

COUNTY OF VICTORIA MODEL SCHOOL,
OCTOBER, 1896.

(Continued from page 531.)

HYGIENE.

Examiner—Johnshaw.

1. Name the organs of respiration and circulation.
2. Give Buckton's classification of human food.
3. In cases of fainting, artery bleeding, and partial drowning, about the school house, what immediate steps would you take?
4. The attitude in studying, drawing, writing and sewing, is controlled by what hygienic rules?
5. What games and modes of exercise and recreation would you encourage about a rural school?
6. Write a note upon:—(1) The causes by which the health and constitution of children at school are impaired, and the best modes of counteracting the same. (2) School light, temperature and ventilation. (3) The hygienic results of a growing child daily carrying to and from school a satchel of books, six to ten pounds weight. (4) The hygienic tendency of the school programme of the Province of Ontario.

MENTAL ARITHMETIC.

Examiners—W. E. Tilley and James White.

1. If $1\frac{1}{2}$ pounds of coffee cost 60 cents, what will 4 pounds cost?

II. One person spends \$7 in coal at \$9 a ton and another \$9 in coal at \$11 a ton; what fraction of a ton has one more than the other?

III. By selling a horse which cost \$72 I gained $7\frac{1}{4}$ per cent. of the selling price. Find the selling price.

IV. John bought a number of calves for \$80, he sold $\frac{3}{4}$ and afterwards $\frac{1}{4}$ of the remainder at cost for \$40. How many had he bought?

V. At $6\frac{1}{2}$ per cent. what will be the bank discount on \$144 for 4 months?

VI. A bought 3 per cent stock at 88 $\frac{1}{2}$ and sold it to B at 88 $\frac{1}{2}$ gaining \$27. Find the annual income from the stock.

VII. Five men hire a coach and when four more join them the cost to each is reduced \$1.20. What was paid for it?

VIII. At what must I mark goods that cost 60 cents per yard, so that I may take off 10 per cent. and have a profit of 12 cents per yard?

IX. If the interest on \$900 for 3 years and 4 months is \$70, find the rate per cent.

X. Bought an article for \$1.06 on 12 months' credit, and sold it at once on 9 months' credit, so as neither to gain or lose, money being worth 6 per cent. Find selling price.

THE place of iron as sleepers for railways is likely soon to be taken by glass. But the glass must be fitted for this purpose by having its brittleness changed into a fibrous toughness. This is done by melting the glass, moulding it into the required shapes, submitting it to a high temperature, and immersing it, thus heated, in a cold oil bath. The toughened glass produced in this way is said to possess enormous powers of resistance a plate of about one inch in thickness not being broken by a weight of nine hundred pounds let fall upon it from a height of seven-

teen feet. These glass sleepers have been made in pieces, each three feet long, and having their upper surfaces suited to the inferior surfaces of the rails; and the experiments already undertaken and carried through have been eminently successful. As glass does not oxidize or corrode in any way under ordinary conditions, the tempered or fibrous variety will, doubtless, for many purposes, be preferred to iron, *i.e.*, if that tough, fibrous, non-crystalline state be proved to be a permanent one, and not easily altered by friction.