Manual Training Department

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The Manual Training Department offers two courses, one in woodwork and the other in illustrated construction.

In the course in woodwork the object will be to present conditions for obtaining the greatest amount of skill possible in a given time, and to consider the aims and principles of Manual Training.

For the acquisition of skill the course of models illustrated herewith has been planned, with the purpose of presenting a series of exercises involving the use of all the common woodworking tools. It is so arranged as to present new problems of construction with each model. The attempt has also been made to make a progression of difficulties which shall keep pace with the increasing power of the worker.

This series of models is not intended to be a Manual Training course for children, but definite suggestions for work adapted to both the primary and grammar grades will be given. Particular emphasis will be placed upon the relation Manual Training bears to other school work.

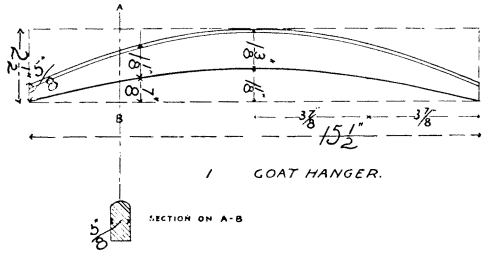
In considering the principles underlying the work, the endeavor will be made to present the history of the development of Manual Training and of its value in general education.

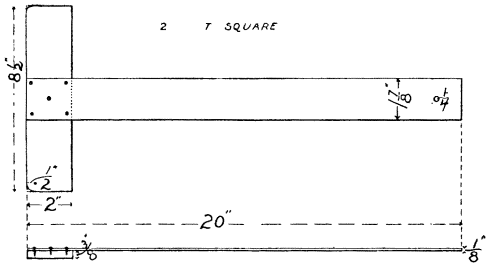
The history of the Manual Training movement is one of growth from the purely industrial and technical ideal to the educational. The power of concentrating all the energy upon the attainment of the desired end; the training in right habits, through orderly, careful, and systematic work; the power of definite, accurate reasoning; the cultivation of the artistic sense; and a degree of motor training which shall make of the hand an adequate instrument of expression for all ideas susceptible of manual expression—these are a few of the ideals which Manual Training endeavors to realize.

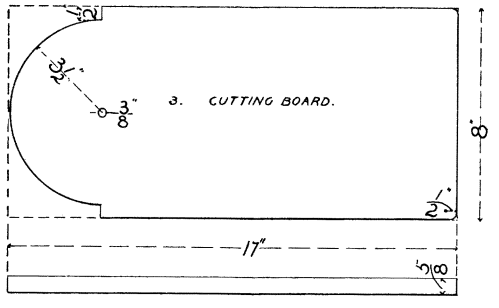
The objects of the course in constructive work are to consider the aims and value of handwork which can be carried on in the ordinary schoolroom; to determine the kinds of handwork best adapted to the various grades, taking into consideration the limitations of the schoolroom; to show how constructive work may illustrate and enhance the other subjects of study. This work is particularly valuable in connection with those studies which go to show the development of the people through their industries. In this endeavor the more simple industrial processes which touch intimately the child's own life should be taken as a point of departure.

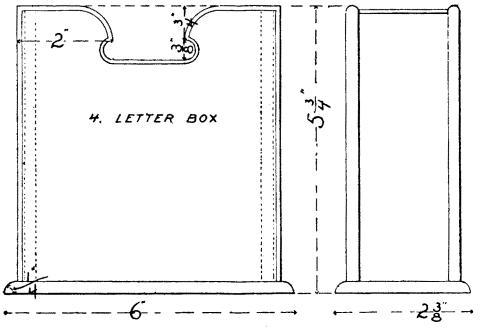
The processes of primary importance are those relating to the problems of food, clothing, and shelter. The attempt will be made to show how constructive work may be used to illustrate the way in which these problems have been solved and how the solution has been influenced by the climate, geographical nature, and resources of the particular region.

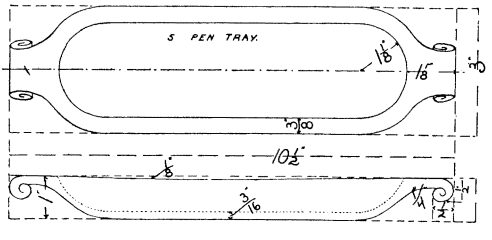
Another field in which constructive illustration may be made especially valuable is in the study of the public works of cities. The plan which will be followed in this work will be the laying out of an ideal city with reference to the location of parks, the disposition of the railroad systems, the problems of street transportation, the kind of pavements adapted to

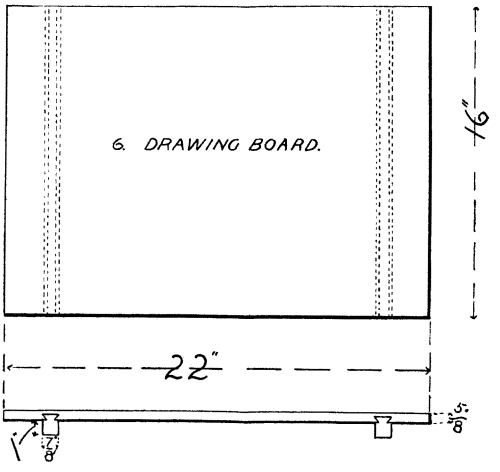

A
B
15 1/2"
1 COAT HANGER.
SECTION ON A-B

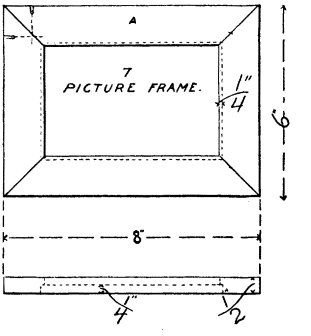

2 T SQUARE
20"

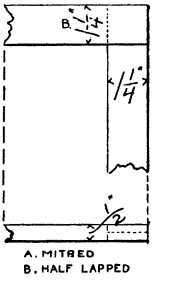

3. CUTTING BOARD.
17"

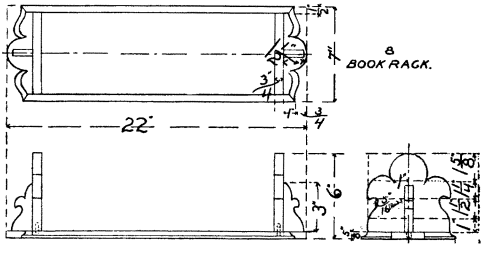

4. LETTER BOX
6"
2 3/8"

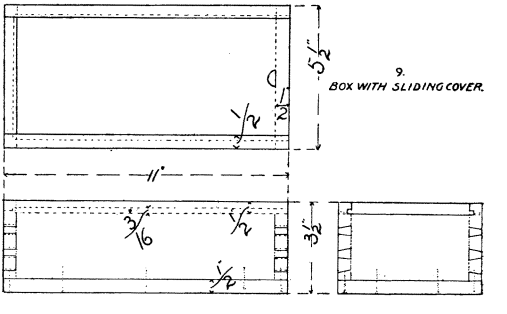

5 PEN TRAY.
10 1/2"

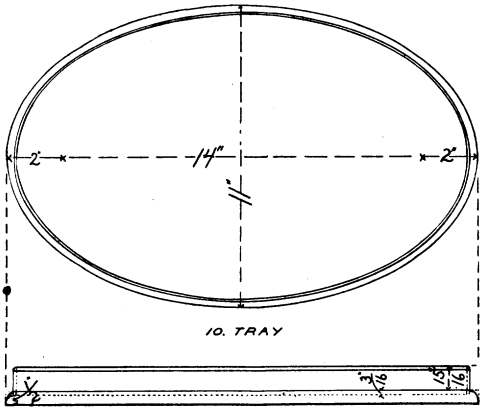

6. DRAWING BOARD.
16"
22"

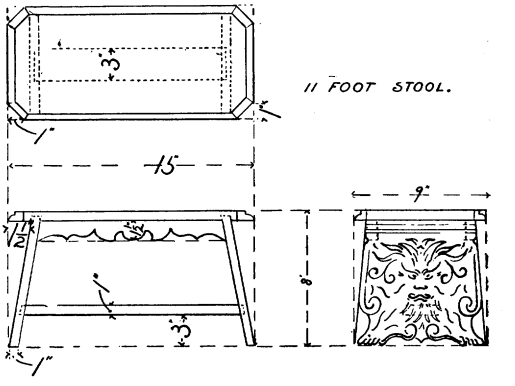

7
PICTURE FRAME.
8"


A. MITRED
B. HALF LAPPED

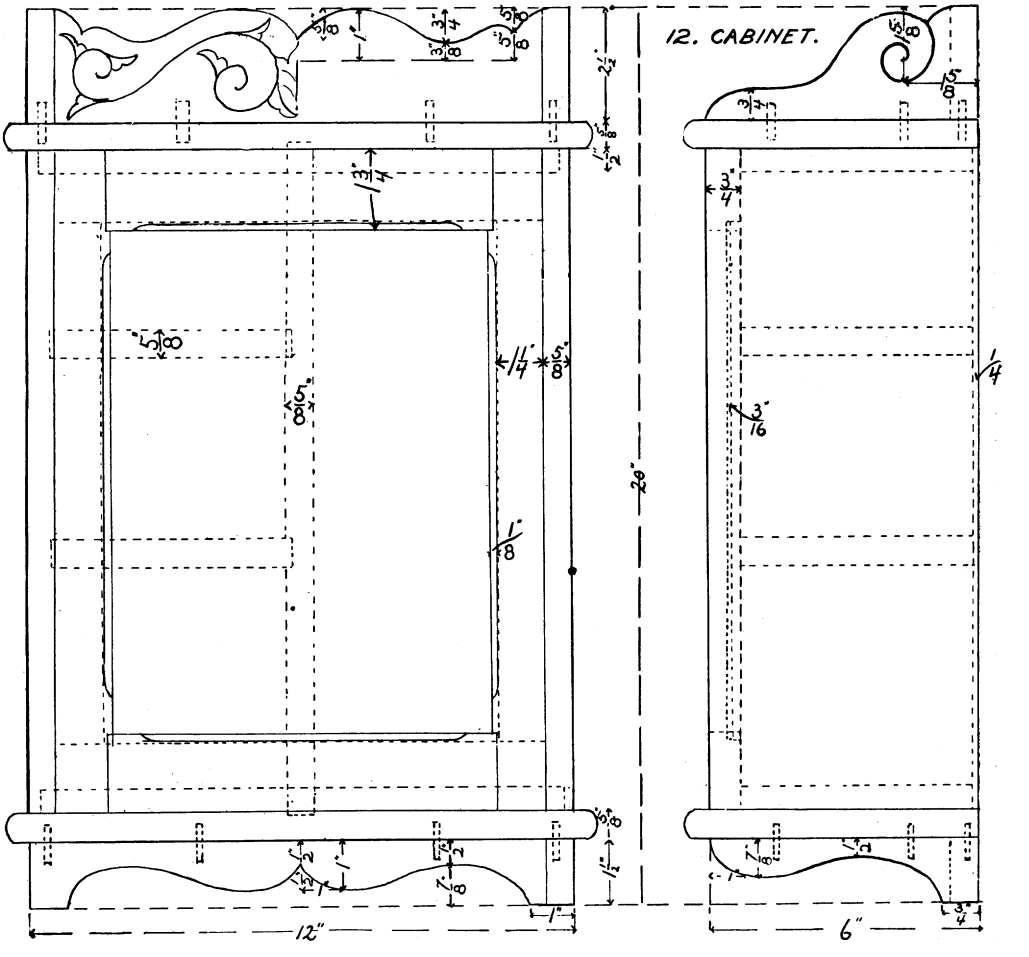

8
BOOK RACK.
22"


9.
BOX WITH SLIDING COVER.
11"


2"
14"
2"
11"
10. TRAY
3/16
1/16


3"
11 FOOT STOOL.
1"
15"
9"
1/2"
8"
1"
3"
1"

12. CABINET.


12. CABINET.
5/8"
1"
3"
3/4
3"
5/8
5/8"
2 1/2"
1"
5/8"
1 3/4"
5/8"
1 1/4"
5/8"
5/8"
1"
1/8
20"
5/8"
1 1/2"
1/2"
1"
1/2"
7/8"
1"
12"
1/4
3/16
7/8"
1/2"
3/4"
6"

various sorts of traffic, the water supply and drainage, and the methods of building construction as affected by the character of the soil, and the value of land space.

Under the course in constructive handwork are included book binding and making in paper and cardboard.

In the making to be done by the Summer School class, work which is similar in character is grouped together, not with the idea of laying down a course, but for convenience and economy of time in handling materials.

The Syllabus of the Course in Woodwork

I. The History of the Manual Training Movement.

1. The development from the technical and industrial to the educational ideas.

II. The aims of Manual Training as a Factor in General Education.

1. Development of motor ability. (a) The power of accurate co-ordination in terms of mental development. (b) The importance of the hand as an organ of the mind.

2. Effect upon the character of the child. (a) The growth of will power through voluntary activity. (b) Self-reliance, springing from consciousness of ability to do. (c) Concentration, attention, honesty of effort demanded.

3. The necessity for clearness and accuracy when the thought is to be expressed by doing.

4. Reasoning and judgment necessary in selecting and adapting means to end.

5. Opportunity given by Manual Training for the child to direct his efforts towards concrete ends which intimately concern his own life.

6. Training of the artistic sense. (a) Appreciation of form, symmetry, proportion. (b) Adaptation of design to function. (c) The principles of Manual Training.

The Course in Construction Work.

The fundamental basis of the work is found in the deep-seated instinct for creative effort inherent in the nature of every child. Recognizing the force of this instinct, Manual Training seeks to direct the energies of the child along right lines by affording him opportunity to put his creative effort into the doing of things which he feels to be of value and truly worth while.

The problem which will be given special prominence in this course of study is how to make the work a more organic part, both of the child's school and home life. To accomplish this means to give opportunity for constructive expression (wherever it is the most adequate form of expression), in the form most suited to the age and experience of the child; to give scope to his inventive and constructive faculties in the making of apparatus for use in other lines of work; to give him the opportunity of helping to beautify his school surroundings; to respect his initiative in regard to what he shall make for his home.

A second problem of importance will be that of arranging the exercises in woodwork so that an orderly progression of resistances shall be offered, demanding sustained directed effort, and leading to a conscious increase of power on the part of the worker.

1. Effort to find a working basis in Manual Training. (a) Course of technical exercises. (b) Course of useful models. (c) Illustration of these courses by various systems of Manual Training.

2. The real needs of the child, either in school or home, and the inter-relation of handwork and other school occupations as a basis. (a) The problem of so arranging work, upon this basis, that increasing motor ability shall result. (b) Extent to which the child's initiative shall be followed in selecting things to be made.

3. The proper time in the child's life for most effective hand training. (a) Period of greatest growth of motor centers.

4. The kinds of movements which make for best motor training.

5. Degree of skill and accuracy which should be demanded. (a) Basis for criticism of work.

I. The Use of Numbers and Geometry in Manual Training.

1. Demand for the use of the fundamental operations in number at every step in construction.

2. The ability to estimate magnitudes through constant measuring.

3. The demand for simple geometrical constructions.

II. The Use of Drawing in Manual Training.

1. Freehand sketches.

2. The theory and practice of orthographic projection, and its application to working drawings.

3. Isometric projection. (a) Principles of making isometric projections. (b) Where they are most advantageously used.

III. Study of Construction and Designing in Woodwork.

1. The limitations resulting from structure.

2. The methods of construction best adapted to various purposes.

3. Beauty due largely to correct proportion and construction.

4. Simplicity of design demanded by the material.

5. Kinds of wood best suited to various purposes.

IV. Ornament in Manual Training.

1. Use of ornament. (a) To emphasize the function of the object. (b) Over-decoration and meaningless decoration to be avoided.

2. Practice in decorative designing, in wood carving, and pyrography.

Syllabus of Course in Constructive Work

I. The Aim and Value of the Work.

1. Its appeal to the creative instinct of the children.

2. Value in relation to other studies. (a) Strength of images gained through contact and struggle with material. (b) The advantages, and limitations as a mode of expression. (c) The kinds of images best expressed by its means. (d) Age of children for whom handwork is most valuable as a mode of expression. (e) How the child uses number and simple geometry in construction as a means of reaching a desired end.

3. Training in attention, concentration, and in correct habits of work.

II. The Constructive Work done by the class will be along the following lines:

1. Cardboard and paper construction. This will include the making of various articles suitable for use in the schoolroom, such as boxes for different purposes, covers for written work, portfolios, books, bookbinding and repairing.

2. Constructive work illustrating the development of the simpler forms of industries. (a) The development of peoples as shown by their advance in the industries. (b) The industries which directly concern the production and preparation of foods.

1. Hunting implements.
2. Agricultural implements.
3. Implements for preparing grains for use.
4. Development of the art of pottery. The potter's wheel.

III. Industries Connected with the Making of Clothing.

Woven fabrics—the utilization of plant fibers and wool.

The inventions of the distaff, spinning wheel, loom.

IV. Habitations.

Starting point, the construction and arrangement of the children's own houses.

1. *Primitive houses.*

Their character determined by the climate and the resources of the region and by the occupations and character of the builders.

The cummunity houses of the Mandan, Iroquois and Pueblo Indians—Wigwams. Lake-dwellers' houses. Eskimo huts. The log houses of the early American settlers.

2. *Architecture.*

Characteristics of different types. Modes of travel and transportation by land and water.

V. Constructive Study of the Children's Surroundings.

The laying out of an ideal city; location of residence districts, manufactories, business centers, parks, boulevards; study of different forms of pavements, the adaptation of the different kinds to the amount and weight of traffic over them—their cleanliness, cost, durability; disposition of railway tracks and stations; bridges—their construction; water supply drainage, fire protection.