

(b) A group of pupils have a dish of mercury and a graduated glass tube about 85 centimeters in length, closed at one end. Lead them to discover the principle of the barometer.

(c) When the tube is filled with mercury and inverted in the dish, a pupil thinks that the space above the mercury in the tube is filled with air. How would you convince him of his error?

(d) Your class being now familiar with the principle taught in (b), outline your method of teaching the relation between the volume of a gas and the pressure to which it is subjected, so as to lead to a generalisation. (Select your own apparatus.)

3. A class is to have a first lesson on the nature of a fruit.

(a) What work in Botany should the pupils have already done, and why?

(b) What material would you place in their hands and on what grounds would you make your selection?

(c) Indicate your method of leading the class to distinguish between a true fruit and a pseudocarp, selecting your own material.

4. (a) What microscopic work would you take up with a Fourth Form class in Botany, before making use of prepared slides and why?

(b) What educational value do you attach to making accurate drawings of microscopic objects?

(c) You are about to prepare a set of botanical slides for use in class work from year to year. Give what you consider a suitable list with reasons for your selections.

5. (a) Assuming that fishes and batrachians have been studied, outline your plan of conducting the study of such a type as the turtle or the snake.

(b) Specify the drawings you would have the class make while engaged on the type you select, and also what you would consider the best method of indicating or describing in a sketch-book the important points or features in a drawing.

(c) What use would you make of plates and figures from text-books in class work?

#### METHODS IN MATHEMATICS.

Examiners: { J. H. McGeary, M.A.  
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1. Teach the following problem as an application of the principles of fractions:

A and B have  $7\frac{1}{2}$  acres to plough. After working  $1\frac{1}{2}$  days A leaves and B finishes in  $3\frac{1}{2}$  days more. If B had left

instead of A it would have taken  $1\frac{1}{2}$  days to finish. How long would it take each to plough the field alone?

2. Teach a first lesson in Stocks.

3. How would you lead a class, from the consideration of simpler solids, to the determination of the expression for the volume of a cone of given dimensions?

4. Show how you would introduce the subject of negative quantities to a class of beginners in Algebra.

5. " $f(x)$  is divisible by  $x-a$  if  $f(a)=0$ ."

Give your method of teaching both the above principle and its application to the solution of equations.

6. Teach a lesson on the extraction of the square root of expressions of the form  $a$  plus or minus sq. rt. of  $b$ .

7. Outline a review-lesson in Euclid to show the purpose served by the definitions, postulates, and axioms, and their relation to propositions.

8. (a) How would you deal with a pupil's statement that the diagonal of a parallelogram bisects the angles through which it passes?

(b) If two parallelograms are on the same base and between the same parallels, their areas are equal. (Euc. I., 35).

Teach the above proposition.

#### ASSAULT AT ARMS.

ON Monday evening, March 13th, the O. N. C. and H. C. I. Athletic Association held an Assault at Arms. R. M. Chase won the fencing bout. Hinch and Martin were victors in the pick o'back contest, though McKinley and Sifton gave them a good rub. "Varsity" (Davidson, Balis, Fisher, Sifton, Martin) pulled the S. L. team (Holmes, Morrell, Aberhart, Watt, Hiltz) in the tug. Room 9 defeated the Senior Leavings in a game of Basket-Ball for the Championship of the Collegiate. The affair was a great success and established a good precedent.

Little Willie from his mirror.

Sucked the mercury all off.

Thinking in his childish error

It would cure his whooping cough.

At the funeral, Willie's mother

Smartly said to Mrs. Brown

'Twas a chilly day for William

When the mercury went down.