.

81. Reading is properly regarded as one of the leading subjects in school education. But that it may serve its true purpose, the teacher should remember that the mere ability to read is in itself of no value. It is not knowledge, but simply a means for the acquisition of knowledge. Many persons possess the ability to read, but derive little benefit therefrom, for the simple reason that they seldom use the ability, or they read what is of little value, or they read in a loose, careless way, without attention or thought.

To make reading worthy of the high place it holds among the branches of common school education, two leading aims should be kept steadily in view:—

(1.) The child should be so taught that his ability to read shall become to him an effective means for the acquisition of knowledge.

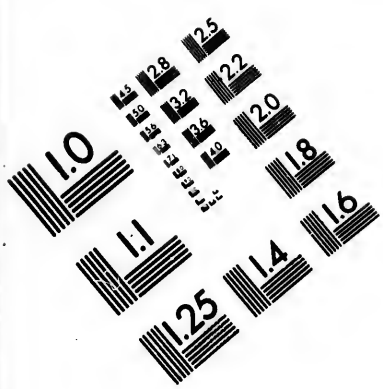
(2.) The child should be so trained to read aloud that he can convey to others in a distinct, impressive, and pleasing manner the ideas represented on the printed page.

The ability to read a means of knowledge.

82. Whilst imparting to the child the ability to read, the teacher should seek to awaken an interest in books, and lead him to come to them as a source from which he can both gratify and develop his desire for knowledge. It should be a primary aim to cultivate the child's taste and to direct him in such a way that he will discriminate wisely in the selection of reading matter, that he will enquire into the meaning of what he reads, and that he will remember, inwardly digest, and reflect on the ideas which he has gained.

Importance of early training.

83. The child's first reading lessons should be intelligible and interesting. They should not only have meaning, but they should mean something to the child. If in the early reading lessons we give the learner unmeaning syllables, as in the old-time *a-b ab, b-l-a bla,* or even significant words which represent no ideas to his



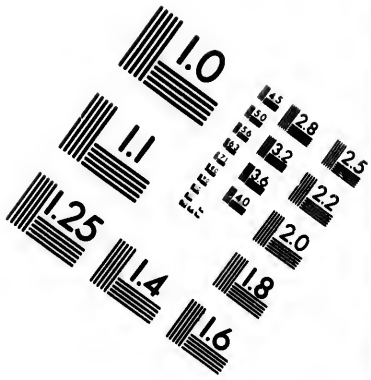
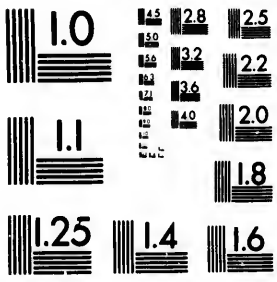
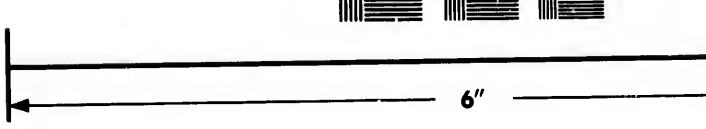
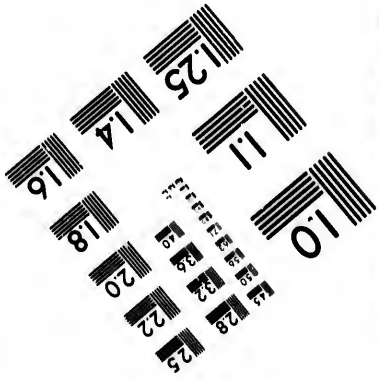


IMAGE EVALUATION
TEST TARGET (MT-3)







Photographic
Sciences
Corporation

23 WEST MAIN STREET
WEBSTER, N.Y. 14580
(716) 872-4503

mind, he will acquire a habit of listless reading—naming words without receiving or seeking ideas; or, it may be, a complete disgust for an exercise so devoid of interest. It is said that Garrick could move an audience to tears by repeating the alphabet in drawling, droning, school-boy fashion, thus reviving the painful recollection of early school days.

The first lessons should not aim to convey new knowledge, or to enlarge the child's vocabulary, but rather to show him how the object with which he is familiar may be represented by written characters, and to lead him to recognize in the written word the representation of the sound of the spoken word, and also a new symbol of the idea. They should bring before the child the objects and incidents of his own little world. As the learner acquires the ability to read, he should be encouraged in the practice of reading by providing for him supplementary reading matter suited to his ability. The teacher's desk should be furnished with children's magazines and books, which the pupils who have finished

work assigned may be allowed to peruse. Such provision will prove both an incentive to diligence and a means of culture.

84. The ability to read so as to profit and please others involves all those qualities of voice, manner, and expression which constitute good elocution. Success in teaching children to read aloud demands constant effort and vigilance. Attention to this matter during the reading lesson alone will not make good readers. Throughout every recitation and in all the speech of the children, the teacher must carefully cultivate those qualities of voice and expression which make reading effective. The qualities which need special attention are *distinctness*, *fluency*, *pronunciation*, and *expression*. *Oral reading*

These qualities should be cultivated with the utmost care, from the very first. It is a serious mistake *to teach children to read first*, and *teach them to read well afterwards*,—to allow them to stammer and mumble in the early stages, with the view that they will outgrow these bad habits as they advance.

Distinctness.

85. Distinctness, as a quality of reading, implies giving to each word its clear, full, and correct sound. To secure this quality the following means are suggested:—

The teacher should stand at considerable distance — say ten feet — from the pupil who is reading, and he should frequently listen with closed book. He can, in this way, judge more correctly of the distinctness as well as of other qualities of the reading. In the matter of distance an exception must be made in the case of very young children, as they need the encouraging influence which comes from nearness to the teacher. The child should stand erect, with shoulders back, head up, and the book held in the left hand, but not immediately before the mouth.

Phonic drill is perhaps the most effective of all the means that can be employed for developing distinctness. This exercise should be begun when the child first enters school, and should be continued through every stage of his progress. At the first there need be no reference to written or printed letters or

words. The pupils should be required to give, as named by the teacher, the elementary sounds of the language, and to repeat words with clear separation of syllables. When the pupil fails to give the exact sound, the teacher should call attention to the particular organ of speech employed and its adjustment in making the sound. The drill should embrace exercises in the distinct naming of such words and combinations of words as are generally spoken indistinctly:—

E. g., *depth, length, white, shrine, government, sixth, blame, elm, builds. He has the mall in his hand. An ever meddling memory. An ice drop. Make clean our hearts. His spot.*

The teacher should write such exercises on the board and drill the pupils on them at the beginning of every reading lesson.

86. Fluency implies an easy, smooth flow of words, and is opposed to hesitating, stammering, and drawling. It should be insisted on from the beginning, as a habit of stammering is overcome with very great difficulty. Lack of fluency generally results from inability to name

Fluency.

the words readily at sight. The child lingers and drawls on a word while he is trying to make out the next one. When he is able to read with ease, the eye far outstrips the voice, gathering in a whole line or more at a glance. In the case of beginners, and of all pupils who have acquired the habit of hesitating, a preparatory exercise of *word-calling* should precede the reading of a sentence or paragraph. The pupil must not undertake to read a sentence until he is able to name every word in it as soon as the eye falls upon it. The lesson should be written upon the board, and the pupils should be required to name the words in any order as the pointer rests upon them. Similar drill should be given on groups of words which are closely connected in utterance; as, *the white owl, Tom's sled, down the hill.* A curve line can be drawn over the group, and the pupils may be required to name the words promptly as the pointer rests upon the curve.

Hesitating and stammering often result from allowing children to move forward

too rapidly. If the book is too difficult, the pupil is always struggling in deep waters. Such making haste is most ill advised and is fatal to successful progress.

Pronunciation.

87. Children acquire pronunciation chiefly by imitating what they hear; hence the importance of special care in this matter on the part of the teacher. A dictionary is one of the essential equipments of every school-room, and the pupils who are able to read should be taught how to find any given word and ascertain the authorized pronunciation. Pupils should be encouraged to ask at the beginning of the reading lesson for the pronunciation of difficult words in the lesson. It is an excellent plan, also, to write upon the blackboard lists of words commonly mispronounced and drill pupils on them frequently, until they acquire the correct pronunciation.

Expression.

88. A clergyman once said to a celebrated stage-actor, "How is it that we clergymen fail to awaken the interest of our audience in truths of the most commanding importance, while you actors

secure the closest attention to the most trifling fiction?" "The explanation is easy," was the reply. "You present the truth as if it were fiction, while we present fiction as if it were truth." This illustrates the secret of expressive reading. The reader must understand what he is reading and be in full sympathy with its sentiment and spirit, or he will fail to make much impression on his hearers; for one cannot convey to another what he himself does not possess. If the pupil does not understand what he is reading, and does not enter into the spirit of it, the exercise is simply word-calling. Hence the reading lessons should be on subjects which the children can understand and appreciate, and the style should be adapted to their age and ability. The teacher should question the children on the lesson with the view of leading them to understand it more fully and of awakening their interest. He should also read the passage himself to show how its meaning and force can be brought out. Except in the case of beginners, each child should be

allowed to read two or three sentences or a paragraph. When confined to a single sentence, the child fails to enter into the spirit of the passage. A good means of awakening interest and securing expression is to allow the pupils occasionally to read from some child's book or magazine, as *St. Nicholas* or *Harpers' Young People.*

Concert Reading

89. When properly conducted, simultaneous reading serves good purposes. It gives more practice, which is an important matter where the class is so large that all cannot read separately every day. It also gives confidence and develops voice. It is an exercise, however, that demands great care to guard against bad habits. Its tendency is to develop a style of mechanical reading, characterized by loud shouting and measured movement, with little modulation or true expression. The teacher will find it necessary frequently to ask the pupils to speak in lower and softer tones. The difficulty of properly guarding beginners against these evil tendencies is so great that it is safer not to allow them to read in concert. In the preparatory work of making out

words and in drill on words, they may be exercised in concert; but in the reading proper, each should be called on separately.

Criticism.

90. Too frequently the chief part of the teacher's work in conducting a reading lesson consists in hearing the pupils read, hearing their criticisms on each other, and calling on the critic to do better than the one with whom he is finding fault. Children are generally ready to criticise each other. Undue eagerness in this matter should be discouraged. Children should not be allowed to interrupt the pupil who is reading or raise hands when he makes mistakes, until he has taken his seat. They should be taught in their criticisms to notice other features than miscalled words, as distinctness, fluency, pronunciation, emphasis, and expression.

Criticism should not consist exclusively of fault-finding. Encourage pupils to notice approvingly those qualities which merit commendation, and when one has rendered a passage in a manner specially worthy of imitation, require the critic to read it in the same manner.

CHAPTER VIII.

FIRST STEPS IN READING.

Different Methods.

91. Many different ways of teaching beginners to read have been employed, but they may be reduced to four principal methods, known as the *Alphabetic Method*, the *Phonetic Method*, the *Phonic Method*, and the *Word Method*. The distinctive features of these methods pertain exclusively to the earlier stages of reading. Each method, in its own way, aims to bridge over the difficulties which meet the learner at the outset; but by the time the child has finished his primer, they all meet on common ground. The learner is then able to recognize at sight a large number of words of frequent occurrence, and he has acquired the ability, to a greater or less degree, of making out new words by putting together their constituent parts which his experience has taught him to discern. In following any of the methods, he will find many words which he can-

not make out by his own unaided efforts, until he is able to use the notation of a pronouncing dictionary.

It is important to observe that whilst these methods are of unequal merit, successful teaching is much more dependent on qualities that do not belong exclusively or necessarily to any one of them. Energy, enthusiasm, and inspiring power in the teacher are essential to the success of any method.

The Alphabetic method.

92. The Alphabetic or *ABC* Method teaches the names of the letters at the outset. Formerly the learner, after getting the names of the letters, was given syllables—first of two letters, as *ab*, then of three letters, as *bla*. When he had named the letters he pronounced the syllable after the teacher. These syllables were so arranged in the lessons as to secure frequent repetition of each letter with some one sound, so that the learner was led to discover the power of the letter and associate it with the name and form of the letter. This drill on unmeaning syllables is probably a thing of the past. Significant

words are now taken by those who practise this method; and after naming the letters the child is told what to call the word. As there is generally not the slightest connection between the name of a letter and its sound or power in combination, the names of the letters furnish no assistance in making out the word. Any other names which might be given to the letters would serve equally well.

The Phonetic method.

93. The Phonetic Method analyzes the sounds of the language and forms a new alphabet, with a character or letter for each elementary sound. The words are spelled by naming the simple sounds of which they are composed. This method has not been extensively adopted, and it has been used only as a temporary expedient. After the child has made some little progress in reading on this plan, he is required to learn the ordinary alphabet.

The Phonic method.

94. The Phonic Method also begins with the elementary sounds, but it uses the ordinary alphabet. As many of the letters of the alphabet represent two or more sounds, to avoid confusion the beginner is

kept exclusively to some one of these sounds,—the words of his reading lessons being selected with this object in view. Thus in the first stage he takes the short sounds of the vowels and the hard sound of *c* and *g*. Other sounds follow gradually, one at a time, such as the long vowels, the diphthongs, and such combinations of consonants as *ch*, *sh*, and *th*.

The Word method.

95. The Word Method gives the word as a whole, in the first stage, taking no notice of the letters of which it is composed. The child having been told the word, pronounces it, finds the same word in other places, thus learning to recognize and name it at sight.

The Sentence method.

96. There are two very different ways of teaching words. One presents isolated words,—that is, it gives each word separately and as complete in itself; the other gives words as they are combined into sentences. This last mentioned way is frequently, though inappropriately, designated the *Sentence Method*. The name would seem to imply that the pupil is taught to recognize and read whole sen-

tences without any special notice of the separate words of which they are composed. That this is not claimed is evident from the following, taken from "Notes and Suggestions" in a recently published Primer, prepared by an advocate of the so-called Sentence Method.

The sentence taken for illustration of the method is—

This is the house that Jack built.

"Calling a class of eight or ten children to her, the teacher reads the sentence slowly, but in a natural manner, pointing to each word as it is read.

One child and then another, till finally all, repeat the sentence, pointing themselves to the words.

The teacher calls for the finding of a word; *Jack, house, this, is.*"

This is a good way of teaching beginners to read, but it cannot properly be called a Sentence Method. With the exception of names of familiar things, words should not be taught separately and apart from other words with which they are related. Such words as *in, his, goes,* taken

by themselves, have no meaning to the child, and when they are learned in this way, the memory derives no aid from association.

Advantages and disadvantages of the Phonic method.

97. The Phonic Method has some features which give it special advantages over the other methods. It so exercises the organs of speech on the elementary sounds as to promote purity of tone and distinct articulation. It also stimulates and gratifies the natural desire of the child for activity, by placing him in a position to find out words for himself. One of the leading disadvantages of this method lies in the fact that owing to the irregular orthography of the language, the words which a learner can make out for himself are comparatively few, and many of the words required to form suitable sentences for beginners are not adapted to the phonic method. The variety of sounds represented, in many instances, by the same letter, is also a source of perplexity to beginners.

The Word and Phonic methods should be combined.

98. On the whole, the most practicable and effective way of teaching beginners to read is found in a combination of the

Word and Phonic Methods. No great exactness is necessary as to how much of one method and how much of the other should be employed. The teacher must judge of his own power and skill in either method, and of the peculiarities of the children. Some will succeed best in one way, others in another. The first steps, however, should be according to the Word Method. The beginner knows nothing of the elementary sounds of which words are composed; hence he cannot at the first deal intelligently with the letters which represent these sounds. He should first, by analysis, discover the sounds as constituent parts of his familiar word, and when the elementary sounds have thus become familiar, he can intelligently make new combinations of these sounds, and, through the letters which represent them, discover new words by a synthetic process.

Suggestions.

99. The following hints will aid the inexperienced teacher in giving first lessons according to the Word and Phonic Methods. The integrity of principles involved does not require that they be followed with

rigid exactness. They are suggestions and not laws.

Teach first lessons from the blackboard. Children are interested and impressed by seeing the teacher write the lessons. The teacher can adapt the lessons to circumstances.

The lessons should be on familiar things. Bring the objects before the class; or if this is not convenient, draw pictures of them on the board.

Begin with script letters. They are more readily placed on the board than print. The children learn them as readily, and in copying the lesson they learn to write from the first. The letters should not be joined, but should be carefully formed so as to be a suitable copy for the pupils to imitate. The teacher should take pains to show how the letters are written,—at what place to begin, what parts are made by down strokes, and what parts by up strokes.

After the pupils have learned the script characters, they will have little difficulty with print. The lesson can be printed

under the script, and the pupils may be required to read both forms.

First lesson—subject, *A red top.*

Call up the class in front of the blackboard. Show the top. Talk about it. Spin it. Write the word *top* on the board. Tell the pupils that this is the word *top*. Ask them to find it elsewhere on the board. (It should be written with other words in various places on the board before the class is called up.) Ask the pupils to name the word as they point it out. Let them take their seats and write *top* on their slates.

In the next lesson ask the pupils to find the word *top* wherever it is written on the board. Question the pupils on the colour of the top. Write on the board *a red top.* Get the pupils to name each word and find it on some other part of the board. Then let them read the three words fluently and distinctly. See that they give *a* its short sound, as if it formed an unaccented syllable of the next word.

In connection with the reading lessons give exercises on elementary sounds. The

teacher may name the word *top* slowly, dwelling on each sound, as *t-o-p*, and then require the pupils to give the sounds after him. Do the same with other words, as *dog, pig, cat, man,* and get the pupils to try to find what the word is. At this stage in these exercises make no reference to the letters, but appeal to the ear alone.

In the next lesson, after reviewing the preceding lessons, let some pupil take the top. Bring from the class a statement, as *Tom has the red top.* Write the sentence on the board. Drill thoroughly in word-calling, taking first single words, then groups, requiring the pupils to name them quickly as the pointer rests on them. In these preparatory exercises, drill the pupils both simultaneously and individually. *Do not allow simultaneous reading at this stage.* See that the pupils read with natural expression.

Proceed in a similar manner with succeeding lessons, introducing one or two new words in each lesson, and keeping the old words so before the class that they shall not be forgotten. Sentences

similar to the following may be used:— *Tom can spin the red top. Has Ann a top? Tom will let Ann spin the top.* When the pupils begin to lose interest in lessons on the top, take a new subject, as *dog, cat,* or *pig,* and build up sentences as before. The pupils should have much practice in copying lessons. This will impress the forms of the words on their memory, thus teaching both reading and spelling.

At the end of three or four weeks the pupils will be prepared for the Phonic Method. They will then be able to name several words at sight, and to form words from their elementary sounds as given by the teacher. The first step here is to lead them to associate these elementary sounds with the letters which represent them. This is to be done by taking suitable phonetic words which the pupils have learned, as *top, red, dog, cat,* analyzing these words into their elementary sounds, and showing the letter in the written word which represents each sound. The pupils may be led to notice

that there are three sounds in the word; they may name separately the first sound, the second sound, the third sound. Then, looking at the written word, they will find it is made up of three letters,—a letter for each sound. Naming the first sound again, they are taught to apply it to the first letter, and similarly with the others. The sound may be called the *name* of the letter; or the letter may be called the *picture* of the sound. Care must be taken in the selection of words that only one sound is given, at this stage, for each letter. It is best to give the short vowels and the hard sound of *c* and *g*.

When the pupils are able to give the sounds of the letters, they are prepared to make out those new words in which the letters represent the elementary sounds which they have been taught to associate with them. As far as practicable, the new words introduced in the succeeding lessons should be of this character, and the pupils should be taught to make them out by the Phonic Method. If a word which cannot be discovered by sounding the letters is

needed to complete a sentence, it can be given as at the first.

In leading pupils to discover words the teacher should move the pointer from letter to letter, the pupils giving the sounds. Before the word is called for, the sounds must be given two or three times; at first slowly, then more quickly, bringing the sounds more closely together each time, as, *t—o—p, t-o-p, top.* The teacher should talk as little as possible during this exercise. The pupils can be guided by the movement of the pointer.

The words most suitable for the first stage of the Phonic Method are such as contain three letters, all sounded, the first and last letters consonants, the middle one a short vowel, as *top, dog, got, rat, ran, mat.*

Follow with words beginning or ending with two consonants, still retaining the short vowel, as *milk, frog, pond, skip.*

As yet the pupils have had but one sound for each letter. They may now be taught the long vowels. These sounds can be most readily taught in connection with

silent e at the end of the word, as in *Jane, kite, bone,* and *tune.* At first the new feature may be indicated by marking the vowels, as **Jane.** The pupils should be impressed with the effect of the *silent e* by blackboard drill on words written side by side, as—

pan, pane; pin, pine; met, mete;
rob, robe; mat, mate; tub, tube.

When the pupils are ready for a new difficulty, combinations of two letters representing a single sound may be given, as *sh* in shop, *ch* in chop, *th* in that, *oo* in moose, and *ee* in sheep. These may be followed by dissyllables, which should first be written with a hyphen, as Ma-ry, Su-san. Other irregularities may be introduced in such order as the intelligent teacher may think advisable.

It is not probable that any special attention will be required to teach the names of the letters. The names furnish no aid to reading. The pupils will need them for oral spelling. It will be found, however, that by the time they want them for this

purpose, they will have "picked them up" without formal teaching.

The pupils should be encouraged to make out words by simply looking at them and mentally combining their elements.

Ability to make out words readily will be promoted by drill on words which are alike in having two or more similar elements either at the beginning or at the end; as—

cat,	*rat,*	*fat;*	*den,*	*men,*	*pen.*
mat,	*cap,*	*cab;*	*pig,*	*pit,*	*pin.*
gate,	*Kate,*	*mate;*	*pine,*	*line,*	*dine.*

Words of the same class should be written in a column on the board so as to show the constituent part common to all the words of the class; as—

c-at	*d-en*	*ca-t*	*g-ate*
r-at	*m-en*	*ca-p*	*K-ate*
f-at	*p-en*	*ca-b*	*m-ate*

The pupils are required to pronounce the part which is common to the different words, as *at, en, ate,* and then to notice how the word is changed by the new sound which is added.

CHAPTER IX.

SPELLING.

Aims and means.

100. The chief aim in teaching spelling should be to give the ability to write words correctly. This ability is quite distinct from that of spelling orally, and is usually attained only by much practice in writing from dictation and in copying from the blackboard and from books. Oral spelling, however, serves good purposes, and it should be given conjointly with written spelling. Through it the pupils learn to pronounce words correctly and to divide them into syllables.

It should be remembered that the benefits of a spelling exercise, whether oral or written, depend wholly upon the correction by the pupils of all the mistakes which they make. If a pupil misspells a word, and is not required to correct his error, the spelling becomes simply a test exercise, and it may even tend to confirm his tendency to misspell that word. Hence

the necessity of making the pupil spell correctly all the words which he has misspelled. Much care should be taken in marking all errors in written spelling, and in seeing that the pupils re-write the words correctly. Various means may be employed for the discovery of errors; as, allowing the pupils to examine each other's work, requiring them to spell word about, or letting one spell the words from the book, each pupil marking his own mistakes. The most effective method is to require the pupils to write in blank books, which the teacher should take up at the close of the lesson. The teacher having marked all the errors by drawing a line under them, and having marked the number of errors by a figure placed beneath the exercise, returns the books. The pupils will then re-write the misspelled words. In most cases the teacher would find it necessary to examine such exercises after school hours.

101. The following suggestions include the best modes of teaching spelling:— *Suggestions.*

Require written spelling in every stage

of the pupils' progress. Beginners should copy their reading lessons from the blackboard. Those who are further advanced can write from their readers, or their spelling books. With proper oversight these exercises will tend to progress in reading and writing as well as in spelling. The pupils may also be required to write from dictation, or they can copy words placed on the board for this purpose.

Make out lists of words frequently misspelled, and drill pupils on them both in oral and written spelling. Write on the board names of common things for the pupils to copy; as,—farming tools, also names of counties and other places.

Do not overlook little words. In spelling from the reading lesson, dictate clauses rather than select what may be supposed to be the most difficult words. In a dictation exercise it is well for the teacher first to read the whole sentence, and then, if the sentence is long, dictate it clause by clause of such length as the pupils can remember. In order to secure attention and cultivate the memory, the

teacher should not repeat the clause, and the pupils should not begin to write until the teacher has finished reading the clause.

Drill pupils on words spelled differently, but having nearly or quite the same pronunciation, as *to, too, two; birth, berth; ale, ail; deer, dear; fare, fair; hall, haul; led, lead; plate, plait; peel, peal; counsel, council.* Require pupils to write sentences with these words correctly used. See that pupils are able to distinguish and indicate any slight difference in the pronunciation of such words, as in case of *counsel* and *council.*

Occasional spelling matches will awaken interest. The pupils may be arranged on two sides, or each may contend on his own account.

When spelling books are used for home lessons, the words should be pronounced by the teacher at the time of assigning the lesson. Any irregularity in the spelling should also be pointed out and impressed. It is absurd to require pupils to commit to memory words assigned as a spelling lesson.

Some of the rules of spelling give aid, provided they are thoroughly learned; as, the rule for *ei* and *ie*, the rule for doubling the final consonant on taking an additional syllable beginning with a vowel, and the rule for retaining final *e* when a syllable is added beginning with a vowel.

Much interest may often be awakened in a spelling lesson by showing the origin and history of words, as *calculate, tribulation, pagan, polite.* The teacher will find Trench's *Study of Words* useful in preparing for such work.

In spelling orally pupils should always pronounce the word before they spell it. In spelling they should divide the word into syllables by making a pause after each syllable. It is not necessary that they pronounce each syllable as they advance, according to the old-time method, as, *C-o-n, Con, s-t-a-n, stan, Con-stan, t-i, ti, Con-stan-ti, n-o, no, Con-stan-ti-no, p-l-e, ple, Con-stan-ti-no-ple.*

CHAPTER X.

ORAL LESSONS.

102. Oral instruction may take the form of a lecture, in which the teacher imparts knowledge by connected statement and the pupils assume the attitude of listeners, or it may be in the form of a dialogue or conversation in which knowledge is developed by means of question and answer. Oral teaching, in its technical sense, is carried on through a conversation between teacher and pupils, and is a combination of questions and answers, direct statement or telling, and illustrations. Nothing should be told which the pupils can find out for themselves, and the teacher shows his skill by awakening the pupils to the exercise of the highest intellectual activity and in guiding them to the discovery of knowledge by the use of their powers of observation and reflection. When a new idea has been developed and the pupil has no corresponding word with which to express it,

Oral teaching.

the appropriate term should be given. A lesson may be wholly oral, or oral teaching may enter more or less into a text-book lesson; the statements of the book being more fully unfolded by explanation and illustration, or being used as data from which new truth is derived.

Oral lessons and object lessons.

103. In an oral lesson the pupils are not supposed to make preparation by the study of a textbook. They are guided by the questions and statements of the teacher to observe, reflect, and infer, and they are required to state the knowledge which they have gained in suitable language. Objects may be introduced in connection with an oral lesson; or the lesson may be carried on wholly by means of language. In the latter case the old ideas of the pupils, which are elicited by questions, are made the basis of new knowledge. Two or more such old ideas are brought side by side in the mind, and the pupils are led by some reflective process, as comparison and generalization, to the discovery of new truth. When objects are introduced, they may either be for purposes of illustration and

aid in developing new ideas; or some object may itself form the subject of the lesson. In this last mentioned case, where an object is brought before the class to be examined for its own sake and not to illustrate something else, the lesson is called an *object* lesson. Thus a thermometer might form the subject of an object lesson, or it might be introduced in an oral lesson to illustrate the expansive power of heat. Every object lesson is an oral lesson, but every oral lesson is not an object lesson.

Subjects for oral lessons.

104. The various subjects studied from text-books, as geography, arithmetic, and grammar, should be introduced through a series of oral lessons before the text-book is taken up. The text-book is not adapted to the wants of the beginner. It presents much of its knowledge in the form of definitions, principles, and rules; whereas the pupil requires to be guided to the intelligent apprehension of abstract truth through the examination of individual facts. In addition to these oral lessons designed to prepare the way for the intelligent use of

the text-book, there is an important field for oral lessons on subjects which are not studied from text-books in many common schools. These subjects include form, position, colour, animals, plants, minerals, various matters affecting health, as cleanliness, pure air, and exercise; also subjects included under the science of common things, as the pressure of the atmosphere, the reflection and refraction of light, dew, clouds, smoke, evaporation, and the sources and distribution of heat. Properly conducted oral lessons are greatly superior to the text-book, as a means of mental discipline. The superiority is that of teaching over telling. The text-book cannot guide the learner to observe and infer; it cannot awaken his interest and his self-activity, and then leave him to work out the truth by his own efforts. It simply states the facts as well as the principles and laws which are established by those facts, whereas the oral lesson leads the pupil to gather facts from observation and experiment, and then to derive principles by generalizing those facts.

105. Object lessons may be divided into three stages according to the mental faculties called into exercise. In the first stage the appeal is made exclusively to the perceptive powers. The object is presented, and the pupils are called on to examine and describe its parts and qualities. In the second stage both the perceptive and thinking powers are exercised. Having observed the parts and qualities of the object, the pupils are guided to the discovery of the relation of these parts and qualities to each other, or their adaptation to the use or end which they are designed to serve—*e.g.*, they are led to perceive how the long legs and the long neck of a wading bird are suited to each other, or how these parts are adapted to the habits of the bird. In the third stage of object lessons the pupils are led to observe, compare, and classify. They examine several objects, mark their resemblances and differences, and arrange the objects in classes. They may, for example, examine the pine, spruce, and fir, observing their common

Three stages of object lessons.

features in having long, narrow, evergreen leaves, and producing their seeds between the scales of cones, instead of in a closed seed vessel. Hence they place all in a common class, *coniferae.* Proceeding to notice points of difference, they observe that the leaves of the pine are much longer and thread-like, and that they are borne in clusters, while those of the spruce and fir are short and solitary. They may then be led to distinguish different species of pine by the number of leaves in the cluster. They may also distinguish the spruce from the fir, by observing that the spruce has angular leaves, awl-shaped at the point, and arranged on all sides of the stem, and that it bears pendent cones on the lower side of the stem; while the fir has flat, glossy leaves, parted into two rows on opposite sides of the stem, and bears erect cones on the upper side of the stem.

Preparation of an oral lesson.

106. In preparing an oral lesson the teacher will find it advantageous to make jottings of the ideas which he desires to develop—noting them first in whatever

order they may happen to occur to his own mind. He may then arrange them in such order as may appear most consecutive and logical, placing the topics in a marginal column and brief notes on the method of presenting these topics in the body of the page, as shown in the following lesson schemes:—

THE PEA.

TOPICS.	DEVELOPMENT.
Introduction.	Name of plant given—cultivated—lives one year (an annual)—used for food.
The Root.	Examined by pupils—described—thread-like or fibrous.
The Stem.	Examined and described by pupils—from two to five feet long, not much branched (nearly simple)—round — hollow — herbaceous — weak — a vine — climbs—compared with currant bush and with pole bean.
The Leaf.	Examined and described—reticulated, compound—number of leaflets observed — ovate, margin entire—Stipules large and free, a tendril at the top in place of odd leaflet—compare with clover leaf.

TOPICS.	DEVELOPMENT.
The Flower.	Examined and described — position axillary—two or more together —butterfly-shaped—has four parts (complete)—Calyx inferior, two segments or sepals shorter than the others, leafy. Corolla has five petals (polypetalous)—petals compared, not all of same form (irregular)—petals named, banner, keel, wings. Stamens how situated—counted—found to be in two groups or *brotherhoods* (diadelphous). Pistil—one—curved at top—style grooved on back—hairs on under side.
Fruit.	Fruit a pod — a legume — splits into two segments—has one compartment—many seeds—seeds globular with two lobes.

LEAD.

Where Found.	Obtained from mines—abundant in England and Wales. As found in nature it is mixed with other substances and is called *lead ore.*
A Metal.	Compare with iron, copper, silver, and other metals, leading pupils to notice the *metallic lustre.*

TOPICS.	DEVELOPMENT.
Qualities.	Lead pupils to discover qualities by experiment and observation. Cut it with a knife or scratch it with the finger nail. It is *soft* as compared with other metals. When freshly cut it is very bright, but it soon loses this brightness. It is *tarnished* on exposure to the air. Pound it with a hammer. It can be beaten out broad and thin—is *malleable.* Bend it back and forth; it bends easily—it is *pliable.* Place it in an iron spoon and hold it over the fire; it soon melts—it is *fusible.* Thrown into water it sinks—it is *heavy.*
Uses.	It is used for covering roofs of houses and for water pipes. It is made into bullets and shot, made into thin sheets, it is used to line tea chests. Mixed with other metals it is used for printers' type. (The teacher can explain the manufacture of shot by pouring melted lead through a colander and allowing the drops to fall into water.)

KINDLING A FIRE.

TOPICS.	DEVELOPMENT.
Introduction bringing from pupils statement of course pursued and starting questions for solution.	Question pupils in regard to means used and methods adopted in kindling a fire. The end of a match is rubbed against a rough surface. It ignites — first the phosphorus and sulphur, then the wood. Shavings or splinters are placed on the burning match, then larger sticks. If coal is used, small pieces are placed around first, then larger pieces. Why is one end of the match rubbed rather than the other? Why is wood used first rather than coal? Why is soft wood better than hard wood? Why are shavings and thin pieces of wood better than thick pieces? Why are small pieces of coal better than large?
Some substances ignite at lower temperature than others.	Show that heat is generated by rubbing or friction. Rub two pieces of wood together; the pupils perceive by the sense of touch that the sticks become warm and even hot, but they do not burn. They are not heated to the burning temperature. Rub the end of the match on the floor; very gentle rubbing makes heat enough to set the phosphorus in a flame. The pupils state that phosphorus ignites at a much lower temperature than wood, and they perceive that the burning phos-

TOPICS.	DEVELOPMENT.
	phorus generates sufficient heat to ignite the wood of the match. By experiment they will see that pine ignites more readily than maple, and wood more readily than coal. Pupils are now prepared to admit that some substances ignite more readily than others, and that those substances which ignite most readily are best for kindling a fire.
Bad conductors of heat are best for kindling a fire. (It is assumed that pupils have previously had lessons on conduction of heat.)	Bring from the pupils the fact that the surface of the kindling material is heated before the interior, and that if the heat remains at the surface this portion of the material will soon burst into flame; whereas if the heat is conveyed rapidly to the interior, the surface is kept longer at a temperature below the burning point. Hence, fuel which has low conducting power is best for kindling a fire. Coal is a better conductor than wood, and hard wood is a better conductor than soft wood; and hence a reason for their difference in suitability for kindling material.
Small and thin pieces of fuel better for kindling than large and thick pieces.	Lead the pupils to admit that even in the case of fuel which has low conducting power a large portion of the heat travels from the surface to the interior, thus keeping the surface for a longer time below the igniting temperature. They will

TOPICS.	DEVELOPMENT.
	then readily infer that if the pieces of fuel are small and thin, the whole mass will the more readily be raised to the required temperature. There is less matter in the interior to rob the surface of its heat. Hence the heat accumulates at the surface, and the fuel bursts into flame. Shavings, chips, and small pieces of coal should, therefore, be used first. The pupils will perhaps remember of having seen a low fire quite extinguished by piling on large pieces of coal or wood.

CHAPTER XI.

OBJECT LESSONS ON POSITION, DIRECTION, AND FORM.

Right and Left.

107. Many pupils when they enter school do not know their right hand from their left. In giving lessons on this subject pursue a course like the following:

Question the pupils as to the hand they use most frequently; *e.g.*, in holding a knife or a pen, or in shaking hands. Ask all to hold up this hand. Tell them that this is called the *right* hand. Ask all to hold up the other hand, and tell them that this is called the *left* hand. Follow with exercises on various parts of the body, asking the pupils to point to the right eye, the right ear, the right foot, etc. Ask them to name objects on their right hand and on their left. Place an object on the middle of the desk, and ask the pupils to place other objects on the right of it and on the left.

Before, behind, etc.

108. Place two pupils in such relative positions as to illustrate the idea expressed by the words *before* and *behind.* Give the terms. Require the pupils to express the idea in complete sentences; as,—*William is behind James. James is before William.* In a similar manner, by means of objects placed in different positions, develop the ideas expressed by *above, beneath, beside, between, among,* etc.

Points of compass.

109. Ask the pupils to point to the place where the sun rises. Give the term *east.* Ask all to point to the place where the sun sets. Give the term *west.* Ask all to stand with their faces towards the sun's place at noon. Give the term *south.* Ask all to stand with their backs to the *south.* Tell them that they are now facing the *north.* Require full statement,—The north is before me, the east is at my right hand, the south is behind me, the west is at my left hand. Ask the pupils to name objects on each side of the school house. Place an object on the desk, and require the pupils to place objects on the north, east, south, and west, and to describe their position.

Ask the pupils to point half way between the west and the north, half way between the east and the north, half way between the east and the south, and half way between the west and the south. Give the names of these intermediate points. Draw lines upon the floor or the desk, crossing each other so as to show the eight points of the compass. Require the pupils to give the names. Let them place objects on the desk—one in the middle, one on the north of this, one on the north-east, and one at each of the other points. It is best to have no two objects of the same kind. Require the pupils to describe the position of each object; *e.g.*,—The inkstand is on the middle of the desk; the apple is on the north of the inkstand; etc. Ask them to notice particularly the position of each object. Remove all the objects, and ask the pupils to place them as they were before. This will develop the power of observation.

Distance, position, and direction.

110. Ideas of distance are developed in teaching Long Measure. (See chapter on Arithmetic.) Require pupils to estimate

distance in connection with direction, and to verify their estimate by actual measurement. Insist on complete statements; thus—

The cube is fifteen inches north-west of the inkstand. The door is twenty feet south-east of the desk.

Ask a pupil to walk ten feet in one direction, as west, and then turn and walk the same distance in another direction, as south. See that the pupils understand what is meant by going on in the same direction, and by changing the direction.

Surface.

111. Present blocks of different forms, as a sphere, a cube, and a cylinder. Ask the pupils to look at them and to move the hand over them. Lead the pupils to understand that there are parts of the blocks which they can neither see nor touch. Give the term *surface* for the part which is exposed to touch and sight.

Lead the pupils to compare the surface of the sphere with that of the cube. They will observe that the surface of the sphere is always changing its direction; and that the surface of the cube does not change its

direction continually, but that parts of the surface have the same direction. Give the term *curved* surface for a surface that is continually changing its direction, and the term *plane* surface for a surface that does not change its direction. Ask pupils to name objects in the room which have curved surfaces and others which have plane surfaces. Lead them to observe that some objects have part of the surface plane and part curved.

Lead the pupils to observe that the surface of the cube continues in one direction for a certain distance and then changes abruptly to another direction. Its surface is thus divided into different parts. Give the term *face* for each part.

Length, breadth, and depth.

112. Give the pupils the idea of length, breadth, and depth separately. First get them to compare objects of different lengths. One stick is short, another is long, a third is longer. Lead them to observe and to state that the objects differ in length. In the same manner develop the idea of width by comparing bits of ribbon or strips of paper of various widths,

but of the same length. Bring from the pupils the statement that these objects differ in width. Present other objects unequal both in length and width, and lead the pupils to observe that they differ in two ways of measuring.

Present blocks of unequal thickness, but having the same length and width. The pupils will observe that the blocks agree in two ways and differ in the third. Give the term depth or thickness for this measurement. Then present blocks of unequal length, breadth, and depth, and bring from the pupils the statement that these blocks differ in three ways of measuring. Then lead them to observe that all objects which they handle have length, breadth, and depth. Tell them that objects having length, breadth, and depth are called *solids*. Finally, require pupils to state what a solid is, in a complete sentence.

Lines.

113. Present a cube or other solid having plane faces. Ask the pupils to point out two adjoining faces and to show where these faces meet. Let them move the finger along this part. They will say it

feels sharp; it is the edge. Lead them to see that when the edge is quite sharp, it has neither width nor depth, but only length. Give the term *line* for that which has length without width or depth. Require a full statement:—*A line is that which has length without width or depth.*

Ask pupils to draw lines on the board and show that these are not really lines, but only the *pictures* of lines.

Straight lines and curve lines.

114. Present a cylinder. Let the pupils observe the edge formed by the meeting of the plane face of the end with the curved surface of the side. Lead them to compare the line formed in this way with that formed by the meeting of two faces of a cube. Ask them to draw both kinds of lines on the board. Give the terms *curve* line and *straight* line.

To develop a more exact idea of straight line and curve line, show that the straight line never changes its direction, and that the curve line is continually changing its direction. Require full statements.

Give the idea of *wave* line by showing the ruffled surface of water when agitated by the wind.

Position of lines.

115. Lead the pupils to think of the difference in their position when standing in class and when lying on their beds—*standing* position and *lying* position. Hold a pencil in these positions. Require the pupils to draw lines in these positions, and also in a position between standing and lying (inclined). Give the terms *vertical*, *horizontal*, and *inclined*.

Parallel, converging, and diverging lines.

116. Lead the pupils to compare the opposite edges on a face of a cube with the opposite edges on the face of a pyramid. Let them discover by measuring that the edges of the cube always keep the same distance apart, and that in the pyramid they are continually varying, coming nearer to each other in one direction and becoming farther apart in the other direction. Require the pupils to draw such lines; and give the terms *parallel*, *converging*, and *diverging* lines. Require pupils to give a definition of each. Ask them to name objects that have their

opposite edges parallel or converging and diverging.

Corner or angle.

117. Lead the pupils to show where adjoining edges of different objects meet, as the corner of a block or of the desk. The pupils will probably give the term *corner*. Ask them to draw lines so as to form corners. Give the term *angle*. Show that the angle is the opening between the lines, and that the size of the angle depends on the width of the opening and not on the length of the lines. Illustrate by opening a knife, or by two sticks joined at the angular point, showing that with the same length of sides the angle can be made larger or smaller.

Kinds of angles.

118. Place a vertical line on a horizontal line so as to form an angle on each side of the vertical line. Lead the pupils to observe that these angles are equal. Give the term *right angle*. Place a slanting line on a horizontal line, and lead the pupils to observe that one of these angles is larger and one is smaller than a right angle—that one is *sharper* and the other is *blunter* than a right angle. For a few days allow

the pupils to use the terms sharp angle and blunt angle; then give the terms *acute* angle and *obtuse* angle. Give the pupils exercises in drawing angles.

Triangles.

119. Give the pupils straight sticks, no one of which shall be equal in length to the combined length of any other two. Lead them to imagine they are *fencing in a field* by laying the sticks on the desk so as to enclose a space. Encourage them to exercise their ingenuity in making the field with the least possible number of sides. They will find that three is the least number. Require them to draw three-sided figures, and then to count the angles. Give the term *triangle* as the name of a figure which has three sides and three angles.

Different kinds of triangles.

120. Present the three kinds of triangles as distinguished by their sides. Each kind should be represented by two or more triangles differing in respect to size. This will guard against any erroneous notion that the size of the triangle is to be taken into account in determining its kind. For convenience in speaking of the

figures, it is best to number them. The pupils will observe that all the figures have three sides and three angles — all are triangles. They will then be led to notice that some of them have three equal sides; some two equal sides; and some three unequal sides. The terms *equilateral*, *isosceles*, and *scalene* may be withheld, if the pupils are very young.

In a similar way lead the pupils to observe the three kinds of triangles as distinguished by their angles. They will see that some have three acute angles; some have two acute angles and one right angle; and some have two acute angles and one obtuse angle. Give the names, and require the pupils to give full statements — *e. g., An acute-angled triangle has three acute angles.*

Give exercises in drawing the various kinds of triangles.

The square.

121. Give the pupils four sticks of equal length; direct them to arrange the sticks on the desk so as to enclose a space; and then let them adjust the sides so as to form four right angles. Require the

pupils to draw such figures on the board, making them of different sizes, and then to state that the figures have four equal sides and four right angles. Give the term *square.* Require a full statement:—

A square is a figure which has four equal sides and four right angles.

In teaching other rectilinear figures the same general method can be pursued.

The circle.

122. Present a straight stick or wire that can be easily bent. Lay it upon the desk; the pupils observe that it does not enclose a space. Bend it until the two ends come together. The pupils will state that a curve has been formed, which encloses a space. Lead them to examine the curve and observe if it changes its direction evenly in all its parts. If it does not, adjust the curvature so that it shall be uniform. Draw a similar curve line on the board. Require the pupils to state that the line curves evenly in all parts, or that it changes its direction alike in all parts. Give the term *circle.* Require a full statement:—

A circle is a figure bounded by one

curve line that changes its direction alike in all parts.

Other features of the circle may be taught in a similar way.

The ellipse can be taught by showing the peculiar direction of the curve in different parts.

123. Review by presenting lines, plane figures, and blocks. The pupils will state that lines can be measured in only one way; squares and other figures like them have length and breadth; and the blocks have length, breadth, and thickness. Give the term *solid*, and require the statement—*A solid has length, breadth, and thickness.* Solids.

124. Present two or more cubes of different sizes, and let the pupils examine each separately. Taking up one block, they count its sides, observe the form, and compare them in respect to size. They then make the complete statement—*This block has six equal square faces.* They pursue a similar course with the other cubes. The teacher gives the term *cube*, and then brings from the pupils the state- The cube.

ment—*A cube is a solid having six equal square faces.*

The prism.

125. Prisms have various forms, as triangular, square, pentagonal, etc. Present first a triangular prism. Lead the pupils to observe that it has equal plane faces, in the form of a parallelogram; and that the ends are alike in form, that they are equal, and parallel to each other. Require a full description of the block. Give the term *prism* and ask for a full statement. Present other kinds of prisms, and lead pupils to compare by counting the sides and observing the different forms of the ends, as triangular, square, etc. They should be led to notice points of resemblance as well as difference—*e.g.*, the sides of all are parallelograms and the ends are parallel to each other.

The pyramid.

126. Lead the pupils to discover by observation that the faces of the pyramid are all plane, that the sides are triangles which meet in a point at the top or *apex*, and that the bottom or *base*, though it be a triangle, may differ in form from the sides. Require full description and give the term

pyramid. Lead the pupils to compare different kinds of pyramids, noting resemblances and differences. All have plane faces for their sides, in the form of triangles meeting in a point; some have three sides with triangular bases, some have four sides with square bases, others have five sides, &c.

127. Present the object. The pupils will observe and state that it has no corners or plane faces; but that the surface is curved evenly in all its parts. They will probably call it a ball. Give term *sphere.* The sphere.

From a sphere that opens in the middle, develop the idea of *hemisphere,* and give the term.

Let the pupils measure with a string around the middle of the sphere, and give the term *circumference.*

By reference to the hemisphere, show that there is a certain point within the sphere, from which all straight lines drawn to the surface are equal. Give the terms *centre* and *radius.* Show that a straight line passing from one side through the centre to the opposite side is equal in

length to two radii. Give the term *diameter*. It may be shown that the circumference is rather more than three times the diameter.

Show that the surface of some objects, like the lemon, curve more in some parts than in others. Give the term *spheroid*.

The cylinder. 128. From observation the pupils learn that the object has two plane faces and one curved face, and that the plane faces are circles, equal in size, and parallel to each other. Give the term *cylinder* and require full statement.

The cone. 129. Present the object. Probably the pupils will say that it resembles the pyramid; that it is a *round* pyramid. They will be able to give the term *base* as the name of the side on which it stands, and *apex* as the name of the top. They will discover that the base is a circle, and that the rest of the surface is curved, tapering from the base to the apex. Require full description.

CHAPTER XII.

LANGUAGE.

130. Ideas should precede language, but they cannot supply its place; nor can they by any claim of priority detract from its importance. Indeed, expression of thought is an essential condition of progress in thinking. Thought may stagnate for want of expression, as the seed buried deep in the earth may fail to germinate through lack of the vital air. Thought unexpressed accomplishes nothing; "words govern the world." The mere thinkers of the past, if there were such, went into oblivion with their generation, leaving no track on the sands of time; those who through the ages have moulded human lives and controlled human actions were the men and women whose thoughts were crystallized in words, —"who being dead yet speak." *Importance of language.*

Words are curious things. Lifeless and cold are they in themselves; bald and

barren or misleading when unskilfully handled; but what masterful potency have they when deftly marshalled.

Practically the value of the proper expression of knowledge is greatly underestimated in the public schools. Every idea developed in the mind of the child should be given back in suitable language. An old maxim says—"An idea is not given until it is received." It is equally true that the teacher has no guarantee that the idea is received until it is returned. The complete and exact expression of knowledge is necessary to give it a permanent place in the mind. Indeed a child has scarcely gained an idea in all its fulness, until he has given it bodily form in words.

"There is perhaps no part of intellectual training which requires so much careful attention as the control of the child's use of words. On the one hand, it is an evil for a child to pick up and use words just because they are used by his elders and sound grand, before he can attach precise ideas to them. 'When,' says Madame Necker, 'the want of a word has preceded

the possession of it, the child can apply it naturally and justly.' But as his intelligence and his needs grow, new words should be introduced and explained. As the same writer observes, 'the power of expressing our thoughts helps to clear them up.'

"The educator should keep jealous watch over the child's use of words, with the view of guarding him against a slovenly application of them. Looseness and vagueness at the outset are apt to induce a slovenly habit of thinking. This danger can only be averted by exercising the learner in making his notions as clear as possible. He should be well practised from the first in explaining the words he employs. It is of great importance to see that a child never employs any word without attaching some intelligible meaning to it." *Teacher's Hand Book of Psychology*, Sully (New York), p. 236.

Language needs constant attention.

131. Some branches of school work may have a sort of independent position, and be limited to their own time and place in the programme. The cultivation of language

is for all times and subjects within the range of the educational course. The development and discussion of the principles of language may be confined to definitely allotted periods; but effective training in the practical use of language must form a part of every school exercise and pervade the very atmosphere of the school-room through all the periods. The training must begin when the child's education begins, and it must receive the most careful attention through all the various stages of progress.

Aims.

132. The cultivation of language requires attention to various matters. Children should be trained to express their ideas with fluency and precision. To this end they will need to have their vocabulary extended as their knowledge increases, and also to be made acquainted with the exact meaning of many of the words which they already use. They should be taught to arrange their words in such order as will express their ideas most clearly and forcibly, and they should be trained to such a practical knowledge of the relations of

words to one another as will enable them to employ those forms of speech which good usage has established. Then in the matter of written composition, they will need, in addition to the above, to be instructed in punctuation and in the proper construction of the sentence and the paragraph.

Language developed by imitation.

133. The proper use of language is largely a matter of imitation. If one is brought up in Galilee his speech will be after the manner of the Galileans. The child's speech must be moulded by example as well as by precept. Hence it is of the utmost importance that the teacher should speak correctly. One who has a little knowledge of arithmetic, geography, or history, may be able to teach these subjects to some extent, perhaps nearly as far as he himself knows; but the teacher who has but a smattering of grammar and composition is incompetent to teach these branches in their most elementary stages. And the teacher who violates the rules of grammar in every sentence, with scarcely sufficient knowledge of English to enable

him to determine when he is speaking correctly and when incorrectly, should not undertake to teach anything.

Language taught through the reading lesson.

134. The reading lesson furnishes one of the best means of cultivating language. Children should be trained to tell the story of the lesson; and as soon as they can write, they should give it in written form, at first copying it from the board or the book, and at a little more advanced stage reproducing it from memory. In this exercise careful attention should be given to spelling, punctuation, capitals, the sentence, and the paragraph. Closely allied to this exercise, but somewhat more advanced, is the reproducing of a story which the teacher has told or read to the class. The story may be read twice—once to give a general idea of it, and again to impart greater fulness of details. After correction by the teacher, these exercises should be rewritten.

Language in connection with object lessons.

135. It is not necessary to repeat what has been stated in a preceding chapter respecting the attention which should be

given to expression in every school exercise. Object lessons afford special facility for cultivating language. The pupils may be required to take the object which they have examined as a subject to write about. The first exercises will of course be exceedingly simple. The pupils will state in little sentences what they have discovered respecting the parts, qualities, and uses of the object. Suppose, for example, that a lesson has been given on paper. The pupils might be expected to write such sentences as—*Paper is thin. Paper is smooth. Paper is pliable. Some paper is white. Some paper is green. Some paper is made of rags. Some paper is made of straw.* In like manner the uses of paper might be stated. Subsequently the pupils should be led to combine these short sentences; as—*Paper is thin, smooth, and pliable. It is of various colours, as white, green, and red, etc.*

Subject and predicate.

136. In the second year of their school course, children will find a general analysis of the simple sentence quite helpful. They should be led to see that when they write

they have something to speak about, and they say something of this thing; and that the sentence has two parts—one which names what they speak of, called the subject, and the other which states something of the thing named by the subject, called the predicate. At first the adjuncts should be considered as forming a part of the subject or the predicate, as the case may be. Practical exercises should follow, in which one part of the sentence is given, and the pupils are required to supply the other part. Thus subjects may be written on the board, and the pupils will complete the sentence.

Sentence building.

137. The manner of modifying the subject and predicate by means of adjuncts should be unfolded gradually. They may be made very intelligible and interesting by a synthetic process. For example, the teacher may walk before the class, and the pupils make the statement—*The teacher walks.* The action is then repeated twice so as to show a marked contrast, and the pupils make the two statements — *The teacher walked quickly. The teacher*

walked slowly. The pupils are then led to see that *quickly* and *slowly* belong to the predicate, and that they show *how* the teacher walked. In a similar way the elements of time, place, and cause may be introduced. The action may be spoken of in such ways as to bring from the pupils the adjuncts *in the morning, in the evening, on the platform, in the hall, to get the book, to open the door.* The pupils are then led to state that these adjuncts show *when, where,* and *why* the teacher walked. As practical exercises to follow these lessons, the teacher should write upon the board sentences consisting of a simple subject and predicate, and require the pupils to supply adjuncts expressing one or more of the elements of time, place, manner, and cause.

As pupils advance they may be shown how forms of expression may be varied by changing words into phrases or clauses, simple sentences into compound or complex, and the active voice into the passive; or the reverse. Sentences in one form should then be placed on the board and

the pupils required to change them to another form.

Connectives.

138. When some ability has been acquired in constructing detached sentences of various forms, the learner should be shown how to fit sentences to each other in regular sequence or connected story. The force of such connectives and illatives as *and, but, now, then, since, whereas, therefore,* should be carefully observed. The use of these words can be taught by leading the pupils to mark their position and the special purpose served by each as it occurs in the reading lessons. Their use can be further illustrated by writing on the board statements of certain events related to each other, but without any connecting word to indicate this relation. The pupils can then be led to see that the reader of the statement might not perceive the relation, or might infer what was not true. The following sentences will illustrate the method suggested:—

Charles learned his lesson.

His father gave him a gold watch.

As here stated the facts may be entirely disconnected. The meaning will be very different according as *therefore* or *because* is supplied as the connective.

The paragraph.

139. The proper grouping of sentences into paragraphs is always a serious difficulty with beginners. Pupils are to be trained to do this by observation, by the exercise of thought, by practice, and by criticism. They should be led to observe that their reading lessons are divided into distinct portions, each containing a number of sentences bearing on some one aspect of the subject. But as in everything else, it is the actual doing of the thing which gives ability to do better. This practice should be guided by intelligence. The successful management of the paragraph is based on the proper classification and arrangement of the matter one has in hand. Hence pupils must be led to look at a subject in its different parts and aspects. No means seem so appropriate for this purpose as object lessons. In examining an object pupils discover various kinds of knowledge respecting it, each

kind falling under a distinct heading. One topic may relate to the materials of which the object is made; one to the qualities of the object; and a third to its uses. The headings of these topics should be placed on the board, and the pupils should be required to write two or more sentences on each, grouping the sentences into distinct paragraphs. For example, suppose paper to have been the subject of a lesson, discussed under the three heads, material, qualities, and uses, the pupils might afterwards write something like the following:—

Paper is made of various kinds of vegetable matter. It is made of cotton, linen, the bark of trees, straw, sawdust, and other substances.

Paper is thin, smooth, and flexible, or easily folded. These qualities adapt it to its various uses. Writing paper is generally white, or slightly tinted in pink, green, or some other colour. Wrapping paper is of coarser material and is usually brown

Paper is used for many purposes. Our books are made of paper, etc.

140. Pictures may be made very useful as a means of cultivating language. In some respects they are even better as subjects to write about than the objects which they represent; as they not only furnish occasions for the exercise of observation, but stimulate the imagination as well. For young children the picture should be very simple, representing only one or two objects. The pupils will simply observe and describe. At first they may require to be stimulated and guided by questions on what is to be seen. As the pupils advance, the pictures should become more complex, consisting of different objects so related as to present something in the nature of a study. The pupils should be required not merely to state what is apparent on the face of the picture; but they should work out by the exercise of the imagination an explanation of what is to be seen. They will thus be guided in the construction of a connected story, which, subsequently, they should be required to write out in full and revise under the criticism of the teacher. The

Pictures

stories written by different members of the class, based on the same picture, while agreeing in the main features, will differ in many minor details.

Gems of literature.

141. Memorizing select passages from standard authors within the range of the pupil's intelligence, in addition to other advantages, has an important bearing on the cultivation of language. These selections should be carefully analyzed so as to unfold their beauty and finish, and then be accurately committed to memory. The mind of the learner will thus be brought into close contact and sympathy with the master mind, and it will receive into its treasure house, at one and the same time, "the thoughts that breathe and words that burn." The pupil will appropriate the words of the author as a part of his own vocabulary, and he will, by unconscious imitation, form his style according to worthy models.

The following quotation enforces the aids to the acquisition of language which are derived from the memorizing of scraps of literature :—

"Poetry has the natural preference in this exercise. The impressiveness of the measure, the elevation of the style, the awakening of emotion, favour its hold on the memory. Now a store of remembered poetry is a treasure in itself; its first effect is emotional, and its secondary uses are intellectual; it contains thoughts, images. and language, of more or less worth, and such as are capable of taking part in our future intellectual constructions. Impassioned and rhythmical prose holds the next place; if it be inferior in form to poetry, it is yet more likely to be available in our own compositions. . . .

"Prose passages are less easy to commit. but more likely to be turned to account, than poetry. It is not, however, the highest economy to prescribe long compositions. What we want for ready use is a well-turned sentence form, or a suitable designation or phrase for some meaning that we are at a loss to render. . . In the practice of speech, in listening to speech, and in reading, we imbibe the structural arrangements of words in sen-

tences and trains of sentences; and the passages that we learn by heart give us models of sentences as well as words and phrases." Bain, *Education as a Science* (New York), p. 332, *et seq.*

Exact meaning of words and synonyms.

142. Much care should be used in order to give children the exact meaning of words. Object lessons may be given for this purpose as well as for the communication of knowledge. For example, the meaning of *transparent* may be shown by presenting clear water, glass, and other objects possessing the quality which it designates, and leading the pupils to observe how objects *appear*, or are seen clearly, *through* them. When the pupils have discovered the quality which is possessed in common by the various substances, the appropriate term is given. In a similar manner such words as porous, absorbent, elastic, fusible, soluble, absorb, melt, dissolve, etc., may be illustrated.

Synonymous terms should also be similarly illustrated or explained by a process of word-picturing, so that the pupils may see that while synonyms have a generic

sameness in meaning, each has its own peculiar phase or shade of signification which gives it special appropriateness for certain applications. Through lack of nice discrimination between words which are nearly allied in meaning, speakers and writers often misapply such words as surprise, amaze, and astonish; healthy and wholesome; learn and teach; shall and will; etc.

Familiar subjects.

143. Composition is generally regarded by children as the most irksome and repulsive of tasks. This aversion generally has its origin in a felt lack of knowledge on the subject. To require a pupil to write on a subject of which he knows little or nothing is a repetition of that old-time Egyptian servitude, making bricks and hunting up their own straw. The two-fold burden of gathering knowledge and constructing a piece of composition should not be imposed on beginners. The teacher should take measures to secure to the pupil this necessary knowledge. Oral lessons serve this purpose best. If the pupil gain his information from books, his composition

will lack originality. The materials gained through the oral lesson are, in part at least, the products of his own investigation. The ideas become a part of his mental furniture, and the expression of these ideas bears the impress of the mind in which they have taken shape. The systematic manner in which the various parts of the subject are presented in the oral lesson furnishes a guide for the construction of the essay, and trains to that orderly arrangement of sentences and paragraphs which is so essential to clear and effective writing.

Revision.

144. The importance of revision of language exercises and correction of errors by the pupils cannot be too strongly emphasized. Errors and modes of improvement should be carefully pointed out by the teacher. But it is of little use simply to show the child his mistakes, and tell him what he ought to do, or even what he must do on some future occasion. It is a waste of time and energy for the teacher to spend tedious hours in examining exercises which the pupils receive back only to tear into fragments, or to put aside without

careful inspection. The only really effective method of securing improvement is to show the pupil his mistakes, and then require him to do the work again. The careful re-writing of an exercise after criticism is of more value as a means of improvement in composition, than the writing of five new exercises.

In written exercises on slates, assigned as desk work, the correction cannot well be very thorough. It is frequently passed over with simply hearing two or three pupils read what they have written. This is of very little value. The work should be inspected by the teacher with some degree of minuteness, and the pupils should be called on to criticise and amend what is faulty.

CHAPTER XIII.

GRAMMAR.

The relation of grammar to language.

145. Language precedes grammar. Its forms are established by prevailing custom. The rules and principles of grammar are derived by generalizing the facts of language learned through investigation. Hence grammar does not give law to language, or make one form of expression right and another wrong. It simply indicates the forms which usage has established.

The study of grammar does not necessarily secure the correct use of language. One may have learned all its rules and principles, and be able to parse the most difficult sentences, but yet speak and write very inaccurately. On the other hand, it is quite possible to acquire accuracy of speech without any knowledge of the rules of grammar, by observing and imitating the spoken and written language of others.

The study of grammar may be the most useless recitation of unintelligible words, or an important practical guide and effective means of discipline, according to the way in which it is taught. If presented in such a manner as to appeal to the intelligence of the pupils, the principles and rules of grammar will furnish a ready criterion by which forms of speech can be tested, and will give confidence in cases of difficulty; at the same time, the process of deriving these principles and rules from the concrete facts of language will afford one of the best means of exercising and developing the reflective powers.

When and how shall the study begin.

146. The proper time for beginning the study of grammar depends much on the method pursued. The intelligent apprehension of definitions and rules, as presented by the text-book, requires such maturity of the reflective powers as is not generally attained by pupils under twelve or thirteen years of age. But pupils may profitably enter upon the study of grammar two or three years earlier, if they begin by examining familiar language and are led to

derive definitions and rules by a process of induction. The course must be wholly oral and be pursued in connection with the language lessons described in the preceding chapter. It is proper to remark that many distinguished educationists regard this early introduction of grammar as quite premature and unprofitable. The following outline of an oral course is suggested.

Thought and language.

147. Show pupils that mind is that which knows, feels, and wills. It has thoughts, feelings, and purposes. Lead them to state various ways of communicating ideas to others, as by expression of face, motion of the hand or of the head, and by speech or language. Show that language may be either oral or written, and that in written language the words represent sounds.

The sentence and its parts.

148. Present an object and lead the pupils to make a statement concerning it; as, *The clock ticks.* Bring from them several similar statements. Give the term *sentence.* Lead them to see that when they speak, they have something to speak of, and that they assert or say something con-

cerning this object. Require them to point out, in each sentence, the part that shows what they speak of and the part that asserts. Give the terms *subject* and *predicate.*

149. Show what is meant by classifying objects. Place various objects on the desk, as pens, pencils, and books, and require the pupils to place those that are alike together, and to separate those that differ. Lead them to state that they have placed certain objects together because they were alike. Give the term *classify*, and require a full definition. *Meaning of classify.*

Show that objects may be classified differently according to the features taken into account. Thus the pupils in the school are classified on the basis of their knowledge. They might be classified according to sex—the boys in one class, the girls in the other; or according to their age, their size, or the colour of their hair. Show that words might be classified in various ways, as according to the number of letters they contain, or according to the number of their syllables.

The Noun. 150. Present various objects, as a pen, a slate, and a knife. Ask the pupils what they call each object. Write the word on the board. Bring from the pupils that these words are not the objects, but their names. Bring from them the statement that they are *name words.* Require them to give other examples, and to select words of this kind from their reading lesson. Give the term *noun.*

The verb. 151. An idea of the verb may be given in this way :—

Call out one of the boys. Write his name upon the board. Require the pupils to make a statement of his action; as—*Charles walks.* Write this sentence and other similar sentences on the board. The pupils will state that the first word in each sentence is a noun, and that the other word does not belong to this class. Lead them to say that these words are *action* words, or, perhaps better, that they *state* or *assert* something. Require them to select words of this class from their reading lessons. Give the term *verb* as the name of this class.

The adjective.

152. Present various objects, two or more of each kind, but differing in respect to some quality; as—*white paper, red paper, a square block, a round block, a small apple, a large apple.* Hold up one object and ask the pupils to give its name. Write this upon the board. Pursue the same course with the other object of the same kind. Then hold up the two objects together and ask the pupils to place before the name of each the word which shows how the objects differ. In the same manner lead the pupils to give the name and the word which expresses the quality of each of the other objects, and have the words written upon the board. Show that the words *white, red, square, round, small, large,* are added to or placed beside the name or noun to express the quality of the object, and that they *limit* or *modify the meaning of the noun.* Require the pupils to select similar words from their reading lessons. Give the term *adjective* as the name of this class. Write nouns on the board and require the pupils to prefix adjectives.

The adverb

153. Name two boys. Tell one to come to the platform while the clock is ticking ten, and the other while it is ticking twenty. Require statements of the acts, and have them written upon the board; as,

James walked *slowly.*
Charles walked *quickly.*

Lead the pupils to see that the words *slowly* and *quickly* are added to the verbs to show how the action was done, and that they *assist the verb in stating the idea more exactly.* Ask for other examples. Give the term *adverb.* Write nouns and verbs on the board, and require the pupils to supply adjectives and adverbs.

The preposition.

154. To give an idea of the preposition, hold an object, as a book, in various positions with respect to another object, as the desk, and require the pupils to make statements; as—

The book is *over* the desk.
The book is *under* the desk.
The book is *on* the desk.
The book is *beside* the desk.

Illustrate in other ways and get statement; as—

The ball fell *from* the hand *to* the floor.

James threw the ball *at* the wall — or *towards* the wall, or *upon* the table. Write elliptical sentences, leaving out the prepositions, and require the pupils to supply the omitted words. Give the term *preposition.* Require the pupils to select words of this class and write them on their slates.

The pronoun

155. The nature and use of the pronoun can be shown by writing sentences on the board with the same nouns repeated frequently. The pupils' knowledge of language will enable them to substitute pronouns in the proper places; thus—

The farmer went into the farmer's yard, and the farmer found that the farmer's dog had killed the farmer's sheep.

The nature of the conjunction as a connective and of the interjection as an expression of emotion can be easily shown.

Common and proper nouns

156. Lead the pupils to compare class names with names of individuals, as *boy* and *Charles, girl* and *Mary, dog* and *Rover, city* and *London, river* and *St. Lawrence.* Show that the name *boy* applies equally to many individuals; it is like property

owned by all in common. On the other hand, *Charles* is the name of one individual of the class, to distinguish him from the others; it is his property. Deal in the same manner with the other examples. Give the terms *common* and *proper*, to distinguish the two kinds of nouns. Show that proper nouns are written with a capital letter at the beginning.

Number.

157. Present objects, the names of which form their plural regularly. First hold up a single object, get its name, and write the word on the board. Then hold up several objects of the same kind as in the first case, without allowing the pupils to know exactly how many are held up; get the name (in the plural form), and write it on the board over against the singular form. Proceed in the same manner with other examples. The words should then stand on the board in two columns—one consisting of words in the singular form, the other in the plural. Lead the pupils to state that in one column each word is the name of a single object, and in the other column each word names more than

one. Show them that common nouns have these two forms to express *number*, one form called the *singular* number, which expresses one, the other called the *plural* number, which expresses more than one. Further, lead the pupils to observe that in all the examples the plural is formed by adding *s* to the singular. Require them to state the rule. Teach special rules, as for nouns in *sh*, *ch*, *x*, etc., in subsequent lessons. Write nouns in the singular number on the board, and require the pupils to write the plural.

158. The modification of the adjective called *comparison* may be taught by means of three objects possessing the same quality, but each in a different degree. Take first those adjectives that are compared by affixing *er* and *est*. For example, by comparison of objects obtain such terms as *long, longer, longest; short, shorter, shortest; cold, colder, coldest.* Write these words on the board in columns, separating the affix from the original word by a hyphen. The pupils will observe that adjectives have three forms, expressing

Comparison.

three steps or degrees of quality; they will observe also that the second form is derived from the first by affixing *er*, and that the third is derived from the first by affixing *est.* Give them adjectives which are compared in this manner, and require them to write the three forms. Follow with examples that double the final consonant before the affix, as *hot, big, sad;* and then with examples of adjectives ending with *e*, as *able, noble, feeble.* Give the terms *positive, comparative,* and *superlative,* as the names of the three forms.

Show that long words generally have *more* and *most* prefixed in place of the affixes *er* and *est.* Before the pupils are sufficiently advanced for this lesson, they will have such a practical knowledge of language, that if asked to speak of objects that possess in different degrees a quality expressed by a long word, as beautiful, they will use the proper forms, *beautiful, more beautiful, most beautiful.*

Case.

159. Lead the pupils to see that nouns and pronouns take different forms to express the relation of the objects which

they name to actions or to other objects. This may be done in some such way as the following:—

Ask a boy to lean forward upon the desk. Get the statement—*William lies upon the desk.* Place his book upon the desk, and get the statement—*William's book lies upon the desk.* The pupils will observe the two forms of the noun. They will see that in the first sentence the assertion is made of William, and in the second sentence William is the owner or possessor of the book. Present other examples. Give the term *possessive case* for that form of the noun which shows possession. Show how to write the possessive, singular and plural. Give exercises in writing these forms. Show the corresponding forms of the pronouns—*he, his, she, hers, they, their.*

Pupils may be led to distinguish between the nominative case and the objective, by marking the relation of persons named by words in these cases to actions described by transitive verbs. A pupil is called on to do some act which

affects another. This is stated; as—*Charles pushed James.* The act should then be repeated, the agent and the object changing places, and the statement is made—*James pushed Charles.* The pupils will observe that in the first sentence the assertion is made of the person named by the word Charles, and in the second sentence it is made of the person named by the word James. Follow with other examples, using pronouns as well as nouns. Give the terms *nominative case* and *objective case.* The distinction will be more clearly apprehended after the lesson on the transitive verb.

Transitive and intransitive verbs.

160. Call upon pupils to do various acts, some described by transitive verbs, others by intransitive verbs. Write the statements on the board; as—*William breaks the stick. Charles tears the paper. James stands. John walks.* Lead the pupils to see that some of these verbs express action which affects an object; and that the others do not express action of this kind. Some have an object; others have no object. Call for other examples of each

kind. Require the pupils to write examples selected from their reading lessons. Give the terms *transitive* and *intransitive.*

161. At this stage teach only the present, past, and future tenses. Show that actions are related to time—they belong either to the past, the present, or the future; or show that when an assertion is made, the statement is of something that was, is now, or will be. The pupils may be questioned in respect to events of yesterday, to-day, or to-morrow; they were at school yesterday; they are at school now; they will be at school to-morrow. They learned their lessons yesterday; they learn their lessons now; they will learn their lessons to-morrow. Require them to write different verbs in these three forms. Give the terms *past, present,* and *future,* to distinguish the three divisions of time, and *past tense, present tense,* and *future tense,* as the names of the three forms of the verb to express the three kinds of time. *Tense.*

162. Require pupils to do certain things, some of which are stated by regular verbs and others by irregular verbs. Write state- *Regular and irregular verbs.*

ments on the board in the first person singular; as—*I walk, I walked, I have walked; I push, I pushed, I have pushed; I write, I wrote, I have written; I give, I gave, I have given.*

Lead the pupils to observe that some verbs form their past tense according to a rule; they add *ed* to the present. Others do not follow a rule. Write on the board the present tense of several verbs which are in common use and are familar to the pupils. Require the pupils to write the other principal parts, placing each class by itself. Give the terms *regular (according to rule)* and *irregular (not according to rule).*

Active and passive voice.

163. Require a pupil to perform some acts described by transitive verbs. Write the expressions on the board; as—*James tore the paper. William broke the pencil.* Question the pupils respecting the actor, the action, and the thing affected by the action in each case. Lead them to see that the word which names the actor or agent is the subject of the verb, and that the word naming the thing affected by the

action follows the verb in the objective case. Hold up the torn paper and the broken pencil, and require the pupils to express the same idea as before by asserting something of these objects. Write the statements on the board; as—*The paper was torn by James. The pencil was broken by William.* Lead the pupils to see that the words *James* and *William* still name the actors or agents, and that the words *paper* and *pencil* name the things affected by the action;—they name the things that are acted upon. These words stand for the same things in the second sentences as in the first; but they have not the same relation to the verb in the sentence. Lead the pupils to observe and to state that in the first two sentences the subject of the verb names the *actor;* and in the last two sentences the subject of the verb names the thing *acted upon.* Give the term *passive* for acted upon.

Call attention to the change of form in the verb when the subject denotes an active thing and a passive thing. Ask for other examples of each. Tell the pupils

that the terms *active* and *passive* are applied to the different forms of the verb instead of to the subject.

Practical exercises.

164. At every stage of progress exercises should be given in parsing, sentence-building, and analysis. These exercises are at first of the simplest kind, and they increase in complexity and fulness as the pupils advance. Thus the first stage of parsing includes simply the class to which the word belongs; the second stage includes the class and sub-class, etc.

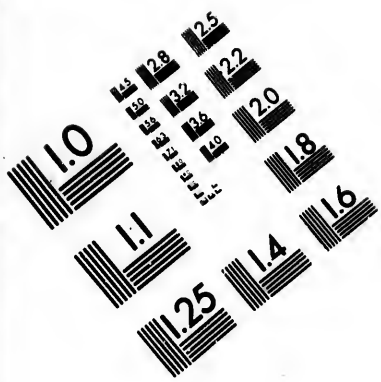
The notes here given on the oral course in grammar are not designed to cover the whole subject. The intelligent teacher can readily extend them to any desired length.

CHAPTER XIV.

GEOGRAPHY.

165. Geography is entitled to a prominent place among the studies of the common school. In making this statement, however, it is assumed that the study is something entirely different from the mere memorizing of names and figures, and pointing out places on maps. *Utility of geography.*

Geography should not only make the pupil acquainted with the leading physical features of the earth, but it should lead him to discover the relation of these features to one another. It should show him how the earth is related to man; how admirably it is adapted to his wants, supplying him with food, clothing, fuel, medicine, and innumerable means of gratifying his desires. It should show him the mutual influence of man and the land in which he dwells; how, on the one part, man leaves the impress of his



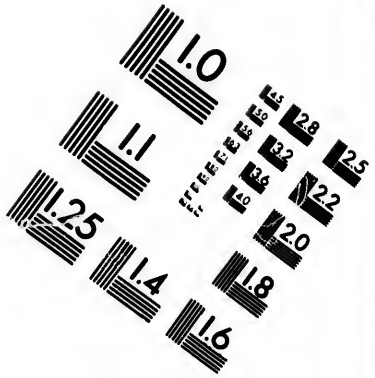
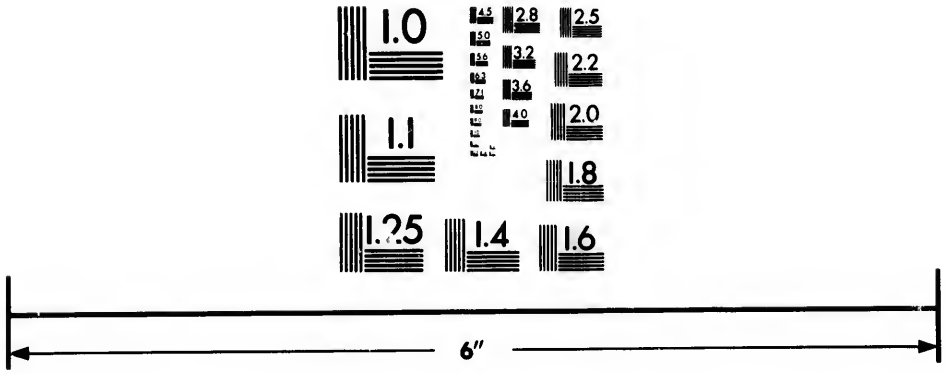
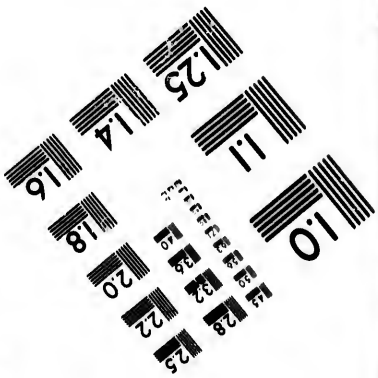


IMAGE EVALUATION TEST TARGET (MT-3)





Photographic Sciences Corporation

23 WEST MAIN STREET
WEBSTER, N.Y. 14580
(716) 872-4503

hand on the face of nature, changing forests into fertile fields, and solitary places into populous cities; and how, on the other part, the physical features of the earth affect the social and political condition of mankind. The pupils will thus be led to see that a man's environment of land or sea, mountain or plain, arid desert or well-watered valley, tropical heat or arctic cold, influences his habits and moulds his character. They will be led also to recognize the great fact of universal brotherhood of mankind, taught by the incompleteness of any one country when isolated from the rest of the world—as the great Creator has made all the peoples of the earth of one blood, so He has made the inhabitants of each land dependent on those of other lands.

Taught with such purpose and result, geography is eminently a useful-knowledge subject, of the highest practical value in almost every department of human affairs. At the same time, pursued in this way, the study is no less valuable as an educative influence. Few studies are so many-

sided, or are so well adapted to promote an all-round development of the human mind. The pupil's observing powers are exercised in the earlier course of oral lessons on his own neighbourhood; at every stage the memory is called upon to reproduce old knowledge; in the study of the relations of things—their adaptations, their resemblances, their differences, and their influence upon each other, the reflective powers are awakened and exercised in almost every phase of their multiform activity; and the constructive imagination has no more suitable sphere for the exercise of its power than in building up mental pictures of distant lands from their representations in maps and descriptive language. The power of language also finds its means of culture in the pupil's effort to give tangible form to the varied ideas he has gained through observation, imagination, and reflection.

A preparatory course of oral lessons.

166. Geographical knowledge is imparted chiefly through descriptive language and maps. Too frequently words are learned and recited with little gain of real knowl-

edge, either because the pupil has not received the primary concepts through the exercise of his powers of observation, or because he does not combine these elements through the exercise of his imagination. In a similar way, maps fail to awaken any mental picture of the countries which they represent. The most effective way to guard against these evils is to prepare the pupil for the intelligent use of the means to be employed, by a course of oral lessons. These lessons should begin with the immediate neighbourhood in which the pupil lives, taking up first those features which are most familiar. It is important that the teacher do not misapprehend the leading purpose to be served by these lessons. The hills, valleys, plains, brooks, and other features of the neighbourhood are studied not so much to gain knowledge of the locality, as to furnish the mind with concepts and their representative terms through which the pupil may afterwards gain real knowledge of things beyond the reach of his observation. In addition to the general develop-

ment of the powers of observation and thought and the cultivation of language, the lessons should aim to give a clear idea of the nature of geographical knowledge, the meaning of geographical terms, and the nature and uses of maps.

The following outline of a course of oral lessons on this subject may afford some assistance to the inexperienced teacher:—

Train to observe and describe

167. Give lessons on the various points of the compass, as shown in a preceding chapter. Place various objects on the desk and require pupils to observe and describe their position and distance. Disarrange the objects and require the pupils to place them as they were. Require the pupils to observe and describe various objects in the school-room and in the play-ground, noting form, size, colour, and distance. Lead them to give the position of the school-house, its direction and distance from some prominent object in the neighbourhood. Require them to estimate and measure the play-ground, and give its boundaries on the various sides—north,

east, south, and west; also to describe its surface—rough or smooth, flat or curved, level or inclined. Lead them to observe what happens when the rain falls upon it; whether the water flows off rapidly or stands in ponds.

Mapping.

168. Guide the pupils in drawing an oblong figure on the floor, representing the top of the teacher's desk. Require them to draw a line for the north side; then the east, the south, and the west, making the figure the full size of the desk. Place objects on the desk; require the pupils to describe their position, and then to mark their position on the plan which they have drawn upon the floor. Require the pupils to transfer the plan to their slates. They will see that they cannot draw the plan of full size upon the slate. Show the importance of making the sides of the plan on the slate in the same proportion to each other as the sides of the desk are to each other. This may be made plain by drawing the picture of a man with the arms extending to the feet. The pupils, noting the disproportion,

will say that the arms are too long. Show that the arms are not so long as their own—that they are too long only because they do not correspond with the other parts. Show them that in drawing plans and maps it is customary to let some definite short length represent a longer one. Require them to draw a plan of the desk on a scale of one inch to the foot, and then of two inches to the foot.

In a similar manner, guide the pupils in drawing plans of the school-room and the play-ground, having the various objects in the room and on the ground represented on the map. Direct them to make the north side at the top of the slate, and show that the east will then be at the right hand, the south at the bottom, and the west at the left hand.

After the various features of the school section and the surrounding country have been considered, require the pupils to draw a map, representing on it the more prominent objects of the neighbourhood.

Through these exercises in drawing maps of districts with which they are

familiar, the pupils will acquire definite notions of what a map is intended to represent; and when they afterwards study the map of an unknown country, their imagination enables them to see something more than mere lines drawn upon coloured paper. They see the country behind the map.

The school section.

169. Encourage the pupils to observe and describe the various physical features of the neighbourhood in which they live. The features brought into prominent notice will necessarily take different form according to local peculiarities. Thus the lessons suited to a place bordering on the sea would differ in many respects from those suited to an inland district. The pupils should be led to notice diversity of surface, as hills, valleys, level fields, and gentle slopes. They should discover the highest land from the flow of water after a heavy rain. Lead them to see that if the ground were quite level, the water would remain upon it and do much harm.

Lead the pupils to observe the brooks—that their existence depends on the in-

equality of the surface, and that the rapidity of the current depends on the slope. They should discover that the brook takes its rise in springs or swamps situated on the highest land, and that several small brooks, uniting their waters, form larger brooks and rivers, and that these flow onward to the sea. Guide them in discovering the benefits derived from brooks.

In these lessons the features brought under notice should be used in such a way as to prepare the pupils for the intelligent study of geography. The hills, highlands, level fields, brooks, and ponds, should give them a mental picture of mountains, water-sheds, plains, rivers, and lakes; and in like manner other features should be studied in such a way as to represent things which are similar, though on a grander scale.

170. Notice the difference of temperature at different times of year. Refer to the position of the sun in summer and in winter. The sun is not nearer to us in summer, but the rays fall upon us more *Climate.*

vertically. Allow the pupils to hold the hand to the fire, so that the rays fall perpendicularly, then inclined; in the former case they will feel much more heat than in the latter. Show that the mountain is colder than the plain. This the pupils can infer from the fact that there is often snow there when there is none upon the low ground. They can also see that slope influences temperature, by comparing the north side of a hill with the south side. Show the cooling effect of evaporation of water from the earth. Illustrate by wetting the finger and waving it in the air, by pouring cologne water upon the hand, or by sprinkling the floor with water on a hot day. In this way it can be shown that wet land is colder than dry land. The pupils may be told that it is very unhealthy near wet, boggy places, especially in hot weather. In this way they will understand some of those conditions of heat, moisture, and salubrity which are expressed by the term climate.

Minerals, plants, and animals.

171. Give lessons on the minerals and stones, the trees and wild plants, birds and

wild animals, found in the neighbourhood. Encourage the pupils to bring specimens; teach them to observe qualities and characteristic features—to see adaptations and uses. Lead them to observe the difference between the stones and plants found in one part of the district and those of another part. Show that plants which grow well on one kind of soil do not flourish on another kind. Refer to house plants which have been brought from hot countries, and are unable to endure exposure to frost.

Inhabitants.

172. The pupils have probably seen at least three of the five races of men—European, African, and Indian. Draw from them the characteristic features of each. Tell them of the original home of each race. Describe the condition and mode of life of the Indians when the country was discovered, and let them describe the present condition. Lead them to see the difference between civilized and savage, and the connection between individual ownership of soil and fixed residence, on the one hand, and progress in civilization on the other.

Give lessons on the various occupations

of men, as arising out of their circumstances and necessities; the advantages of each devoting himself to a certain calling, as compared with attempting to do the work of all the trades; the dependence of the pursuits in any particular locality upon the natural features and resources of that locality—farming upon the quality of the soil, fishing upon nearness to the sea, mining upon the mineral resources, lumbering upon the extent and character of the forests, manufacturing upon the abundance of raw material, ease in finding market, wealth and enterprise of the people. Give lessons on the importance of trade, or exchanging products with other people, and on the various means of transporting goods, as ships, railways, and trucks, with their comparative advantages. Lead pupils to consider the circumstances which influence the merchant in choosing his location—a place of frequent resort, and of easy communication with other places. In this way lead them to see why the town or village has grown up in one place rather than in another.

173. Give lessons on the educational condition of the place; the advantages of education to the individual himself—personal satisfaction, effectiveness of labour guided by intelligence, its aid in avoiding dangers, etc.; the advantages of living in a community where all the people are educated — gratification and sharpening of mind arising from intercourse, opening up various industries, furnishing honourable employment, diminishing poverty and crime, rendering property more valuable; the advantages of living in a place where there are facilities for obtaining a good education. *Education.*

174. Call attention to boundary lines, as bounds between farms; show how such bounds may be merely imaginary lines having definite position from one fixed point to another, as lines running through a forest or marsh where there is no fence. Ask for the name of the place in which the pupils live, how far around that place extends, what places adjoin on the various sides, in what county all these places are situated. Obtain from different pupils who *The county.*

have been from home as full a description as possible of what they have seen and what they know of the hills, mountains, plains, rivers, coast, products, occupations, towns, and trade of the county. Show the importance of observing closely when they visit a new place. Draw a map of the county, and make imaginary journeys, supplementing the knowledge of the pupils by graphic description. As opportunities occur, use the features that come under notice as illustrations or types of similar features to be met with in the study of the geography of the world. Require the pupils to draw a map of the county on some definite scale.

The province.

175. Question the pupils as to the counties bordering on their own county. Take imaginary journeys to each, describing features, and making maps. Pursue the same plan with the other counties; show that all the counties taken together make up a larger country called the Province.

Consider the Province as a whole—draw a map on the board and take up the physical features in systematic order, as

size, configuration, coast waters, mountains, water-sheds, slopes, rivers, lakes, climate, and products. Give a definite idea of the area by comparing it with the school section, and by showing how long time one would require to travel from one end to the other. Give lessons on the inhabitants—their number, pursuits, government, and political relations.

176. Familiar articles of foreign produce will form a good introduction to other parts of the world. Thus sugar might lead to conversation on the West Indies; tea would lead to conversation on China; various manufactured goods to conversation on England. The pupils will see that the inhabitants of different countries are dependent on each other for many necessary things, and they will desire to know how intercourse is carried on. *The world.*

The earth may now be considered as a whole—its form, the land and water surface, and the benefits arising from the sea coming up into the land, forming bays and harbours. Show how the earth's surface is represented by the maps of

the hemispheres. Trace a voyage around the world, giving names of oceans crossed and countries visited, and awakening the interest of the pupils by description of places and people. On completing the voyage, review, impressing the names of the great divisions of land and water. Trace voyages of merchant vessels between different countries, showing the products carried as freight.

Motions of the earth.

177. Show a globe as a representation of the form of the earth, and present some of the plainer proofs of the globular form. Illustrate the earth's daily rotation, its axis, the poles, and day and night, by causing an apple on a wire to rotate before a lamp. Illustrate the earth's annual motion around the sun, by carrying a ball around some central object representing the sun.

Show that, owing to the globular form of the earth, the sun's rays fall more obliquely towards the poles, and that, on account of the inclination of the axis to the plane of the earth's orbit, the part of the earth at which the sun is vertical

is constantly changing over a wide belt around the middle of the earth. Give the term *Torrid Zone* as the name of this belt. Show that the sun crosses this belt twice a year; at midsummer it is at the extreme north of the belt, at midwinter at the extreme south. Give the term *tropics* as the name of the circles marking these limits, and *equator* as the name of the circle which is half way between the tropics and which divides the earth into two equal parts. In like manner show the situation of the other zones.

Show that the position of places is determined by giving their distance north or south from the equator, and also their distance east or west of some line extending from pole to pole and crossing the equator at right angles. Give the terms *latitude* and *longitude*.

The text-book.

178. In the matter of teaching geography from the text-book, little need be added to what has been stated in the preceding chapters on the general principles of method. Topics should be discussed in the order of their dependence on each

other; for example, surface before rivers, climate before products, resources before occupations. The teacher should not be satisfied with mere examination on the statements of the book. He should question on the facts so as to awaken thought; and he should gather new knowledge from books of travel, the daily papers, and other available sources, in order to supplement the book and correct it in respect to statements which have become obsolete since its publication. He should also endeavour to awaken the interest of the pupils and lead them to form mental pictures of foreign lands, by vivid description and imaginary journeys.

CHAPTER XV.

ARITHMETIC.

179. Arithmetic properly taught is a valuable disciplinary subject. Among other benefits which might be named, it develops the habit of looking for exact results and of careful discrimination between essential conditions and matters which are accidental, having no bearing on the issue. Then the easy transition from the concrete to the abstract, which the subject affords, prepares the pupil for purely abstract thinking. *Utility of the study.*

180. No subject requires the teacher to adhere more closely to the maxim—*Things before words*, than arithmetic. The words by which numbers are named and the figures by which they are represented have, in themselves, no meaning to the beginner. The first ideas of numbers must be gained from concrete objects. Except as a matter of convenience, it is of little importance what objects are used for this purpose. It is not advisable, *First ideas through objects.*

however, to keep too exclusively to any one kind of object. In the first exercises the various operations should be carried on with objects presented to the pupils for actual inspection; then, as an intermediate step between the concrete and the abstract, the work should be done by naming familiar objects which are not brought before the pupils.

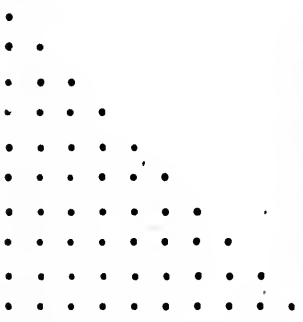
Various simple forms of apparatus are used to illustrate numbers. The ball-frame is a common and convenient arrangement. A low table supplied with wooden pins for counting and other operations serves the purpose well. An improvement on the ordinary ball-frame is a high, self-supporting frame three or four feet wide, with large movable balls of different colours on horizontal wires stretched across the frame.

The method of dealing with the objects may vary much in matters of detail without involving any violation of principle or diminution of success.

A course similar to the following is suggested:—

181. Beginners should first be made thoroughly acquainted with the numbers from one to ten. They should count objects up to ten, state each number as the objects are set off in groups, separate the objects so as to show the various smaller numbers that may be used in making up a larger number, and finally they should make all the possible combinations of the numbers from one to ten. These different steps may be thus illustrated:— *Numbers from one to twenty.*

Require the pupils to count off one ball on the first wire, two balls on the second wire, and so on up to ten balls on the tenth wire, always naming the objects as they count.



The balls will then stand on the different wires as here shown. Require the pupils to name, without counting, the number on each wire, as *one ball, two balls, three balls, etc.*

Separate the two balls on the first wire, thus—

. . ; bring them together and require pupils to state—*One ball and one ball are two balls.* Move one ball away and require pupils to state—*One ball from two balls leaves one ball.* They will also see that two ones make two.

Place the balls on the third wire, thus—

. . . ; show the pupils as before that *two balls and one ball are three balls,* and that *one ball from three balls leaves two balls.* Place the balls thus—. . .; bring them together, get the statement—*One ball and two balls are three balls.* Also show that *two balls from three balls leave one ball.*

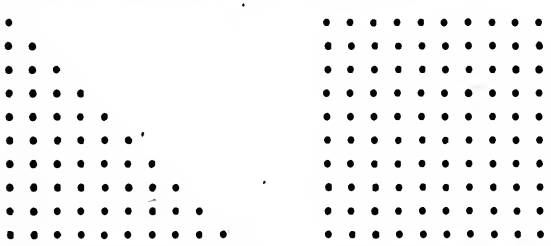
On the fourth wire make in succession the following arrangements:—

. . . . ; . . . . ; . . . . ; and bring from the pupils the statements—*Three balls and one ball are four balls. One ball from four balls leaves three balls. Two balls and two balls are four balls. Twice two balls are four balls. One ball and three balls, etc.*

Pursue a similar course with the other numbers to ten. Give exercises in adding and taking away by naming objects which are not present; as—*Two cents and one cent are how many cents?* Give the same exercises with abstract numbers; as—*Two and one are how many?* Teach the figures which represent the various numbers, by writing them on the board under corresponding lines or dots and words; thus—

•	••	•••	••••	•••••	••••••
one	two	three	four	five	six, etc.
1	2	3	4	5	6

Teach numbers from ten to twenty by combining with ten the various numbers from one to ten. These combinations may be shown with balls as below:—



Require the pupils to state the number

of balls in each group; then to state the groups on each wire, as—*One ball and ten balls—Two balls and ten balls—Three balls and ten balls—Four balls and ten balls, etc.* Let them then omit the name of the objects and state—*One and ten, two and ten, three and ten, four and ten, etc.* Finally give the terms *eleven, twelve, thirteen, fourteen,* etc. Tell them that *teen* is another form for ten. They will thus see that these numbers are made up of ten and some other number.

Follow with exercises in adding and taking away balls, as—

Ten balls and one ball are eleven balls. One ball and ten balls are eleven balls. Ten balls from eleven balls leave one ball. One ball from eleven balls leaves ten balls.

Proceed in a similar manner with ten and two, ten and three, ten and four, etc. Give similar exercises by naming objects not present. Teach the figures which represent the various numbers from ten to twenty in the same manner as the preceding figures were taught. Drill thoroughly, by means of balls and other

objects, on those combinations of numbers under ten which have not been already learned; as, 3 and 8, 3 and 9, 4 and 7, 4 and 8, 4 and 9, 5 and 6, 5 and 7, 5 and 8, 5 and 9, 6 and 5, 6 and 6, 6 and 7, 6 and 8, 6 and 9, etc. These exercises will involve both addition and subtraction; as—*six balls and nine balls are fifteen balls. Six balls from fifteen balls leave nine balls. Nine balls from fifteen balls leave six balls.*

Give mental exercises on all the possible combinations of the numbers under ten taken in pairs, of which there are forty-five, as shown below:—

1	1	1	1	1	1	1	1	1	2	3	4	5	6	7	8	9
1	2	3	4	5	6	7	8	9	9	9	9	9	9	9	9	9

2	2	2	2	2	2	2	3	4	5	6	7	8
2	3	4	5	6	7	8	8	8	8	8	8	8

3	3	3	3	3	4	5	6	7
3	4	5	6	7	7	7	7	7

4	4	4	5	6
4	5	6	6	6

5
5

Question the pupils on these combinations; *e.g.*—What two digits make two? *One and one.* What two digits make three? *Two and one.* What two digits make four? *Three and one. Two and two.* What two digits make five? *Four and one. Three and two.* The last combination is nine and nine, making eighteen.

Write the questions for the combinations on the board, and require the pupils to place the work in figures on their slates; as,

	1	2	3	2	4	3
	1	1	1	2	1	2
	2	3	4	4	5	5

Write the combinations on the board, and require pupils to add; as—

1	2	3	2	4	3
1	1	1	2	1	2

Drill thoroughly, until the pupils can give the sum as soon as the pointer rests on the numbers. The various pairs of digits which make any number should not be taken consecutively. Exercise every pupil individually.

Give the various numbers from two to

eighteen and one component digit, requiring the pupils to state the other; as—

What number taken from two leaves one? What number taken from three leaves two? What number taken from three leaves one?

Take the same exercises for slate work and for blackboard drill. The exercises may be written on the board thus—

2	3	3	The pupils will write the required number above the line.
—	—	—	
1	2	1	

Require the pupils to add and subtract by twos. Begin by placing all the balls to the left side of the frame. Separate two balls by moving them to the middle of the frame. The pupils state the number—*two balls.* Move the balls to the right side of the frame. Move off two balls on the second wire; the pupils state the number —*two balls.* Move the balls over to the right side, and require the pupils to state the sum—*four balls.* The teacher should not speak (as—*How many balls?*), but simply raise the hand as a signal for the pupil to state the number.

After adding twos as far as twenty, give exercises in taking away twos, beginning at twenty and coming down to two; as—two from twenty, two from eighteen, etc. Develop the idea of multiplication and division, by leading the pupils to discover the number of twos in two, four, six, eight, etc.

Proceed in the same manner in the various processes with threes, fours, etc., to nines, the sum not exceeding twenty.

Numbers from twenty to one hundred.

182. Give exercises in counting from twenty to one hundred. Call attention to the systematic way in which numbers are named,—there being a new term after every additional ten above twenty, as *twenty, thirty, forty*, etc., which mean two tens, three tens, four tens, etc., and the intervening numbers always having the name of the digits; as—twenty-*one*, thirty-*one*, forty-*one*, etc.

Lead the pupils to observe how their ability to add digits whose sum is between ten and twenty may aid them in adding a digit to a larger number; as—eight and five are thirteen, eighteen and five

are twenty-three, twenty-eight and five are thirty-three, etc. Show that they may have the same aid in subtraction; as seven from sixteen leaves nine, seven from twenty-six leaves nineteen, seven from thirty-six leaves twenty-nine. Drill thoroughly on such exercises, until the pupils can deal with the higher numbers as readily as with the lower.

183. Illustrate multiplication and division by balls; as— *Multiplication and division tables.*

Two balls and two balls, or twice two balls are four balls. Twice two are four. There are two twos in four, or two into four twice.

Lead the pupils to form multiplication and division tables for themselves by processes of addition and subtraction. They may work out these tables by addition thus:—

2	2	2	2	3	3	3	3
—	2	2	2	—	3	3	3
2	—	2	2	3	—	3	3
	4	—	2		6	—	3
		6	—			9	—
			8				12

o

They may be required to state results thus:—

Once two is two, twice two are four, etc. Two is contained in two once. Two is contained in four twice. Or they may be taught to use signs and write results thus—

$2 \times 1 = 2$	$2 \div 2 = 1$
$2 \times 2 = 4$	$4 \div 2 = 2$
$2 \times 3 = 6$	$6 \div 2 = 3$

After making the table the pupils should learn it thoroughly.

Notation.

184. According to the course proposed in the preceding pages, the pupils have, at this stage been taught to write numbers as far as 100. As yet, however, they have no definite idea of the principle which underlies notation. Some simple illustrations of the decimal system may now be given to aid them in writing and reading numbers with greater facility and in carrying on the various processes with intelligence.

As already suggested, lead the pupils to consider the numbers above ten as combinations of ten with some other number.

They should observe that the words which name certain numbers are composed of the word ten (*teen*) and the words which name the digits, as *four-teen, six-teen,* etc. Hold up four objects, as pencils, in the right hand and ten in the left hand. The pupils will state the numbers in each, *four, ten.* Bring the objects together, and the pupils state *fourteen.* Pursue the same course with the numbers *sixteen, seventeen, eighteen, nineteen.* By this division of the numbers into two parts, the pupils are prepared for the use of two figures in writing them.

Place a band around the ten pencils, and lead the pupils to consider them as a bundle—*one bundle—one ten.* Now, holding this bundle in one hand and six loose pencils in the other, call upon a pupil to write on the board the figures denoting each—the six loose pencils and the one bundle. The figures should not be placed together. Lead the pupils to see the importance of having some way of distinguishing whether a figure denotes ones (units) or tens. Draw vertical lines

on the board making two columns. Write the headings, *units* and *tens*. Require the pupils to write each figure in its proper column. Deal in the same manner with other numbers between ten and twenty. Show that the unit column is always on the right, and if there are tens without units a nought (0) is placed in the unit column. In teaching to write numbers from 20 to 29, tie up two bundles of ten each. It will scarcely be necessary to illustrate further. If considered desirable, however, ten bundles of ten each can be tied up in one large bundle, and a third column can be placed on the left of the tens to illustrate 100. Finally show the pupils that the vertical lines and the headings are not needed, as the right hand figure is always units, the next tens, the third hundreds, etc.

tens.	units.
1	6

Pupils should never be required to work with numbers which are beyond their ability to read.

Addition.

185. The first written exercises in addition should be very simple, consisting of

single short columns, gradually increasing in difficulty. Drill thoroughly in the rapid addition of figures written on the board. The pupils should not name the figures, but simply give the sum as they add.

4	5	Thus in adding these columns,
1	3	as the teacher points to the
2	6	figure, the pupil will say—
3	4	*Three, five, six, ten. Four,*
—	—	*ten, thirteen, eighteen.*

In advancing to two columns give first such numbers that the sum does not exceed nine. Teach the process of "carrying" by means of sticks or pencils. Thus in adding 19 and 37, bring before the class two bundles of ten each and nine loose sticks; also three bundles and seven loose sticks. Bring the loose sticks together; tie up ten of them, leaving six loose sticks.

19
37
—
56

Write six in the column of units; place the bundle with the others, making in all five bundles. Write five in the column for tens.

Do not allow pupils to write the number to be "carried over" to the next column.

Subtraction.

186. In the first exercises in subtraction the lower figure should never exceed the upper. When the lower figure is made greater than the upper, illustrate by sticks. Thus in subtracting 28 from 54 bring before the class four loose sticks and five bundles of ten each. The pupils see that they cannot take eight sticks from four. They break the band of one bundle, giving ten loose sticks, making fourteen in all, and leaving four bundles. The process then becomes 8 pencils from 14 and 2 bundles from 4.

$$\begin{array}{cc} {\scriptstyle 4}\ {\scriptstyle 14} & \\ 5\ \ 4 & \\ 2\ \ 8 & \\ \hline 2\ \ 6 & \end{array}$$

Multiplication.

187. Require the pupils to find by addition the sum of a number taken a certain number of times, as 4 taken three times. Show that by knowing the multiplication table they can find this sum more readily. As first exercises in written work, require the pupils to multiply each number from 2 to 12 separately by each number from 2 to 12, thus going

$$\begin{array}{r} 4 \\ 4 \\ 4 \\ \hline 12 \end{array}$$

over the ground of the whole multiplication table. The work will appear thus:—

2	2	2		3	3	3		4	4	4
2	3	4		2	3	4		2	3	4
—	—	—	etc.	—	—	—	etc.	—	—	—etc.
4	6	8		6	9	12		8	12	16

In advancing to larger numbers give several exercises which do not involve the process of "carrying;" as the following:—

3 1 4	3 2 0 3
2	3
6 2 8	9 6 0 9

Illustrate the process of "carrying" by sticks, as in addition.

Show that multiplying a number by 10 does not change the significant figures of the number, but removes each figure one place to the left, thus increasing its value tenfold. Hence multiplying by ten simply places 0 on the right.

188. Show that multiplying by the component parts of a number and adding the products gives the same results as multiplying by that number. Illustrate by a multiplier not exceeding 10. Thus 684 × 8 = 5472. Also (684 × 5) + (684 × 3) = 5472. Show that the same result

Multiplication by two figures.

is obtained by taking other component parts, as 2 and 6.

Take as multiplier a number between 12 and 20, as 16. Lead the pupils to divide this number variously into two component parts, such as 9 and 7, 8 and 8, 10 and 6. Multiply some number separately by the two numbers into which 16 has been divided, and add the two products obtained; thus—

256	256	256	256	256	256
9	7	8	8	10	6
2304	1792	2048	2048	2560	1536
	2304		2048		2560
	4096		4096		4096

Call the attention of the pupils to what they had previously learned respecting the simple method of multiplying by 10, and they will recognize that of the various multipliers 6 and 10 are the easiest. Show them that it is not necessary to write the number to be multiplied twice;—that they can write both multipliers under the multiplicand, and multiply first by one and then by the other. They should at first

write the nought (0) in the unit's place when multiplying by ten; thus— then, observing that it is not required to indicate the proper place of the other figures, they can omit it.

```
 5364
   16
-----
32184
53640
-----
85824
```

In multiplying by 20, 30, 40, etc., the pupils must be taught that multiplying by the factors of a number gives the same result as multiplying by the number itself. They should then be led to observe that the process of multiplying by the factors is shortened by moving the figures one place to the left and multiplying by the figure denoting the number of tens, at the same time.

197. By objects, illustrate division as a means of finding how often one number is contained in another. Give mental exercises in dividing by the various digits from 2 to 9, beginning for each divisor with a dividend that gives a quotient of 1, and gradually increasing to a dividend that gives 9; *e.g.*— *Division.*

Divide numbers from 2 to 18 by 2; numbers from 3 to 27 by 3; numbers from 4 to 36 by 4; etc.

Give similar exercises with dividends in which the divisor is not contained an exact number of times.

Give similar exercises for slate work, teaching the pupils to use the long division method; thus—

```
2) 2 (1    2) 3 (1        3) 3 (1    3) 4 (1
   2          2  etc.        3          3  etc.
   —          —              —          —
              1                         1
```

Keeping the long division process, follow with small divisors and dividends of several figures without remainders in the several steps. Show how to estimate the value of the quotient figures as they are obtained; thus—

```
2) 6482 (3000
   6000   200
   ——      40
    482     1
    200   ——
   ——    3241
     82
     80
     —
      2
      2
      —
```

The pupils should first read the number *six thousand four hundred and eighty-two*, and state that it is desired to find how many times it contains the number 2. They should then state the value of each figure in the dividend,—2 units, 8 tens, 4 hundreds, 6 thousands. Then, as 6 is

thousands, the quotient 3, which arises from dividing it by 2, is also thousands, etc.

Illustrate the mode of dealing with remainders by means of objects. Thus, suppose 437 is to be divided by 3. Write the divisor and the dividend upon the board. Take four hundred and thirty-seven sticks; tie them up in bundles of ten each. Tie up these bundles in larger bundles, putting ten small bundles in one large bundle. There will then be four bundles of hundreds, three bundles of tens, and seven loose sticks. Call out three pupils, and suppose the sticks are to be divided equally among them. Give each one bundle of a hundred, and write 100 in the quotient. Multiply the divisor by the quotient and subtract from the dividend. Untie the remaining large bundle, and placing the ten small bundles with the three of the same kind, divide as before, giving each pupil four bundles of

```
3) 437 (100
   300   40
   ---    5
   137   --
   120  145
   ---
    17
    15
    --
     2
```

ten. Write 40 in the quotient, multiply, and subtract. Untie the remaining small bundle, and placing the ten loose sticks with the others, divide among the pupils, giving each five and leaving two sticks. Multiply and subtract. Each pupil has now one bundle of a hundred, four bundles of ten, and five sticks, or 145 sticks.

Show that the written work may be shortened by omitting the ciphers.

Give slate exercises in division, gradually increasing the divisor, until the pupils have acquired facility in the long division process. At this stage, teach the short division method for small divisors, by showing the pupils how they can carry on the process of division by remembering products and remainders without writing them on the slate.

Exercises with concrete numbers.

190. The pupils should not work exclusively with abstract numbers while learning the four fundamental rules. They should have frequent mental exercises in applying these processes to common practical examples such as the following:—

William had twenty cents; he bought

three oranges at four cents each, how many cents had he left?

They should, also, at the same time, learn the more common tables of weights and measures, and apply them by multiplication and division to simple questions in reduction; *e.g.*, in bringing feet to inches, yards to feet, pounds to ounces, quarters to pounds, and the reverse. At first these exercises should involve but one step, and when the pupils are familiar with this, two or more steps should be included in one exercise, as in bringing yards to inches. Multiplication and division, when applied in this way, have a meaning and awaken an interest which they do not possess in their application to abstract numbers.

Throughout every stage of progress the exercises and problems in arithmetic may be made the medium for conveying, in an incidental way, valuable knowledge on other subjects. This economy in educational work is well enforced by Dr. Bain in the following quotation:—

"Instead of giving unmeaning numbers

to add, subtract, multiply, and so on, we might, after the more preliminary instances, make every question contain some important numerical data relating to the facts of nature, or the conventional usages of life; anticipating as far as may be, the future exigencies of the pupils in their station in life. Not that they should be asked to commit these data to memory, or be twitted for not having attended to them, but that in those moments when attention is not engrossed with the difficulties of the purely arithmetical work, it may chance to fix upon the numbers given in the question, and thereby impress these on the memory.

"For example, the leading dates in chronology might be embodied in a variety of questions. . . . In a similar way important geographical numbers could be stamped on the recollection by being manipulated in a variety of questions. . . . The common weights and measures should be familiar to every one; and these might be so wrapped up in exercises that the pupil could not avoid taking note of

them. The mere act of writing them a number of times on the slate, with a view to solving questions, would render it almost impossible to escape being struck by them."—Alexander Bain, *Education as a Science* (New York), pp. 292 and 293.

191. The tables should be taught experimentally, by presenting the weights and measures and leading the pupils to discover their relation to each other. If it is found impracticable to extend this method to all the tables, such objective illustrations of a few of them will aid in making a verbal explanation of the others fairly intelligible. *Tables of weights and measures.*

In teaching *Long Measure*, present a stick an inch in length. Require the pupils to draw lines of the same length, always applying the measure, that they may obtain definite conceptions. Give the term *inch*. Require them to draw other lines of various lengths, as two inches, six inches, twelve inches, verifying the work in each case. Give the term *foot* as the name of the measure twelve inches long.

Require the statement — *Twelve inches make one foot.* Pursue the same method with higher denominations. Require estimates of length and distance, followed by actual measurement.

In teaching *Square Measure,* see first that the pupils know what a square is— a figure having four equal sides and four right angles. Present a square inch. The pupils observe and state that it is a square, each of whose sides is an inch in length. Give the term *square inch.* Draw upon the board a square foot. Require the pupils to measure it, and to state that it is a square foot. Divide the square foot into twelve strips one inch wide and twelve inches long. Divide one of these strips into square inches. The pupils observe that there are twelve square inches in one strip, and that there are twelve strips, so that there are one hundred and forty-four in all. Require a full statement. In the same manner, lead the pupils to discover the number of square feet in a square yard. In teaching the number of yards in a rod, take some shorter measure

to represent the longer, as a foot for a yard.

In teaching *Cubic Measure*, first develop the idea of a cube. Then present a cube each of whose faces is a square inch. Give the term *cubic inch* as the name of the block. Show that in Long Measure there is but one dimension, *length;* in Square Measure there are two dimensions, *length* and *breadth;* and in Cubic Measure there are three dimensions, *length*, *breadth*, and *thickness*. Present twelve boards, each one inch thick and one foot square, placed one upon another so as to form a cubic foot. The pupils measure the block thus formed, and state that it is a *cubic foot*. Cut a cubic inch from a corner of one board. By drawing lines across the board dividing it into squares, lead the pupils to discover that one board contains one hundred and forty-four cubic inches. By multiplication (144×12) they will then discover the number of cubic inches in one cubic foot. Without the aid of blocks the teacher can now lead the pupils, in imagination, to build up cubic feet into

a cubic yard. The pupils will see that three rows each having three cubic feet, including in all nine cubic feet, would build one yard long, one yard broad, and one foot high; nine more blocks placed on these would make the pile two feet high; and nine more upon these would complete the cubic yard. Thus twenty-seven cubic feet make one cubic yard.

Fractions.

192. Develop the idea of a fraction by the division of objects, as lines or apples, into equal parts.

Divide an apple into two equal parts; each part is one half. Follow with exercises; as—

How many halves in two apples? In three apples? etc. How many wholes in four halves? In six halves? In nine halves? etc.

Divide an apple into four equal parts, and give the term fourth as the name of each piece. Question as before on the number of fourths in various wholes; and also on the whole contained in various fourths. Pursue the same method with thirds, fifths, sixths, etc. Drill the pupils

thoroughly until they fully understand and are able to state that when the object is divided into two equal parts the parts are *halves;* when it is divided into three parts they are *thirds*, etc. See that they understand that these terms are the names of the pieces; for example, that in the expression *three fifths*, *three* expresses the number of pieces and *fifths* the name of those pieces.

Show how to write fractions. Hold up a number of pieces of the same name, as *fourths.* Require the pupils to give the name, and then to state the number of these pieces presented. Write the number and name on the board in words, as *three fourths.* Write this again thus— $\frac{\text{three}}{\text{fourths}}$. Lead the pupils to substitute the figure for the word thus— $\frac{3}{\text{fourths}}$. Finally tell them that it is written with 4 for fourths, thus— $\frac{3}{4}$. Keep clearly before them at every step that the word or number above the line shows the number of

pieces, and the word or number below the line the name of these pieces. Pursue the same course with other fractions. Give the terms *numerator* and *denominator.*

Show that a *proper fraction* is less than a whole, that a fraction which contains a whole is called an *improper fraction,* and that a number which consists of both a whole and a fraction is called a *mixed number.*

Illustrate the mode of changing a mixed number to an improper fraction and the reverse, by presenting examples in the form of a reduction exercise. Thus—$7\frac{5}{12}$ may be written—

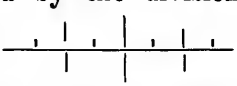
wholes	twelfths
7	5

The pupils should be required to change this to twelfths, thus—

$$\begin{array}{r} 7 \quad 5 \\ 12 \\ \hline 89 \text{ twelfths} \end{array}$$

They should then change this to the form $\frac{89}{12}$

Show that the value of a fraction

depends on the relation in respect to magnitude between the numerator and denominator, and not on the magnitude of either one of the terms taken by itself. This may be illustrated by the division of a line into halves,  fourths, and eighths. One half, two fourths, and four eighths are seen to have the same magnitude.

In teaching addition and subtraction of fractions, keep prominent the idea that the denominator indicates the name of the parts. Show that as in denominate numbers the quantities must be of the same name before these processes can be carried out, so fractions must have a common denominator—that is, they must be of the same name or kind. Similarly in other processes in fractions, illustrate the mode of procedure by the method in corresponding cases of whole numbers.

Rules should be derived by the pupils.

193. Pupils should not be allowed to work exercises in arithmetic by a mechanical following out of a rule which they have committed to memory, whilst they are wholly ignorant of the rationale

of the method pursued. They should be led to discover rules for themselves by an analytic study of examples or problems placed before them for solution, and when they have discovered the rule, they should be aided in expressing it in the most suitable terms. The examples presented for this purpose should be carefully selected, so as to avoid all non-essential conditions which might tend to obscure the principle involved.

To illustrate, suppose the pupils are to be taught the rule for multiplying a fraction by a whole number. Take the following example, $\frac{3}{4} \times 2$.

First lead the pupils to state that the number to be multiplied is 3, that the name or denomination of that number is *fourths*, and that it might be written 3 *fourths*. They will then at once perceive that it can be treated as an ordinary case in whole numbers; in other words, they will see that 3 should be multiplied by 2, while the 4 remains unchanged. The exercise will stand $\frac{3 \times 2}{4}$ $\frac{6}{4} = 1\frac{1}{2}$.

Again, lead the pupils to see that in the expression $\frac{3}{4}$, 3 is divided by 4, and that the value of that expression will be made twice as great by taking one half of this divisor, that is by dividing the numerator by 2. Hence the exercise may be worked as follows— $\frac{3}{4 \div 2} = \frac{3}{2} = 1\frac{1}{2}$.

Lead the pupils to work two or three similar exercises in the same manner; as—

$$\frac{3}{12} \times 4 = \frac{3 \quad 4}{12} = \frac{12}{12} = 1 \cdot \text{ or}$$

$$\frac{3}{12 \div 4} = \frac{3}{3} = 1.$$

$$\frac{7}{9} \times 3 = \frac{7 \times 3}{9} = \frac{21}{9} = 2\tfrac{1}{3}; \text{ or}$$

$$\frac{7}{9 \div 3} = \frac{7}{3} = 2\tfrac{1}{3}.$$

Finally, bring out the general statement—

To multiply a fraction by a whole number, either multiply the numerator of the fraction by the whole number, and leave the denominator unchanged; or divide the denominator of the fraction by the whole

number, and leave the numerator unchanged.

After pupils have become familiar with any particular case, it is advisable to give the same question in various forms, so that they may not be dependent on any one form of statement or phraseology for a clear apprehension of the data and requirements.

CHAPTER XVI.

SCHOOL ORGANIZATION.

194. School organization involves all arrangements made at the outset for placing the school in proper working condition. It provides the proper equipments and conditions required for effective work. It is not the end for which the school exists, but it provides the means by which the grand aims of the school can be most fully realized. It places each pupil in his proper position, provides suitable employment for him throughout every period of the day, adjusts the different kinds of work in adaptation to the circumstances and wants of each pupil, and makes such arrangements that all necessary movements can take place without confusion. Good organization is essential to the full display of teaching power, and it is of vital importance to the easy and effective management of the school. The discipline of the

Nature and importance.

school is closely dependent on its organization. Arrangements which interfere with thorough supervision, or which fail to give full employment to the pupils, are fruitful sources of disorder and misconduct. It is true in the school as elsewhere, that "the sight of means to do ill deeds makes ill deeds done."

The first day. 195. The first day of the term often determines the teacher's success or failure. It is full of embarrassments to the beginner. The old puzzle of the man with his fox, goose, and corn is scarcely more perplexing. The inexperienced teacher cannot keep his pupils in order, because he fails to supply them with suitable work; he cannot give them work, because he does not know what they are able to do; and he is unable to test their knowledge, on account of his inability to maintain order.

While the work of organization is in progress, little real teaching can be done. The chief matters which claim attention are examination, as a basis for arranging the pupils in proper classes, and drilling in orderly movements. And yet these

matters must not be persisted in so exclusively as to become monotonous and wearisome. The interest of the pupils must be sustained, even though at the cost of some deviation from the main purpose. The teacher may, during the first day or two, find it necessary to exercise his ingenuity in providing employment which may at least serve the purpose of occupying the the time and preventing the mischief which results from idleness.

The teacher should make all possible preparation for the first day. If practicable, he should be in the section a day or two before the term begins, for the purpose of gaining information relative to the condition and circumstances of the school. He can then adopt temporarily the classification and time-table of his predecessor, and afterwards make such changes as he may find necessary. The mere ability to recognize the pupils and call them by name will count for something in helping on the first day's work.

The teacher should be prepared with a selection of suitable work for the pupils.

This work should be selected with special view to classification, including questions in arithmetic, grammar, geography, and history. As far as space will permit, these questions should be written on the board. Simple drawing exercises, or words for copying, should be provided for the younger pupils. A few scribbling books and lead pencils, which could be obtained at trifling cost, will furnish facilities for doing the work in such form that the teacher can take it up and examine it carefully after school is dismissed.

The teacher should make special point of being in the school room, on the first morning, before the pupils arrive. He will thus be able to receive them as they come in, and to appear before them, at the first, with an air of self-possession which he could less easily assume if they had been in the room when he arrived.

When the hour for opening school has arrived, a gentle stroke of the bell should bring all quietly to their seats. The teacher may then say a few pleasant words of greeting, following with religious exer-

cises, if any are to be observed in the school. Such exercises should never exceed five minutes in length. The teacher should speak in low, soft tones, and his manner should be easy and composed. He should avoid saying much on the matter of conduct, but should quietly assume that all will be right. After the opening exercises are over, he should group the pupils according to the classification which had previously existed, seat the classes in the most convenient position, and proceed with the work. The more advanced pupils can take the exercises which have been written on the board, putting their work on paper, and proceeding from the simplest questions to the more difficult. In the meantime the teacher should give the younger pupils some oral exercises, after which he can take their names and dismiss them for the day. He will then be at liberty to give full attention to the more advanced pupils.

Registration.

196. The recording of the name, age, and attainments of the pupils belongs to school organization. The official reports very properly require the number of chil-

dren in the section who are of proper age to attend school. It is a matter of much importance that this be accurately ascertained, in order that it may be definitely known if all for whom the school is designed are participating in its privileges. More care and accuracy would be secured, if the names and ages of all the children in the section between five and fifteen years of age were inserted in the Register, and also in the official report. The names upon the Register of children who are growing up without education might awaken interest and effort on the part of teacher and trustees, which would result in bringing these children to school. Compulsory attendance seems to be the fitting complement of compulsory support of the school, but milder measures pursued with hearty persistence would reach many cases with better effect.

The Register may also become indirectly a means of securing greater regularity of attendance. The teacher should carefully scan its columns, at least once a week, and note all irregularities. He should

visit the homes of absentees and those who are irregular in their attendance, with the view of securing improvement. The interest thus shown in their children can scarcely fail to call forth some response from the parents, which would tend largely to remove the evil under consideration, as well as to establish pleasant relations, generally.

197. The grouping of pupils of similar attainments and ability for the purpose of class teaching, has important advantages. It not only economizes time and labour, as compared with teaching each pupil separately, but also incites to greater activity through sympathy of numbers and the spirit of emulation which it awakens. *Classification.*

Whilst attainments in knowledge should constitute the chief basis of classification, age, natural ability, and the health of the pupil claim consideration as subordinate elements. A pupil naturally clever, but less advanced than others of his age on account of limited advantages, may be placed in a higher class than his scholarship would warrant. It is proper also to

take into account the injurious results which are likely to arise from placing in the same class pupils who differ widely in respect to age. Such disparity is unfavourable to that sympathy which is necessary to sustain emulation and hearty co-operation. The older pupils are apt to consider themselves degraded by such association, while the discipline and general mode of treatment required for one portion of the class are unsuitable for the other.

Two extremes are to be guarded against in classifying a school,—too many classes and too few classes. The ability to adapt a lesson to a group of children depends upon the equality with which they are matched. With the laudable desire of giving as much time as possible to each class, the teacher may be led to group in the same class pupils of such unequal attainments, that the work cannot be suited to all; and, on the other hand, by looking too exclusively at the importance of equality, he may make so many classes that he has not time for effective supervision.

In towns and villages having pupils

enough for several schools, much more thorough classification can be secured by the organization of graded departments, each under a separate teacher, than would be practicable in country sections, having all the grades of the common school under a single teacher. In a system of graded schools, with a course of study extending over a period of about eight years, eight grades form a good working organization. Each department should have two classes, and promotion should be made half-yearly. The average pupil would remain one year in each department, six months in the second class, and six months in the first class. This arrangement allows each class to spend half the time under direct teaching and half the time at desk work, the teacher taking each class in turn for recitation. The more active and clever pupils will frequently be able to do the work of a department in six months, passing, for instance, directly from the first class of one department to the first class of the next. On the other hand, pupils who are below the average ability may some-

times need to remain longer than one year in the same department. It is always desirable to have two classes in each department. Under an organization which gives the teacher but one class, the pupils are likely to receive too much assistance, and they thus fail to acquire habits of independent effort and self-sustained activity.

While, in carrying on school work, every subject in the course of study should receive due attention, and should, to some extent, be taken into account in determining the place of each pupil, classification may very properly be based on attainments in a few leading subjects. These test subjects are such as require to be pursued consecutively, so that the pupil who is unskilled in the earlier stages is unable to enter successfully upon the more advanced. Reading, arithmetic, and grammar are of this nature. In other subjects again, as geography and history, in which there is no such intimate dependence of one part upon another, pupils of varied attainments can work profitably together. Hence, in classifying an ungraded or miscellaneous

school, reading may be taken as the leading test subject for pupils under eight years of age; attainments in reading and arithmetic will, in the main, determine the proper position of pupils between eight and eleven or twelve years of age; and knowledge of arithmetic and grammar should, for the most part, determine the classification of the older pupils.

Among the causes which complicate the matter of classification is the unequal standing of pupils, as measured by their attainments in different subjects. For example, a pupil may be a good reader, but be very backward in arithmetic, or the reverse. Not unfrequently it happens that a pupil has a special aptitude for certain general lines of work, as for the whole group of mathematical subjects; while he shows a corresponding inaptitude for other lines of work.

Different methods of classification are adopted, according as the aim is to meet the requirements of a curriculum drawn up to secure an all-round development, or of one designed to secure an exact adaptation of

subject to the peculiar mental phase of each pupil. Thus three distinct methods of classification have been employed, designated *Single Classification*, *Manifold Classification*, and *Twofold Classification*.

SINGLE CLASSIFICATION, called also *Close Classification*, consists in examining a pupil in all the leading branches, and placing him in that class which his average attainments seem to warrant. Each pupil is thus classified but once, and is placed in the same class in all subjects. MANIFOLD CLASSIFICATION, sometimes called *Loose Classification*, implies that the pupils are examined in each subject separately, without respect to attainments in other subjects. A pupil may thus be in a higher class in one subject than in another. According to the TWOFOLD CLASSIFICATION each pupil is classified twice, once on the basis of attainments in mathematical subjects, and once on his attainments in English subjects. A pupil may thus stand in a higher class in one group of subjects than in the other.

Although the Manifold and the Twofold methods of classification have the apparent

advantage of adapting the work in the various subjects to the exact condition of the pupil, the Single Classification affords, on the whole, the conditions most favourable to easy management and well-balanced mental development. It does not seem desirable that the common school should foster a one-sided education, by urging the pupil forward in those particular studies which he likes best, at any great sacrifice of important subjects, in which he takes less interest. Uniform progress in all the subjects of the course is to be sought after, and the pupil should, under ordinary circumstances, be classified in such a way as most effectively to secure this end. Exceptional circumstances, however, allow some deviation from this rule. For example, it might be advisable to allow a boy who had but a limited time to remain at school, to give his chief attention to those subjects which are likely to be of greatest practical use to him.

The Single Classification presents the least complicated organization. The pupils can be seated in groups according to their

class, which would be impracticable under either of the other methods. Under the Single Classification, the arrangements for desk work also are much more simple than under the other methods. As the pupils of any given class are equally advanced in all subjects, one set of exercises for desk work always meets the wants of the whole class. In so far as relates to the matter of seating and desk work, the Twofold Classification is less objectionable than the Manifold. Under this arrangement, the two groups of subjects which form the basis of classification may each have its own portion of the day, the desk work and recitation always corresponding in general character.

Pupils who form two classes in some subjects may, in other subjects, be combined into one class. Thus two grades in reading or arithmetic may be taken together in geography and history.

An ungraded school, made up of pupils from five to fifteen years of age, would probably require four or five classes in reading and arithmetic, two classes in

history, three classes in spelling, two classes in grammar—the work for the lower class consisting rather of language than formal grammar,—two classes in geography—the lower class being taught orally,—and two or three classes for object lessons and science lessons.

The Time-table.

198. Little need be said to show the importance of a careful arrangement of school work. The principle of the motto, "A time for everything, and everything in in its time," ought to be conspicuous in the work of every school-room. It involves the wisdom of the ages, and it cannot be ignored without confusion and loss, if not failure, in all kinds of business. And yet there are teachers who profess to look upon time-tables with something like contempt. They affect great regard for freedom, and are unwilling to be tied down to the routine imposed by such restrictions. By following a time-table they may have to close a lesson before a proper stopping-place has been reached.

In constructing a time-table, the teacher brings definitely before him all the work

that claims his attention; he has leisure to consider carefully the relative importance of the different portions of his work; and he is thus able to allot to each portion its proper share of the time at his disposal. Thus bringing his best thoughts to bear upon his work, he is able to form a well-adjusted and harmonious plan; then by following this plan in the school-room, he is guided by his deliberate judgment and not by any undue preferences or prejudices. At the close of a lesson, there is no waste of time in stopping to think what is the proper thing to do next; while the various lessons, studies, and recesses are so arranged as to supply the most favourable conditions for the progress of all the pupils in every branch of study. On the other hand, without a time-table, the teacher is liable to be carried away by a hobby, or he may pursue a favourite subject to the neglect of one in which he takes less interest. Moreover the time-table has a moral value in its tendency to develop habits of order and regularity; the pupil is, by its influence, trained to look at each

portion of time as having its own specific duty, with which nothing must interfere.

The following suggestions may afford inexperienced teachers some assistance in constructing time-tables:—

(1). The time-table should show how every class is employed while the school is in session, giving the general character of the desk-work as well as the recitation.

(2). Draw out a list of subjects to be taught in the school. These subjects can be determined by noting the requirements of the course of study for the various grades of pupils in the school.

(3). Note down the number of classes in each subject. Thus there may be five classes in reading, five in arithmetic, two in history, two in geography, etc.

(4). Determine the proper length of time to be allotted to each class in each subject. This may vary from ten to thirty minutes, according to the age of the pupils, the number in the class, and the character of the subject. For very young children, the lesson should not exceed ten or fifteen minutes in length; for those from eight

to ten years of age, it may be extended to twenty minutes; and for the older children in the common school, it cannot with advantage much exceed thirty minutes. Exercises which involve close concentration and severe mental strain should be correspondingly short.

(5). Decide as to the frequency of lessons for each class in the different subjects. Before this matter can be determined, it will be necessary to consider the importance of each subject as it relates to each class. A prescribed course of study, which definitely apportions the amount of work in the various subjects for each year, relieves the teacher, to a considerable extent, of this responsibility. For the younger pupils, however, reading should be regarded as very important, and it should be frequent, as every day, twice a day, or oftener, if practicable. Pupils between eight and twelve years of age need to spend a large proportion of time at arithmetic. For pupils under eight years of age, exercises in language may very properly be combined with reading

lessons and object lessons; for older pupils, they may form distinct lessons and have a place on the time-table. Formal grammar can scarcely claim much attention from children under ten years of age.

(6). The next step consists in equalizing the time required for all the work with the time at command. Having decided on the subjects to be taught, the number of classes in each subject, the length of lessons for each class, and the frequency of the lessons, find the total time required for all the lessons in the week. For convenience, this may be computed in minutes. Compare this time with the total working time in the week, found by reducing the hours of session to minutes and subtracting the time for recesses, roll-call, etc. If the two totals do not agree, and it is scarcely probable that they will, increase or diminish the number of classes in some subjects, as the case may require; or increase or diminish the frequency of certain lessons; or increase or diminish the length of lessons.

(7). It remains to arrange the lessons in proper succession. Take those subjects

which involve most severe mental effort early in the day, though perhaps not at the very beginning. Something light and attractive, at the first, will serve best to awaken interest. Arrange so as to bring different pupils in turn for recitation,—that is so that the same pupils shall not come up for two consecutive recitations, while others are left too long without the direct supervision of the teacher. The subjects also should vary at proper intervals, so as to afford suitable variety and give that relief which arises from the exercise of different mental faculties in succession. The lessons which come every day should be taken at the same hour each day; and, as far as practicable, those subjects which come less frequently should be taken at the same hour on the different days, and be made to alternate with each other. Thus geography and history may be taken at the same hour on alternate days.

In arranging for a subject like arithmetic, which, in one form or other, engages the attention of the whole school, and

which involves an intermingling of direct teaching and independent written work by the pupils, it may be found advantageous to assign a certain period for all the classes together, without any definite appropriation of time for each class. The teacher can then take each class in turn or otherwise, for a longer or shorter period, as circumstances may render advisable; and while he is discussing principles or examining the work of one class, the other classes are doing illustrative exercises. During the period assigned for the subject, the teacher may return to each class two or three times.

(8). Determine, in a general way, the desk-work for each class throughout the different periods in which the class is not directly engaged with the teacher. This is a matter which demands careful consideration. In this connection, it is necessary to decide as to what work the pupils are to do at home. While certain lessons may very properly be prepared during school hours, these lessons should not be such as have been assigned for home work.

The moral effect of such an arrangement would be injurious. The desk-work should, as a general thing, be related to some recitation, being either a preparation for a succeeding recitation, or arising out of a preceding one; and in the latter case it may involve a practical application of principles, a test of knowledge imparted, or a means of impressing what has been taught. Among the subjects most suitable for desk-work for the older pupils, are exercises in arithmetic, algebra, geometry, grammar, composition, drawing, and mapping. The younger pupils can copy their reading lessons, work at simple language exercises, count objects, do easy exercises in arithmetic, draw from copies placed on the board, or they may be provided with some simple kindergarten work.

The examination of the desk-work can either be attended to within the period for which it is assigned, or it can remain over until the class comes directly before the teacher, for similar work.

Subjoined are specimen time-tables which are designed as suggestions, rather than as

working plans to be adopted in any particular school. Every school has its own peculiar features, and the time-table which is suited to the conditions of one school may be very ill-adapted to meet the wants of another. Indeed, a time-table suited to a school at one period of the year, or the term, may need to be changed in various particulars to meet the changed conditions of another period.

In the accompanying time-tables, the first column shows the work in which the teacher is directly engaged at any particular period; the second column shows the time at which the exercise begins; the third column gives the length of the lesson; and the remaining columns indicate the employment of those pupils who are engaged at desk-work,—that is at some written exercise assigned for independent work. A blank in one of these columns shows that the class is for that period engaged with the teacher.

Movements and signals.

199. In addition to registration, classification, and distribution of time, school organization includes all preliminary ar-

TIME TABLE, GRADED SCHOOL.

PRIMARY DEPARTMENT—GRADE I.—FORTY PUPILS. THREE CLASSES.

(THIRD CLASS LOWEST.)

FORENOON.

RECITATION.	TIME.		DESK WORK.		
	Exercise begins.	Length in Minutes.	First Class.	Second Class.	Third Class.
Opening Exercise.	9 00a.m.	10	. . .	. . .	. . .
Singing.	9 10	5	. . .	. . .	. . .
3. Reading.	9 15	10	Copying reading lesson.	Copying reading lesson.	. . .
2. Reading.	9 25	15		. . .	Copying reading lesson.
1. Reading.	9 40	15	. . .	Copying words from board.	
1, 2, 3. Calisthenics.	9 55	5	. . .	. . .	. . .
3. Counting Objects, Adding, etc.	10 00	10	Arithmetic.	Arithmetic.	. . .
2. Arithmetic.	10 10	15		. . .	Arithmetic.
1, 2, 3. Recess.	10 25	15	. . .	. . .	. . .
1. Arithmetic.	10 40	15	. . .	Arithmetic.	Arithmetic.
2 and 3. Examination of Desk work.	10 55	10	Copying words from board.	. . .	. . .
3. Reading.	11 05	10		Copying words from board.	. . .
2. Reading.	11 15	15	Weaving splits, etc.	. . .	Weaving splits, etc.
3. Reading.	11 30	15	. . .	Weaving splits, etc.	
1, 2, 3. Examination of work. Dismiss.	11 45	15	. . .		

AFTERNOON.

Singing and Roll Call.	1 15 p.m.	5	. . .	. . .	. . .
			Writing on last		

2. Reading.	11 15	15	Weaving splits, etc.	. . .	Weaving splits, etc.
3. Reading.	11 30	15	. . .	Weaving splits, etc.	
1, 2, 3. Examination of work. Dismiss.	11 45	15	. . .	. . .	

AFTERNOON.

Singing and Roll Call.	1 15 p.m.	5	. . .	. . .	. . .
2 and 3. Object Lesson.	1 20	15	Writing on last object lesson.	. . .	. . .
1. Object Lesson.	1 35	15	. . .	Copying lesson from board.	Copying lesson from board.
1, 2, 3. Drawing and Writing on alternate days.	1 50	20	. . .	. . .	. . .
1, 2, 3. Recess.	2 10	10	. . .	. . .	. . .
3. Reading.	2 20	10	Copying reading lesson.	Copying reading lesson.	. . .
2. Reading.	2 30	15		. . .	Weaving splits, etc.
1. Reading or Language Lesson.	2 45	15	. . .	Working out multiplication table.	
1, 2, 3. Examination of work.	3 00	5	. . .	. . .	. . .
1, 2, 3. Singing, Dismiss.	3 05	5	. . .	. . .	. . .

TIME TABLE, UNGRADED SCHOOL.

FROM FORTY TO FIFTY PUPILS FROM FIVE TO FIFTEEN YEARS OF AGE.

FOUR CLASSES. (FIRST CLASS MOST ADVANCED.)

FORENOON.

RECITATION.	TIME.	DESK WORK.			
		First Class.	Second Class.	Third Class.	Fourth Class.
Opening Exercises.	9 to 9 10	. .	. . .	. . .	. . .
1. Geography and History alternately.	9 10 „ 9 30	. . .	Written exercise on Geog. or His.	Copying reading lesson.	Copying reading lesson.
2. Geography and History.	9 30 „ 9 45	Written exercise on Geog. or His.	. . .	Arithmetic.	
4. Reading.	9 45 „ 9 55	Arithmetic.	Arithmetic.		. . .
3. Reading.	9 55 „ 10 10			. . .	Drawing.
1, 2, 3. Spelling.	10 10 „ 10 30	. . .	. . .	. . .	Copying words.
Recess.	10 30 „ 10 40	. . .	. . .	. . .	. . .
1, 2, 3, 4. Arithmetic.	10 40 „ 11 25	. . .	. . .	. . .	. . .
2 and 3. Language Lesson.	11 25 „ 11 35	Exercise in Grammar or Composition.	. . .	. . .	Language Exercise.
4. Language Lesson.	11 35 „ 11 40		Language Exercise.	Language Exercise.	. . .
1. Grammar and Composition on alternate	11 40 „ 12	. . .			Language

AFTERNOON.

Singing and Roll Call.	1 to 1 5	. . .	. . .	. . .	. . .

Lesson.		Exercise in Grammar or Composition.			Exercise.
4. Language Lesson.	11 35 ,, 11 40		Language Exercise.	Language Exercise.	. . .
1. Grammar and Composition on alternate	11 40 ,, 12	. . .			Language

AFTERNOON.

Singing and Roll Call.	1 to 1 5	. . .	. . .	. . .	. . .
2 and 3. Oral Lesson.	1 5 ,, 1 20	Written exercise on Science.	. . .	. . .	Copying reading lesson.
1. Natural Science.	1 20 ,, 1 40	. . .	Written exercise on Oral Lesson.	Written exercise on Oral Lesson.	
4. Reading.	1 40 ,, 1 50	Science exercise continued.			. . .
1, 2, 3, 4. Writing or Drawing.	1 50 ,, 2 10	. . .	. . .	. . .	. . .
Recess.	2 10 ,, 2 20	. . .	. . .	. . .	. . .
1. Geom. and Algebra on alternate days.	2 20 ,, 2 40	. . .	Arithmetic.	Arithmetic.	Writing out Tables.
2. Reading.	2 40 ,, 2 55	Written exercise in Geom. or Algebra.	. . .		
3. Reading.	2 55 ,, 3 10		Arithmetic.	. . .	Drawing.
Examination of desk work and preparing lesson for next day.	3 10 ,, 3 40	. . .	. . .	. . .	. . .
Dismiss.	3 40				

TIME TABLE, GRADED SCHOOL—GRADE V.

FIFTY PUPILS ABOUT 10 YEARS OF AGE. TWO CLASSES.

FORENOON.

RECITATION.	TIME.	DESK WORK.	
		First Class.	Second Class.
Opening Exercises.	9 to 9 15	. . .	. . .
* 1 and 2. Spelling.	9 15 „ 9 35		
* Geography, M. T. & F. History, Tu. and Th.	9 35 „ 10 15		
Recess.	10 15 „ 10 30	. . .	. . .
* 1 and 2. Arithmetic.	10 30 „ 11 20		
* 1 and 2. Language and Grammar.	11 20 „ 12		
Dismiss.			

AFTERNOON.

Singing and Roll Call.	1 15 to 1 20		
1. Oral Lesson.	1 20 „ 1 40	Written exercise on preceding Oral L.	Written exercise on preceding Oral L.
2. Oral Lesson.	1 40 „ 2	Written exercise on preceding Oral L.	
1 & 2. Writing and Drawing on alternate days.	2 „ 2 20	. . .	. . .
Recess.	2 20 „ 2 30	. . .	. . .
1. Reading.	2 30 „ 2 50	. . .	Written exercise on Reading Lesson.
2. Reading.	2 50 „ 3 10	Written exercise on Reading Lesson.	. . .
Exam. of desk work and preparing work for next day.	3 10 „ 3 30		
Dismiss.	3 30		

* One class has written exercise while the other is engaged with the teacher. If considered desirable the time table can be extended, giving half the time to each class. The desk work can then be of the same kind as the recitation, either a review of the preceding lesson on the same subject or a preparation of the next lesson; or it may be on some other subject.

rangements and regulations required to secure order and decorum in the school-room. It is not advisable to lay down any long code of rules of conduct; but rather, by a skillful adjustment of things, to establish such conditions as are most favourable to good order. The arrangements should provide against disorder, unnecessary noise, and interference of one movement with another.

Pupils should be required to enter the room and to retire in an orderly, uniform manner. On coming to their places at the desk, they should remain standing, until the teacher, with a slight movement of the hand, gives the signal to sit.

Pupils coming in late should remain near the door, either standing or occupying a seat provided for the purpose, until directed by the teacher to take their places. No pupil should leave his seat, cross the floor, or ask a question, while another is reciting. All talking should be strictly prohibited when the pupils are retiring from the room. Nor should the teacher talk at such times. If a pupil

desires to speak to the teacher after the school is dismissed, he must keep his seat until the others have gone out.

Proper signals for movements are useful in securing prompt obedience. A single stroke of the bell may be used to call attention; a slight downward movement of the hand may be given as a signal to take seats; a slight upward movement may be used as a signal to rise. The numbers *one, two,* etc., may be used for taking books and slates, or placing them in the desk. Signal words should be spoken in a low decided tone, with falling inflection. A second signal should not be given, until the movement required by the first has been executed.

The cleaning of slates should be carefully provided for. Each pupil should have a sponge or suitable cloth. Pupils appointed for the purpose may pass from desk to desk, at certain times, as occasion may require, and dash a little water from a bottle upon each slate. To limit the flow of water, a perforated cork with a tube inserted should be fitted into the

bottle. For the older pupils a small bottle of water may be kept in the desk.

With the exception of very young children, it is not advisable to bring pupils from their desks to stand during recitation. If pupils stand between the teacher and the rest of the school, they obstruct the view of the teacher and give opportunity for misconduct; if pupils who are reciting are placed in the rear, they are too far removed from the teacher. Besides, children soon become weary, in standing, and assume a lounging attitude or become inattentive. If the members of a class are seated together, it is best that they remain at their desks for recitation, each one rising when called on to answer, and resuming his seat when he has finished.

Pupils should be trained from the first to have proper respect for the school-room. This feeling well established will exercise a restraining influence, promoting order and general obedience. The school-room should never be used as a play-room at recesses; boys should not be permitted to wear their caps in the room, to whistle,

shout, run, sit upon the desk, or do any rude thing. The decorum and propriety of the parlour will form a good general standard by which pupils can judge as to what is proper in matters not regulated by special, positive rule.

Each pupil should have his own hook or peg in the cloak-room, and supervision should be exercised to see that garments are in their proper place, and not thrown upon the floor.

CHAPTER XVII.

SCHOOL MANAGEMENT.

Nature and aims.

200. School management implies controlling and governing the school. It should have for its aim the maintenance of order and diligent application to work, the development of right habits, and the formation of character. The teacher who has no higher aim in the management of his school than the preservation of order and the awakening of intellectual activity, loses sight of the grand controlling purpose of education,—the guiding of the child into habits of "complete living;" he misses the grand end of education, which consists in the development of character. The school is a miniature world, and it should prepare the pupil to act well his part in the great world which he is soon to enter The possession of knowledge and intellectual acumen alone will not give this preparation; indeed, it may only endue one with

greater power for ill-doing. The discipline of the school should develop principles of honesty, truthfulness, and fidelity; it should train to habits of industry, order, economy, self-control, and self-reliance; and it should cultivate generosity, gentleness, courtesy, and regard for the rights and feelings of others. The teacher who aims exclusively at immediate intellectual results may work disaster and ruin. He may awaken, and bring into commanding prominence, the most unworthy motives, by which selfishness is made to over-rule every feeling of regard for others, and every sense of moral obligation. Especially in the present stage of the world's history, with its democratic governments, both in city and state, it becomes a matter of the first concern that every citizen be properly qualified for the responsible duties of citizenship, not alone as regards intellectual culture, but in the development of the sensibilities, the will, and the moral nature.

As in intellectual education the great object is to make the child an independent

investigator of truth—to place him in a position by which he can educate himself, so the end of moral training should be to make him self-regulative—to give him the ability to govern himself. The educator should not, therefore, train the child to lean upon a mentor as a guide in each individual action, but he should seek to develop the moral judgment, and such power of will as will lead to the execution of purpose.

Means of moral discipline.

201. An important question here presents itself for the consideration of every thoughtful and conscientious teacher,—What educational means shall the school employ to cultivate in the child fixed principles of moral truth, and to develop in him the power and habit of right conduct? In part, it should seek to accomplish its object by theoretic instruction, that there may be a rich and deep subsoil of knowledge, to nourish into full development the fruitage of moral life. And here the Bible should be taken as the standard of truth and criterion of conduct. Its teachings are never misleading, and they

come home to the conscience with Divine authority. The teachers of the public school should avoid speculation, and all discussion of denominational differences. It is best to select such passages of Scripture for school readings as bear directly on conduct, and such as suit the special circumstances of the day. All personal applications, however, should be avoided, each pupil being left to take to himself that truth which his own conscience leads him to appropriate.

But the moral teaching and influence of the school arise mainly out of the regular work of the school. Every subject and every lesson may be turned to practical account in the moral culture of the young. For example, the reading lessons should be so selected that while affording suitable exercise for practice in the art of reading, they are in themselves freighted with rich and high-toned moral sentiment, and are adapted to cultivate the taste and mould the habits of the child in regard to his future reading; and the events and incidents of history should be so presented as

to develop principles of honesty, honour, and patriotism.

The occurrences of the day in the school-room, and on the playground, also furnish occasions for effective moral lessons. Some act of dishonesty or of selfishness, as holding a text-book under the desk for reference during a recitation, copying the written exercises of another, or interfering with the rights of a fellow-pupil on the playground, may become the subject of a short talk between teacher and pupils. In this conversation the teacher may not name or very clearly indicate the pupil who has been in fault; but he pictures out the circumstances with more or less fullness, so that the offender is able to mark the resemblance of the representation to his own case, and to estimate more correctly the moral character of his conduct.

Indirect government.

202. It is not well to govern too much. A judicious school government aims to establish such conditions as naturally contribute to good order, and to regulate the conduct of the pupils by such arrangements as will reduce to a minimum all incentives

to ill-doing. Good organization and suitable employment will tend largely to diminish the occasions for direct government. The teacher who fails to supply his pupils with full employment is inviting disorder and misconduct, and he will not fail to realize the truth contained in the familiar line—

"Satan finds some mischief still for idle hands to do."

Industrious habits are a source of moral strength, and the pupil who is furnished with opportunities of enjoying the satisfaction of successful, honest work, will not be very difficult to manage. He realizes no unpleasant antagonism with his environment, and recognizes that every arrangement is aiding him in working out his own purposes and desires.

It is a mistake for a teacher to make great demonstration in governing his school. Undue display of authority is rather an evidence of conscious weakness; it indicates some misgiving as to the ability to enforce law and overcome opposition. A silent look is often more

effective than loud, threatening words. It is better to govern rather by inner moral force than by rigid, coercive measures.

Interest in work.

203. The power to govern a school easily depends very largely on the ability to awaken deep interest in work—to so preoccupy the thoughts with the various studies that there is neither opportunity nor inclination for mischief. This interest is secured only when the subject is presented in such a way as to appeal to the intelligence of the pupils, and when there is such frequent change of subject as will meet their natural desire for variety.

Avoid arousing the evil spirit.

204. Evil tendencies, like all activities of the mind, are developed by exercise and weakened by disuse. The more frequently any evil passion is aroused, the greater is its susceptibility to the influence of exciting causes, and the greater energy does it display when it is aroused; while, on the other hand, the longer a passion lies dormant the less easily is it awakened, and the weaker it becomes. It is enfeebled through lack of nourishment, and dies of

starvation. When an obstinate boy is frequently provoked to a state of active opposition, the evil spirit in him is nourished and strengthened, until his normal condition is one of antagonism, and he is always suspicious of some interference with his lawful rights and freedom. The sailor does not steer his vessel into the face of the wind; but by a skillful adjustment of rudder and sail he makes the opposing force subservient to his onward movement. In like manner the teacher needs wisdom and tact to set one motive over against another, that he may overcome evil tendencies by a well-adjusted combination of opposing forces. Deft management is better than compulsion. The teacher may lead a self-willed pupil where he cannot drive him.

The following remarks on the development and control of the feelings are worthy of careful study:—

"The same general laws which we have found to hold good in the case of the intellectual faculties apply also to the emotions. They are deepened and fixed

by exercise, or, as we commonly express it, by indulgence. . . . Just as every exercise of the powers of attention leaves the mind and the connected brain centres modified and more strongly disposed to that particular kind of activity, so every indulgence of a feeling tends to strengthen the corresponding disposition. . . . In the matter of the feelings, it is emphatically true that prevention is better than cure. Thus the teacher has to take care that children with a strong disposition to violent temper should not be exposed to circumstances likely to inflame their passion. An envious child ought not to be placed in a situation which is pretty certain to excite this feeling. An emotional susceptibility may to some extent be weakened 'and even starved out' through want of exercise."—*Sully's Teacher's Hand Book of Psychology* (New York, 1886), *p.* 289, *et. seq.*

The influence of the first day.

205. A good impression made on the pupils the first day counts for considerable in the future management of the school. The teacher who shows good common sense

at the outset, who is not too exacting, but is yet decided and firm in what he requires, who moves along in the organization of his school without embarrassment, keeping pupils employed at interesting work throughout the day, and sending them home at its close with the feeling that they have had a good day, and that the new teacher understands his business, has laid broad and deep foundation for a successful career in that school. He has inspired the pupils with confidence in his ability and in his good feeling towards them, which will lead them to look with favour on all his arrangements, and to yield ready compliance with his wishes. In this endeavour to make a good impression, the teacher must not seem to be working for that end. It is the highest art to conceal art. Let the aim be to do good work in the most skillful manner, and trust to the wise instincts of the pupils for the good impression.

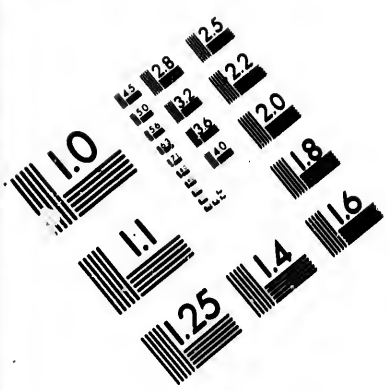
Vigilant oversight.

206. The teacher should never become so absorbed in the work of the class which is reciting as to neglect vigilant oversight

of the rest of the school. This is a fault to which beginners are especially liable. The teacher should take such position as will give him full view of the whole school, and while there should be no distrustful watching, his eye should so take in every pupil as to clearly discern the nature of his employment.

Cultivate self-respect in the pupils.

207. The cultivation of self-respect and sensitiveness to reproof on the part of the pupils is of the greatest importance both as an aid to school government and as a means of general moral development. All unnecessary exposure of faults, scolding, hard names, abusive epithets, sneers, and sarcasm should be avoided. They tend to blunt the finer sensibilities, arouse ill-feeling towards the teacher, and create permanent estrangement between him and the pupil. The teacher should be slow to believe that a pupil intends to do wrong. Charging a pupil with willful disobedience and malicious intent to disturb the good order of the school, is a plain declaration that he can no longer be trusted; and when a pupil finds that he has no reputation to



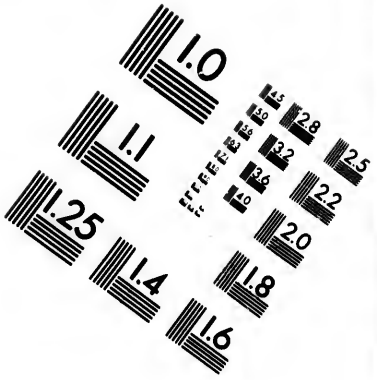
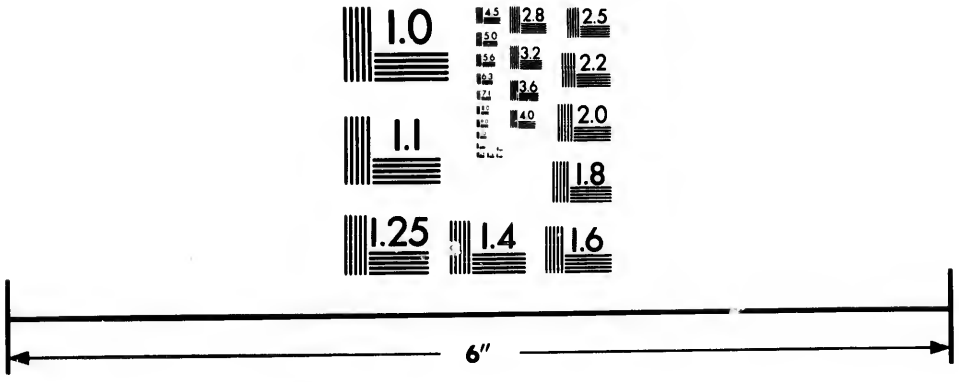
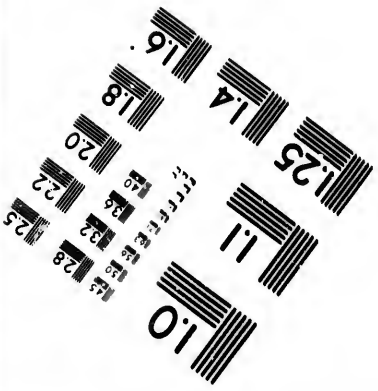
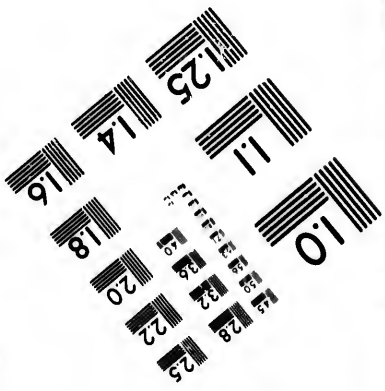


IMAGE EVALUATION
TEST TARGET (MT-3)







Photographic Sciences Corporation

23 WEST MAIN STREET
WEBSTER, N.Y. 14580
(716) 872-4503

2.5
2.2
2.0
1.8
1.1
1.0

sustain, he is very likely to give loose rein to his evil propensities.

A very successful method of correcting a tendency to wrong-doing consists in speaking against faults, rather than against the pupils who have committed the faults. The teacher may not seem to know, or care to know, who is the offender, but he directs the attention of the pupils to the character and tendency of the improper act, leading them to regard the act as an offence against good order and their own moral sentiment. In this way he avoids blunting the feelings, and cultivates a sensitiveness to reproof. Often the pupil who has furnished the occasion for this indirect reproof is among the foremost to condemn his own misconduct.

Public opinion of the School.

208. The sympathy of the school on the side of order and good conduct is a strong support to the teacher in the maintenance of discipline. The teacher should not, however, manifest any undue anxiety in this matter, or do anything that would create the impression that he is working for this object. The moral support of the

school is not to be striven after as an end in itself, but it should follow as the spontaneous expression of the moral sentiment of the school in respect to the wise and impartial administration of justice. However ready pupils may be to take advantage of weak government, their general sense of right and their appreciation of good order will lead them to commend a firm and impartial administration of discipline.

The teacher will find it difficult to maintain his ground in opposition to a prevailing feeling in the school; and, on the other hand, the disobedient pupil will find his position very uncomfortable, when he feels that his conduct is offensive to his fellow-pupils. The public opinion of the school often needs to be cultivated. Children are naturally inclined to support each other; and their moral sense is often weak or distorted through previous bad management. Their sympathy with law and order will not spring up in a night. The teacher must not wait until a case of disorderly conduct demands his interference, and then

canvass the school to support his discipline. His whole career must be such as to win respect and confidence, so that all his acts will have in the character behind them an added power in drawing the pupils to his support.

Supervision at recess.

209. The teacher should be with the pupils on the play-ground at recess. He needs the change and the fresh air as much as the pupils do. At no other time do the children so much need wise oversight and direction, and at no other time has the teacher such opportunity of studying the various characters that make up his school, of drawing the children around him in loving sympathy and confidence, and of moulding their characters. Parents who are careful of the moral influences to which they allow their children to be exposed, very properly fear the contaminating effects of the improper words and actions which are met with in the promiscuous associations of the public school. It is on the play-ground that these influences are most to be feared and to be guarded against. The teacher should not allow his presence

on the play-ground to be felt as a restraint on the freedom of the pupils, but should seek to guide them in their amusements and increase their happiness by excluding selfishness and vice. As in the school-room he aims to shut out mischief by preoccupying the attention with interesting work, so on the play-ground he leads their thoughts away from evil by innocent and joyous sport. Especially should the teacher be moving amongst the pupils during a recess which follows a case of discipline, by which their feelings may have been disturbed, and some morbid tendency has been aroused to sympathize with the one who has been punished. He should not allow them to cultivate these feelings by discussing the case on the play-ground; but should rather cause them to forget it amid the enthusiasm with which he leads them to join in exhilarating games.

The fidelity of the teacher.

210. The personality of the teacher is an important element in the government of the school. What he is, gives tone and emphasis to what he does; his character lends weight and influence to his words

and actions. The pupils' estimate of the teacher's character is a growth, or it is built up by the accretion of many small matters. It is the cumulative effect upon their minds of what they have heard him say and seen him do throughout their intercourse with him. Hence the teacher should exhibit the highest integrity and fidelity to every duty, accounting the claims of his school paramount to every other consideration or interest. But to secure its due effect, this outward manifestation must be the honest expression of the inner feeling. And it has been well said that "the teacher whose soul is in his work makes his character and life felt in in the daily life of his pupils; and the thrill of his character and purpose vibrates in the actions, words, and thoughts of his pupils."

Among the faults which the teacher should carefully avoid is lack of punctuality. Not only will the pupils be ready to imitate the example of the teacher in this matter, but they will be led to distrust his general fidelity and his interest in his

work. Indeed, this fault is a pretty certain indication of character wanting in elements which are essential to success. It is generally associated with lack of energy, loose business habits, and neglect of due preparation for work. Except for the most urgent reason, the teacher should not take a holiday in the middle of the week, thinking to make compensation on Saturday. Such a holiday will tend to break up habits of regularity, many of the pupils will fail to return on the succeeding day, and those who are present will often show the effects of the holiday in badly prepared lessons. Then Saturday seldom makes full compensation for the day lost. It being a recognized holiday, many of the pupils, from force of habit or through some domestic arrangement, will not be present on that day.

It is important that the teacher fully recognize the weight of responsibility which he has incurred in assuming the office of an educator of the young. This will tend to critical self-examination and careful guarding of conduct and habits,

that everything may be avoided which would mar the success of school-work. In addition to such ordinary obligations to self-denial and restraint as every one is called on to exercise, the teacher has the added obligations of his position and office to sacrifice personal freedom, if he can thereby increase his power and influence in the school-room. These obligations impose on him, in an especial manner, the duty of guarding the condition of his nervous system and his general bodily health, that he may avoid everything that would tend to make him irritable and to weaken the power of self-control.

Cultivate politeness.

211. Politeness should be cultivated in the school-room and on the play-ground as an important element in a well-rounded education. The effect of an action often depends as much on the manner of the doing as on the thing done. Grace of manner smooths off many little asperities which tend to obstruct the intercourse of social and business life. It invests the bestowal of a favour with an additional charm, and takes away half the unpleasantness of

denial. The culture of gentle manners in the school-room will tend to banish the ruder features of disorder, and make the pupils amenable to the milder forms of government. When pupils are trained to have proper regard for the feelings of others; when they do not laugh at the mistakes of their fellow-pupils, nor ridicule any peculiarity in their speech, manner, or dress; when they receive visitors with politeness; when they ask for favours and acknowledge the receipt of them in a proper manner, apologize for accidents by which others may have been disturbed or incommoded, and are ever ready to offer their aid to those who are in difficulty: the teacher will have little occasion to resort to severe measures of discipline. The exchange of a pleasant morning salutation between teacher and pupils, and a cordial friendly greeting as they pass each other on the street, will draw them nearer to each other as members of a happy family, united by the bonds of mutual respect and confidence.

The school premises.

212. The condition of the school-house, furniture, grounds, and outhouses, may be regarded as a fair expression of the average culture of the community, of the energy and good taste of the teacher, and of the moral condition of the pupils. It is the duty of the people to furnish school premises in keeping with the important interests represented, and this involves much more than the furnishing of such accommodations as will supply conditions essential to health and comfort. The building, furniture, and grounds should be fitted up with proper regard to good taste, and to their influence on the culture and refinement of the pupils. Even if the people are apathetic and show no interest in improving the school premises, a little energy and enterprise on the part of the teacher will accomplish wonders. If he is thoroughly in earnest in the matter, he can easily awaken the interest of the pupils, and through their aid he can have the grounds put in order and planted with trees and shrubbery, the fences repaired, and the walls of the school-room orna-

mented with tasteful, inexpensive pictures. One improvement will lead to another; the interest will become contagious; the children will communicate it to the parents, until the whole community is pervaded with one sentiment.

Every improvement in the school premises adds a new moral force to the school discipline. There is always a close connection between the physical and the moral. The boy who is uncleanly in person and dress is generally lacking in respect for himself and others, as well as in his regard for law and order. The bad air of an unventilated and dusty room makes both teacher and pupils irritable, and leads to continued harshness from the one quarter and resistance from the other, until there no longer seem to be any common interests or bonds of harmony.

Every influence that promotes culture and refinement is an aid to discipline. The inner feeling is brought into sympathy with the tasteful surroundings, and the moral adjusts itself in harmony with the physical. The atmosphere of culture is

uncongenial to the coarser forms of vice and disobedience.

It should not be necessary to refer to the teacher's duty in the matter of keeping the school premises wholly free from those shameful scribblings and markings which too frequently disgrace school premises and make them a means of mental defilement and moral degradation. The teacher should make a daily inspection of the school premises and see that the beginnings of evil are carefully removed.

The support of the community.

213. The teacher should endeavour to awaken an interest in the school throughout the section. He should try to win a recognition from every one in the community, that the school is exercising a beneficent influence, that it is an institution which lies at the foundation of the public welfare, and that any disturbance of its harmony or interference with its efficiency should be regarded with disapproval. Such sympathy and moral support of the general public will greatly encourage the teacher, enable him to do better work, and aid him in the govern-

ment of his little kingdom. Among the most effective means for the development of public sentiment in behalf of the school are the thorough self-devotion, earnestness, fidelity, and enthusiasm of the teacher in his work.

CHAPTER XVIII.

SCHOOL PUNISHMENTS.

Impartiality and discrimination.

214. Every possible endeavour to guard from temptation, to remove occasions of evil-doing, and to fill up the time with useful employment will not wholly obviate the necessity of punishment. The teacher should, however, be fully convinced that the necessity has arisen, before he resorts to any severe measures. He should be impartial and self-consistent in his government, dealing with all pupils in the same uniform manner, and maintaining the same even-handed justice on all occasions. He should not punish on one day for a fault which he ignores or passes by lightly on another; at the same time he should discriminate carefully between cases which, though apparently alike, are essentially different. The circumstances connected with a fault should be considered, and all modifying conditions should be allowed

their due weight. The first offence of a pupil, uniformly well behaved, ought, in all fairness, to be dealt with very differently from the same offence oft-repeated by one with whom reproof and expostulation have proved of no avail. An unintentional fault, or the lapse of a pupil who is striving to do right, does not demand the same punishment as a similar fault resulting from willful purpose. The pupil who fails in his lesson, on account of circumstances over which he had no control, should not be treated in the same manner as one who fails through negligence or inattention.

Pupils should know why they are punished. It is advisable to point out to a pupil not only the act which has been the occasion of his punishment, but also any circumstances connected with it, which extenuate the fault or make it more aggravated. Such explanation enables the teacher, without the appearance of partiality, to deal more justly and judiciously with different pupils who have done the same things, but with unequal culpability.

Aims in punishment.

215. The teacher should aim at such discipline in his school as would be exercised by a kind and judicious parent over his children. He must not punish simply as a means of balancing the scales of justice, or with the aim of inflicting a certain amount of pain as a sort of equivalent for violation of law. Punishment in the school, as in the family, should be remedial and reformatory, rather than retributive. Its design should be, not to pay off the transgressor, but to correct and restore him to the right way.

By thus keeping in view the end to be attained, the teacher will be led to study the peculiar disposition of each pupil, and to mark the effects of the discipline to which he subjects him. The skillful physician aims to cure disease with the least possible amount of suffering and inconvenience. With this end in view, he studies his patient's constitution, and carefully observes the effect of his medicines and regimen. If he observes good results, he pursues his treatment; but if otherwise, he changes it for something else. The

wise teacher may here learn a useful lesson in discipline. He will learn to use the mildest measures which will bring about the desired results; and so long as he observes gradual improvement, he will be satisfied. He will have recourse to severe treatment only as a last resort. In no case will he persist in severe measures, when he finds that, instead of making improvement, the pupil is rather becoming worse.

Severe punishments not judicious.

216. The tendency of the present age is not in favour of the rigorous forms of punishment which characterized the sterner ages of the past. This is noticeable in the discipline of the school and the family, as well as in the judicial punishments inflicted by the State. And yet it cannot be shown that there is more misconduct in the school, more disobedience to parents, or more crime, in the present age, than in the olden time when a man was hanged for stealing a shilling. "The certainty of punishment is more effective than its severity." It is exceedingly questionable, considering the temper of the moral sentiment of the age, if very severe punish-

ments should ever be resorted to in the public school. Its moral effect upon the well disposed portion of the school is almost always injurious. In large cities the incorrigible are provided for in the reform school, or some similar institution; and it would seem that extreme cases in the village or country school should be handed over to the parent.

Reproof.

217. Reproof may be considered as the first measure to be used in dealing with a fault, and, when properly given, it is one of the most effective means of correction. Reference has already been made in the preceding chapter to that method of correction which consists in dealing with the offence rather than with the offender. No name is mentioned; indeed, the teacher may not know who has done the wrong act. He brings the fault to the notice of the school, asks for no information in regard to its author, but endeavours to show its character and tendency, and to lead all to join in its condemnation. Baldwin, referring to this mode of correction under the head of *general reproof,*

speaks of it as "the mildest and most effective of all school punishments." The writer has frequently tested its efficacy with the best of results. Pupils have, on many occasions, come privately, acknowledging themselves as the offenders. After friendly conversation on the matter, and promise of amendment from the pupil, teacher and pupil have parted with better understanding of each other, and better feeling toward each other, than ever before.

This general mode of dealing with a fault having proved unavailing, private reproof naturally follows as the next step. Without allowing others to know the reason, the teacher may detain a pupil after the school is dismissed, and in a quiet, earnest manner point out to him the nature of his conduct, with the results to which it must naturally give rise. It is not advisable, however, to treat the pupil as if he were wholly bad and unworthy of further confidence; but rather, while showing him his fault, the teacher should encourage him to amendment by commending his good qualities.

This interview should, as far as possible, take the form of a conversation, in which the pupil is led to speak freely and to give any explanation, or state extenuating circumstances which he may have to offer.

When private interviews have failed to produce the desired results, the pupil may very properly be reprimanded before the whole school. The effect of such reprimand will depend very much upon its infrequency. Like all other punishments, reproof loses its power as it becomes common. Discretion in the use of sharp words is as important as in the use of the rod. When one begins to say severe things, he is apt to say more than he intended at first, especially if he observes no sign of wincing on the part of the pupil. In giving reproof the teacher should prudently refrain from using more words or stronger words than the occasion requires. He should be particularly careful to keep his voice under control, speaking in low tone and with deliberation.

Depriving of privileges.

218. Depriving of privileges will in many cases work desired reform. If two

pupils who sit together persist in talking, separate them until they show disposition for amendment. If a boy is rude on the play-ground, or shows a disposition to interfere with the rights of others, exclude him temporarily from associating with the other pupils, by confining him to a certain part of the grounds. A pupil should not be deprived of recess, either as a punishment for misconduct, or for the purpose of preparing neglected lessons. The recess is needed by every pupil as a means of recreation, and a source of renewed energy for subsequent work. The teacher who deprives a pupil of his recess is himself responsible for that pupil's misconduct or idleness for the remainder of the session.

Corporal punishment.

219. This term properly applies to any kind of punishment which gives bodily pain or discomfort; its common application, however, is restricted to flogging. During the past two or three decades there has been an increasing tendency to criticise the use of the rod in the public school, and some educationists doubt its expediency, if not the right of the teacher

to resort to this mode of punishment. A careful study of its effects would probably show that in the majority of cases in which it is used, it has not proved a means of correction. Still further doubt is thrown upon the value of this means of school discipline, by the fairly well sustained induction that the most orderly and the best governed schools are those in which there is little or no flogging.

These facts, however, if established, are not conclusive evidence against the propriety of this mode of punishment in certain cases. The moral condition of the pupils is an important element to be considered in deciding on the proper mode of discipline. Some teachers also may not possess that skill in governing which enables them to combine strength of administration with mildness of manner. In the ideal school there is no flogging; but, perhaps, for most teachers this is a standard for gradual approach, rather than one which can ever be fully reached. It seems at least worth the trying, to seek the reformation of the persistently disobedient

pupil through this means, before dismissing him from the school as an incorrigible and hopeless delinquent.

220. The rod should be a last remedy, to be resorted to after other measures have failed. It is a ready means of disposing of a case, and hence, where it is used, there is a tendency to adopt it when milder measures, though perhaps involving more trouble, would be equally if not more effective. Precautions are wise. The teacher who resorts to this form of punishment should keep a suitable rod or strap, lest, in an extremity, he use some unreasonable instrument. He should by no means carry the rod about in his hand, as if he were seeking an occasion to exercise his prerogative. Nor should he keep it in a place too accessible, but laid away in the bottom of the most remote drawer. *The rod a last remedy.*

The teacher should flog only after due deliberation and full explanation of the offence to the pupil. In no case should it be "a word and a blow, with the blow first." Even the appearance of anger and

excitement should be avoided. Hence it is advisable to allow a short time to intervene between the expressed decision to punish and the infliction of the punishment.

As a general rule it is better, all things considered, to administer corporal punishment in private, rather than in the presence of the school. Such punishment in public is not salutary either to the one on whom it is inflicted or to the spectators. The boy who is being punished in the presence of his companions is more likely to show a spirit of bravado and resistance, and the affair assumes the appearance of a struggle between pupil and teacher. Such a spectacle is very unseemly, and it introduces an association which must seriously mar that memory picture of the school-room which every teacher must desire to have his pupils cherish.

Record of punishments.

221. The teacher should record every case of corporal punishment in a book kept for this purpose. He should enter the offence with all details as to its nature, the frequency of its repetition, means pre-

viously used, the extent of the punishment, and the observed effects. Such a course would invest the whole matter with an importance in the estimate of the teacher, which he would not otherwise be likely to attach to it, and lead him to exercise greater caution in choosing methods of discipline.

Expulsion.

222. The power of expulsion rests with the trustees or school committee. It is a step which should not be taken without the fullest consideration. Its influence upon the pupil, the school, and society should be carefully and conscientiously weighed. The boy who is thus cut off from school privileges is set loose in the community with all his ignorance and vicious propensities. His removal from the school does not deprive him of the power of doing it great harm, and he may set himself with greater determination to stir up mischief in the minds of those pupils whom he can influence.

When every means of improvement is exhausted, and it is decided to remove a pupil from the school, the step should be

taken as privately as possible. Let the parents be notified that he must be kept home, until he is willing to conform to the rules of the school. The removal then assumes the form of suspension rather than absolute expulsion.