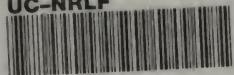
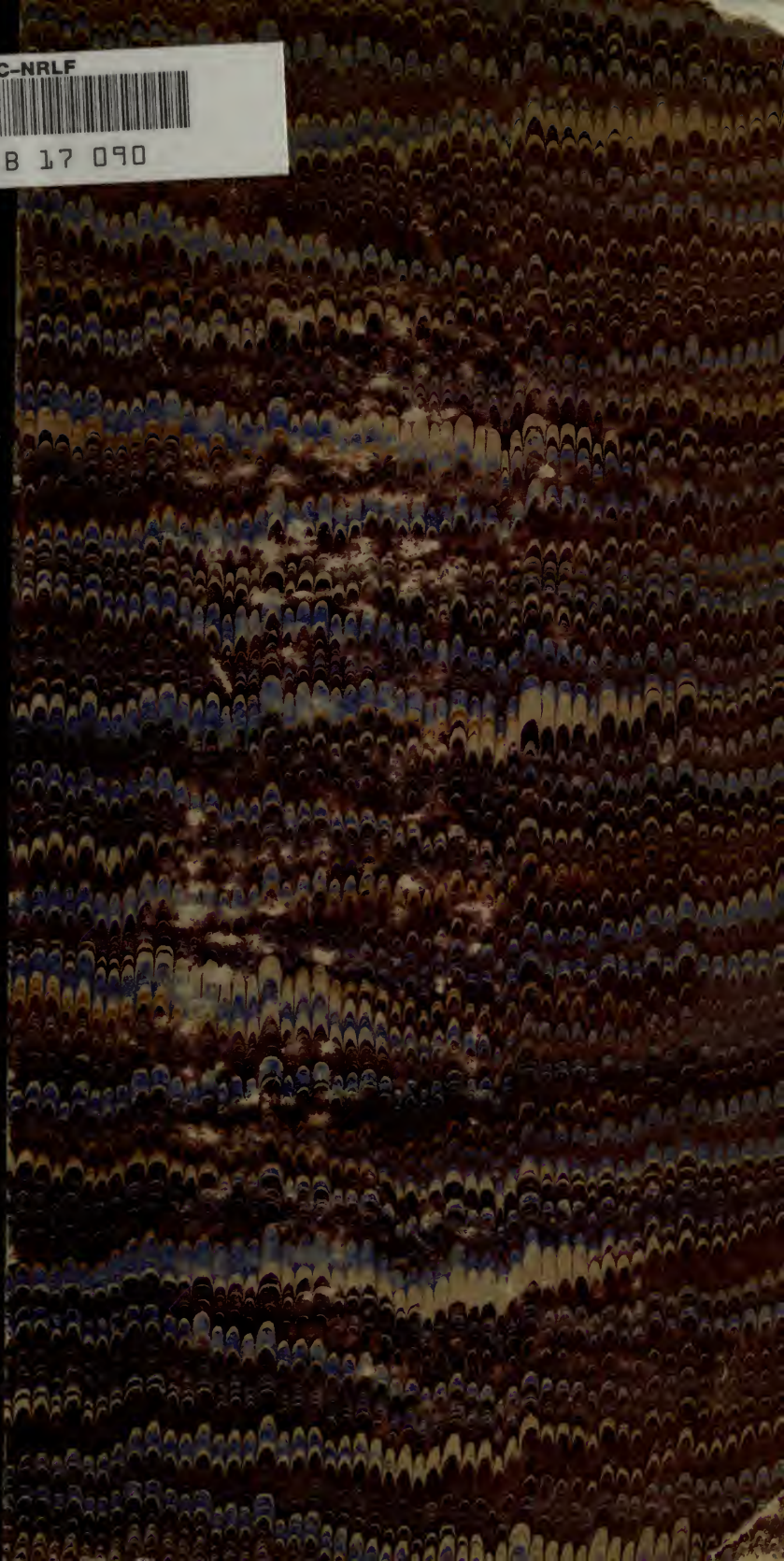


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THE  
COURSE OF INSTRUCTION  
IN  
MODELING

FOR THE  
PRIMARY AND SECONDARY SCHOOLS OF  
PHILADELPHIA

PREPARED BY  
EDWARD BROOKS  
*Superintendent of Public Schools, Philadelphia, Pa.*



PHILADELPHIA:

BURK & MCFETRIDGE, PRINTERS, 306-308 CHESTNUT ST.

1892





Philadelphia Board of  
public education

THE  
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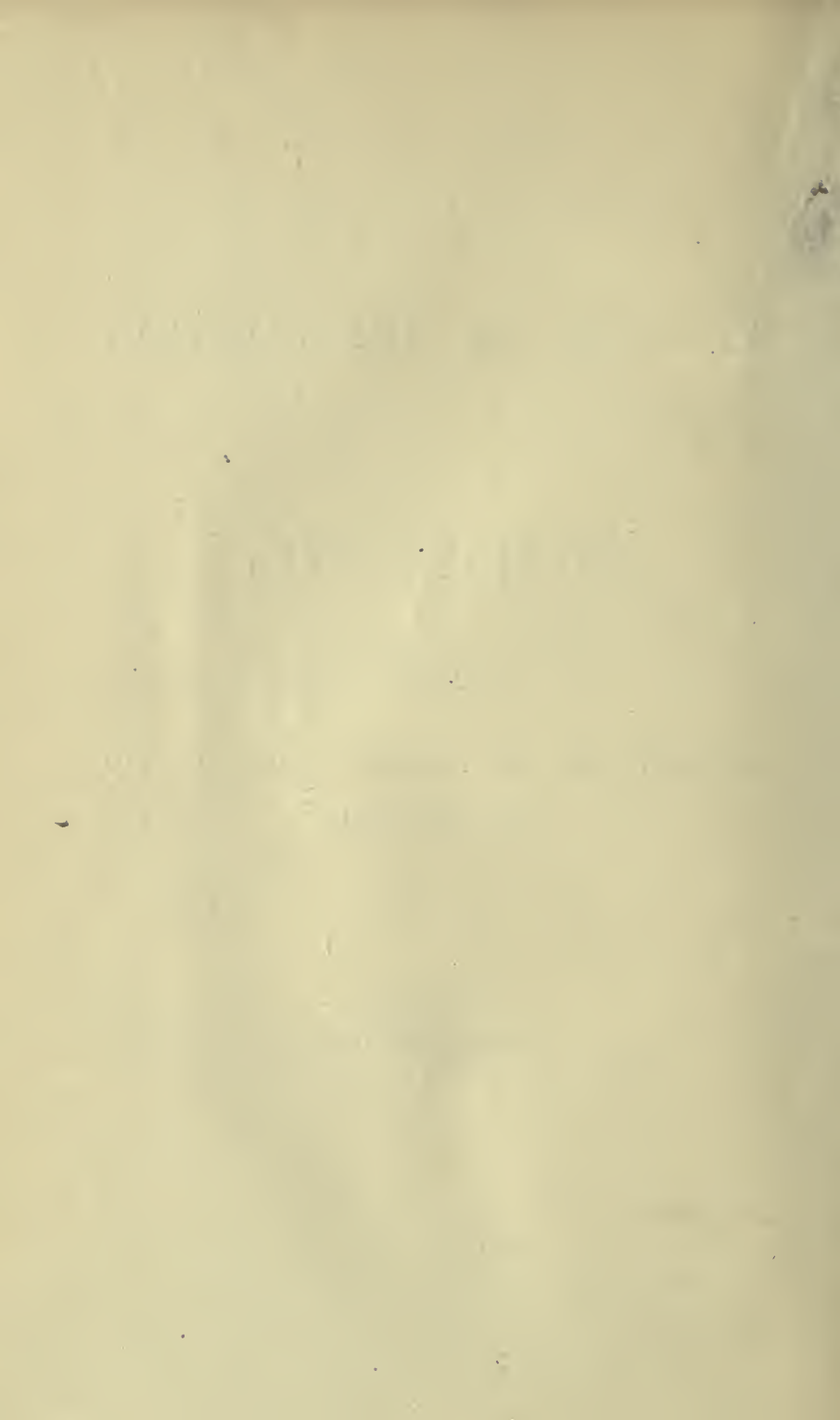
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## TO TEACHERS OF PRIMARY AND SECONDARY SCHOOLS.

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The Board of Public Education, at its meeting held in September, 1892, authorized the Superintendent of Public Schools, in connection with the Committee on Revision of Studies, to introduce into the primary and the secondary schools, such forms of elementary manual training as, in their judgment, may be deemed advisable. In accordance with this action, the following course in modeling has been prepared for use in the primary and the secondary schools of this city.

Teachers are requested to introduce the work indicated into their respective schools at as early a date as practicable. Since the character of the work is new to most of the schools, it will be necessary in the higher grades to begin and complete the course prescribed for the lower grades before the work assigned to these higher grades can be taken up.

It is understood that this course can not be fully accomplished in a single term, but it is expected that in another year the work of each grade will be carried out completely—or, at least very nearly so.

It will also be borne in mind that some teachers may not, at present, feel prepared to meet all the requirements of the course. Such teachers are requested to report to the Superintendent in order that arrangements may be made for a series of lessons to assist them in qualifying themselves to give the instruction specified in the course for the several grades.

Attention is also called to the fact that the clay-work of a year in the kindergarten embraces the modeling of the sphere, the cube and the cylinder, with simple objects derived from each of these type forms, such as grapes, apples, potatoes, melons, boxes, tea-chests, etc., with exercises also in inventive modeling. When kindergarten children in numbers sufficient to form a class enter the lowest primary grade, the practice they will have had in modeling should make it possible for that class to be carried further in the clay-work than they could otherwise go—at least in the number of objects modeled during the term.

## GENERAL SUGGESTIONS.

The work in modeling for every grade will consist of these principal divisions of the subject: I. Modeling the Type Forms; II. Modeling of common objects, natural and artificial, similar to the Type Forms; III. Decorative work in modeling. After the second year, Modeling in Relief is introduced and carried along with modeling in the solid, or "the round."

The modeling of every new type form, or common object based on it, is to be preceded by an observation lesson on the form as a whole, and on the relation of each object to its type. The entire lesson is to be conducted according to the following plan:—

1. Lesson on the Type Forms.
  - (a). Handle the forms and observe their characteristics.
  - (b). Contrast the forms with one another, and note their differences.
2. Expressing by language ideas respecting forms.
  - (a). Names of the different forms.
  - (b). Names of some of the elements of the forms.
  - (c). Names of some of the properties of the forms.
3. Modeling the forms.
  - (a). Making in clay the forms.
  - (b). Comparing the clay models with the type forms.
  - (c). Language to express ideas and thoughts.
4. Inventive work in modeling forms.

This outline will be given in full for the exercises in the first grade that teachers may see clearly its application, and it will be understood in each of the subsequent grades though not formally stated in the outline of the course for the grade.

In connection with each lesson the fancy and imagination of the pupil may be appealed to, to prompt him to model or invent some form other than that which has been studied, but which is within the limits of the type form for the lesson.

# Manual Training.

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## CLAY MODELING.

*First Year.*—FIRST GRADE.—*Time, five months.*

### I. THE TYPE FORMS.

1. The Forms to be used :—
  - (a). The Sphere. (b). The Cube. (c). The Cylinder.
2. Lessons on the Forms.
  - (a). Handle the forms and observe their characteristics.
  - (b). Contrast the forms with one another and note their differences.
  - (c). Place the forms in different relative positions.
3. Language in respect to the Forms.
  - (a). Names of the different forms.
  - (b). Names of some of the elements of the forms.
  - (c). Words expressing the relative position of the forms.
4. Modeling the Type Forms.
  - (a). Making the sphere, the cube, the cylinder.
  - (b). Comparing the clay models with the type forms.
  - (c). Language to express ideas and thoughts.

## 5. Inventive work in modeling Forms.

NOTE.—The teacher will ask questions about the forms, requiring pupils to use the names of the forms, names of their school-mates, and the pronouns I, he, she, and it, in sentences.

## II. COMMON OBJECTS (similar to the type forms).

## 1. List of objects to be modeled:—

(a). Objects similar to the sphere:—Ball, apple, orange.

(b). Objects similar to the cube:—Box, lump of cut loaf sugar.

(c). Objects similar to a cylinder:—Muff, round box.

## 2. Lessons on the objects.

(a). Handle the objects and observe their characteristics.

(b). Compare the objects with the type forms.

(c). Language to express ideas about the objects.

## 3. Modeling the objects.

(a). Making the objects in clay.

(b). Comparing the clay models with the objects.

(c). Language to express ideas and thoughts.

## 4. Inventive work in modeling common objects.

NOTE.—Require pupils to use the names of the objects and the pronouns I, he, she, and it, in sentences.

## III. DECORATIVE WORK.

## 1. Work with square Tablets.

(a). Modeling the tablets.

(b). Impressing the faces of the type forms on the tablets.

(c). Drawing on the tablets (circle, square, etc.).

## 2. Inventive work on Tablets.

- (a). Modeling square tablets of different sizes.
- (b). Drawing simple outlines on the tablets.

NOTES.—1. In impressing the type forms on tablets, have pupils try to form a variety of pleasing combinations. So also in the inventive drawing on tablets.

2. The teacher will exercise judgment in properly combining the inventive work with the other parts of the course.

*First Year.*—SECOND GRADE.—*Time, five months.*

## I. THE TYPE FORMS.

## 1. The forms to be used :—

- (a). The hemisphere.
- (b). The square prism.
- (c). The right-angled triangular prism.

## 2. Modeling the type forms.

- (a). Making hemisphere, square prism, etc.
- (b). Comparing clay models with type forms.
- (c). Language to express ideas and thoughts.

## 3. Inventive work in modeling forms.

NOTE.—The names of the forms, school-mates, and the pronouns I, he, she, and it, are to be used in sentences.

## II. COMMON OBJECTS (similar to the type forms).

## 1. List of objects to be modeled :—

- (a). Similar to the sphere :—Peach, gourd.
- (b). Similar to the cube :—Inkstand, square can.
- (c). Similar to the cylinder :—cheese, round can.
- (d). Similar to the hemisphere :—Half an apple, pin-cushion.
- (e). Similar to the square prism :—Box.

2. Modeling the objects.
  - (a). Making the objects in clay.
  - (b). Comparing clay models with the objects.
  - (c). Language to express ideas and thoughts.
3. Inventive work in modeling common objects.

NOTE.—In addition to names of forms, parts, etc., have children use words expressing what the objects will do, as roll, slide, stand, etc.

### III. DECORATIVE WORK.

1. Work with square tablets.
  - (a). Modeling the tablets.
  - (b). Impressing the faces of the type forms on the tablets.
  - (c). Drawing simple outlines on the tablets.
2. Inventive work with tablets.
  - (a). Modeling tablets of different forms.
  - (b). Drawing outlines on tablets.

NOTES.—1. Review the work of the previous grade.

2. In impressing the faces of the type forms on the tablets, have pupils try to form a variety of pleasing combinations. So also in the inventive drawing on the tablets. Endeavor to teach simple repetition and alteration.

*Second Year.*—THIRD GRADE.—*Time, five months.*

#### I. THE TYPE FORMS.

1. The forms to be used:—
  - (a). The ellipsoid.
  - (b). The ovoid.
  - (c). The equiangular triangular prism.
2. Modeling the type forms.
  - (a). Making the forms named above.
  - (b). Comparing clay models with the type forms.
  - (c). Language to express ideas and thoughts.
3. Inventive work in modeling forms.



## II. COMMON OBJECTS (similar to the type forms).

### 1. List of objects to be modeled:—

- (a). Similar to the sphere:—Round radish, melon.
- (b). Similar to the cube:—Toy bank, toy trunk.
- (c). Similar to the cylinder:—Drum, jar.
- (d). Similar to the hemisphere:—Cup, saucer.
- (e). Similar to the square prism:—Brick, double steps.
- (f). Similar to the ellipsoid:—Lemon, plum.
- (g). Similar to the ovoid:—Egg, chick.

### 2. Modeling the objects.

- (a). Making the objects in clay.
- (b). Comparing clay models with the objects.
- (c). Language to express ideas and thoughts.

### 3. Inventive work in modeling common objects.

## III. DECORATIVE WORK.

### 1. Modeling square and circular tablets.

- (a). Modeling the tablets.
- (b). Impressing the faces of the type forms on the tablets.
- (c). Drawing on the tablets.
- (d). Modeling square and circular tablets on the faces of other tablets.

### 2. Inventive work with tablets.

- (a). Modeling tablets of different forms.
- (b). Drawing outlines on the tablets.

NOTES—1. Review the work of the previous grades.

2. Lead pupils to a free and spontaneous expression of their ideas and thoughts. Call in play the imagination of children in the conception of ideal forms.

3. In impressing the type forms upon the tablets have pupils make impressed borders of the square, both upright and at 45 degrees, combined with the circle and ellipse. In inventive work lead the pupils to form a variety of pleasing combinations.

*Second Year.*—FOURTH GRADE.—*Time, five months.*

### I. THE TYPE FORMS.

1. The forms to be used :—
  - (a). The cone.
  - (b). The square pyramid.
  - (c). The vase-form.
2. Modeling the type forms.
  - (a). Making the forms in clay.
  - (b). Comparing clay models with the type forms.
  - (c). Language to express ideas and thoughts.
3. Inventive work in modeling forms.

### III. COMMON OBJECTS (similar to type forms).

1. List of objects to be modeled :—
  - (a). Similar to the sphere :—Tomato, turnip, squash.
  - (b). Similar to the cube :—Paper weight, footstool.
  - (c). Similar to the cylinder :—Banana, fire cracker.
  - (d). Similar to the hemisphere :—Half orange, bee-hive, basket.
  - (e). Similar to the square prism ;—Eraser.
  - (f). Similar to the ellipsoid :—Melon, potato.
  - (g). Similar to the ovoid :—Sweet potato, mouse.
  - (h). Similar to the cone :—Top, carrot.
2. Modeling the objects
  - (a). Making the objects in clay.
  - (b). Comparing clay models with the objects.
  - (c). Language to express ideas about the objects.
3. Inventive work in modeling objects.

## III. DECORATIVE WORK.

1. Modeling square and circular tablets.
  - (a). Making the tablets.
  - (b). Impressing the faces of type forms on the tablets.
  - (c). Drawing the faces of the type forms on the tablets.
2. Inventive work with tablets.
  - (a). Modeling tablets of different forms.
  - (b). Drawing outlines on tablets.
  - (c). Arranging ideal forms on tablets.

NOTES.—1. Review, as may be found necessary, the work of the previous grades.

2. In decorative work, continue the exercise of impressing the type forms on the tablets, making borders with these forms in repetition and alternation.

3. In inventive work, the pupils should be led to form a variety of pleasing combinations, thus giving culture to the art-sense.

*Third Year.*—FIFTH GRADE.—*Time, five months.*

## I. TYPE FORMS MODIFIED.

1. The forms to be modeled:—
  - (a). The sphere and cube bisected.
  - (b). The sphere and cube quadrisectioned.
  - (c). The cone truncated.
  - (d). The cone bisected and truncated.

## II. OBJECTS TO BE MODELED.

1. Common objects:—
  - (a). Similar to sphere:—Sugar bowl, round potato.
  - (b). Similar to cube:—Dog-house.
  - (c). Similar to cylinder:—Bottle, spool.
  - (d). Similar to hemisphere:—Dish with handles, half-peach with stone.
  - (e). Similar to square prism:—Book, bench.
  - (f). Similar to ellipsoid:—Olive, gourd.
  - (g). Similar to ovoid:—Acorn, gosling.
  - (h). Similar to cone:—Oyster-plant, ink-bottle.

## 2. Leaf forms.

(a). From nature:—The lilac, morning glory.

(b). From models:—The lilac, morning glory.

## 3. Animal forms.

(a). From nature:—Chick, duckling, mouse.

(b). From models:—Chick, duckling, mouse.

NOTE.—The leaf forms are to be modeled on tablets.

## III. DECORATIVE WORK.

## 1. Forms in relief:—

(a). Geometric forms in relief:—Circle, square, triangle.

(b). Rosettes in relief:—The type forms modified.

(c). Leaves in relief:—Lilac, morning glory, ivy.

## 2. Inventive work:—

(a). Modifying the type forms.

(b). Ideal objects selected by the pupils.

(c). Ideal leaf and animal forms.

NOTES.—1. Borders:—Continue to make borders by combining the type forms and their modifications in repetition and alternation.

2. Rosettes:—In these the centre may be composed of the sphere and hemisphere modified or indented. The cone and sphere divided or modified and repeated may be used to form the radiating part.

3. The leaves in relief may be single leaves on the tablet or united into designs forming a radiation about a centre. The "models" for leaves should be conventional.

*Third Year.—SIXTH GRADE.—Time, five months.*

## I. TYPE FORMS MODIFIED.

## 1. The forms to be modeled:—

(a). Sphere and cube bisected and quadrisectioned.

(b). Cone and square pyramid bisected and truncated.

## II. OBJECTS TO BE MODELED.

## 1. Common objects :—

(a). Similar to the sphere :—Globe for gold-fish, bunch of cherries. (b). Similar to the cylinder :—Pea-pod, rolling-pin. (c). Similar to the hemisphere :—Cap, bowl with band. (d). Similar to the square prism :—Chest, trunk, double steps. (e). Similar to the ellipsoid :—Onion, lime, shellbark. (f). Similar to the ovoid :—Bird, pig. (g). Similar to the cone :—Radish, parsnip.

## 2. Leaf forms.

(a). From nature :—Morning glory, poplar, ivy, maple.

(b). From models :—Morning glory, poplar, ivy, maple.

## 3. Animal forms.

(a). From nature :—Guinea pig, cat, dog, fish.

(b). From models :—Guinea pig, cat, dog, fish.

## III. DECORATIVE WORK.

## 1. Forms in relief :—

(a). Geometric forms in relief :—Oblong, ellipse, oval.

(b). Rosettes in relief :—The type forms modified.

(c). Leaves in relief :—Morning glory, poplar, etc.

## 2. Inventive work :—

(a). Modifying the type forms.

(b). Ideal objects selected by the pupils.

(c). Ideal leaf and animal forms.

Notes.—1. Review the work of previous grades so far as may be necessary. The leaf forms are to be modeled on tablets.

2. The rosettes are to be composed of the ellipsoid and the semi-ellipsoid, compressed and indented, and combined with the sphere and hemisphere. Also of the square pyramid divided and combined with the hemisphere.

3. The leaves in relief may be single leaves on the tablets, or united into designs forming a radiation about a centre.

*Fourth Year.*—SEVENTH GRADE.—*Time, five months.*

### I. TYPE FORMS MODIFIED.

1. The ellipsoid bisected and quadrisected.
2. The ovoid bisected and quadrisected.
3. The triangular prism divided by planes parallel to the base.

### II. OBJECTS TO BE MODELED.

1. Common objects :—

(a). Similar to the sphere :—Onion, bunch of grapes. (b). Similar to the cylinder :—Napkin in ring, bean-pod. (c). Similar to the hemisphere :—Hat, raspberry. (d). Similar to the square prism :—Curbstone, toy-house. (e). Similar to the ellipsoid :—Cucumber, pecan-nut. (d). Similar to the ovoid :—Pear, strawberry. (e). Similar to the cone :—Pinecone, beet.

2. Leaf forms.

(a). From nature :—Violet, chestnut, maple.  
 (b). From models :—Violet, chestnut, maple.

3. Animal forms.

(a). From nature :—Rabbit, squirrel, pig, pigeon.  
 (b). From models :—Rabbit, squirrel, pig, pigeon.

### III. DECORATIVE WORK.

1. Forms in relief :—

(a). Geometric forms :—Hemisphere, semi-ellipsoid.  
 (b). Rosettes in relief :—The type forms modified.  
 (c). Leaves in relief :—Maple, chestnut, oxalis.  
 (d). Animals in relief :—Fish, chick.

## 2. Inventive work :—

- (a). Modifying the type forms.
- (b). Ideal objects selected by the pupils.
- (c). Ideal leaf and animal forms.

NOTES.—1. Review the work of previous grades so far as may be necessary. The leaf forms are to be modeled on tablets.

2. The rosettes are to be composed of the ovoid and semi-ovoid combined with the modifications of the type forms mentioned in the fifth and sixth grades.

3. The leaves in relief may be single leaves on the tablet, or in repetition forming a border, or united into designs forming a radiation about a centre.

*Fourth Year.*—EIGHTH GRADE.—*Time, five months.*

## I. TYPE FORMS MODIFIED.

1. Square prism divided vertically in various ways.
2. Square prism divided horizontally.
3. Cylinder divided vertically and horizontally.
4. Modifications of the vase-form.

## II. OBJECTS TO BE MODELED.

## 1. Common objects :—

(a). Similar to sphere :—English walnut, basket of fruit. (b). Similar to the cylinder :—Vase, ear of corn. (c). Similar to the hemisphere :—Tortoise, mushroom. (d). Similar to the square prism :—A cross, triple steps. (e). Similar to the ellipsoid :—Cantaloupe, pea-nut. (f). Similar to the ovoid :—Egg-plant, vase. (g). Similar to the cone :—Pear, rutabaga.

## 2. Leaf and flower forms.

- (a). Leaves :—Violet, oak, chestnut, maple.
- (b). Flowers :—Rose bud, calla lily, tulip poplar.

## 3. Animal forms.

- (a). Birds:—Hen, sparrow, goose.  
 (b). Quadrupeds:—Rabbit, sheep.

## III. DECORATIVE WORK.

## 1. Forms in relief:—

- (a). Geometric forms:—Hemisphere, semi-ovoid, semi-ellipsoid.  
 (b). Rosettes in relief:—Type forms modified.  
 (c). Leaves in relief:—Violet, oak, chestnut, maple.  
 (d). Flower forms in relief:—Wild-rose, dog-wood blossom, daisy, tulip poplar.  
 (e). Animal forms in relief:—Duck, pig, human face.

## 2. Inventive work:—

- (a). Modifying the type forms.  
 (b). Ideal objects selected by the pupils.  
 (c). Ideal leaf and animal forms.

NOTES.—1. Review the work of previous grades so far as may be necessary. The leaf forms are to be modeled on tablets.

2. In the type forms modified, the square prism is to be divided into square prisms, right-angled triangular prisms, square plinths, and square tablets. The cylinder is to be divided, forming oblong faces, semi-circles, quarter-circles, circular tablets, and circular plinths.

3. In respect to rosettes, see note under the seventh grade.

## ADDITIONAL EXERCISES.

In addition to the graded work presented for the primary grades, the following list of exercises is also given, from which teachers may make such selections as they think proper:—

Groups of balls, rings, arches, balls on tablets, double link, triple link, shells, bird's-nest, canoe, frog, shoe, shoe last, etc.











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