

the piece down upon it, then take the remaining piece and cut it so that the rest of the rectangle may be covered.

(1.) A black-board is 5 feet wide and 12 feet long; what distance are the opposite corners apart?

(2.) The opposite corners of a class-room are 35 feet apart, the length of the room is 28 feet; find its width.

(3.) A farmer going from his work to the house passes 35 rods east along the end of a field, then north 84 rods to the house; how much less walking would he have to do if he had taken the nearest way across the field?

(4.) The distance from the ridge to the eaves of a building is 15 feet, and the perpendicular height of the gable end 9 feet; what is the breadth of the building?

(5.) The base of a right-angled triangle is 20 feet, the perpendicular 15 feet, and a perpendicular is drawn from the right-angle upon the hypotenuse; find the length of the segments.

### PENMANSHIP IN PUBLIC SCHOOLS.

#### III.

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As soon as pupils have been taught the formation of letters, in accordance with the instructions previously given, and can combine them into words, pen and paper should be substituted for pencil and slate.

#### MATERIALS.

**Writing Materials** should always be the best that can be procured. They should be of uniform quality throughout the class, that all pupils may have equal advantages, and should be selected in accordance with the teacher's directions.

**Paper.**—Paper should be of good quality, smooth and firm, and always bound in the form of books. A well graded series of headline copy-books is decidedly the best. Teachers have no time for writing headlines, and but few write sufficiently well that their copies may be taken as perfect models for imitation.

**Practice Exercise-book**—Besides the copy-book, each pupil should be provided with half a quire of large-sized letter-paper or a spare blank-book, ruled without copies, in which to practise exercises designed to train the hand in acquiring facility of execution for those movements which the actual forms of writing require. These exercises should be practised five or ten minutes before the regular lesson, and should be written with the same care as those in the copy-book. A good plan of obtaining regularity of movement is to have these exercises practised in concert at first. Well graded movement exercises develop and strengthen the powers of the fingers, hand and arm, and so train the muscles that they become completely under the control of the will.

**Pens.**—A pen with smooth, even points, making a uniform and clear mark at all times, not too sharp, but fine enough to make the delicate hair lines, and sufficiently elastic to make the shades even and clear, should be selected, and the teacher should insist upon every pupil in the class using the same kind of pen. A good pen costs no more than a bad one, and the teacher should be a better judge in making the selection than a pupil. If this is not done, some pupils will bring pens altogether too fine and sharp, and others large, coarse ones, designed only for writing on rough wrapping paper. Gillott's 292 will be found to possess the required qualities, and can be procured from any stationer. In Cities and Towns it is better for the Boards to provide the pens.

New pens being more or less oily, should be wet and wiped dry before using, that the ink may flow from them freely.

**Pen Holders.**—Plain, light, wooden holders, about six inches in length, are the best. Avoid those made of ivory, or any heavy material. They should be simple in construction, clasp the pen firmly, holding it immovable while writing, yet be capable of being easily removed when worn out or broken. About one-third of a pen such as Gillott's 292, should be inserted in the holder.

**Ink.**—Black Ink is best for school purposes. It is of various shades and qualities, but only that which is sufficiently dark when first used to show a pupil how his work will appear, flows freely, and will not change its color or spread under the surface of the paper, should be used. The rapid evaporation of the watery part of ink soon causes it to thicken. It should then be diluted with clean, soft water. Ink-wells should be covered when not in use, thoroughly cleaned as soon as any sediment accumulates, and replenished at least once a week. In taking ink the pupil should be cautioned to dip the pen only to its shoulder, and slowly remove it, not allowing it to touch the inkstand. If it is removed too rapidly the attraction of the fluid will leave too much ink on the pen. This rule, carefully observed, will save blots and inky fingers.

**Pen Wipers.**—The teacher should see that every pupil is provided with a suitable pen wiper. They may be conveniently made of two or three circular pieces of dark cloth, stitched together in the centre. The pen should be wiped between the folds, so that if the pen wiper should happen to fall upon the copy-book, there may be no blot. After the pen is used it should be wiped dry.

**Black-boards.**—It is unnecessary to give hints on making black-boards, as we trust every school-room in the country is well provided with such a necessity to successful teaching. They are as essential in teaching penmanship as arithmetic, and should be freely used in connection with every writing lesson. Success in the management of writing classes depends almost entirely upon a proper use of chalk and black-board. The intelligent teacher who understands criticising and explaining penmanship, even though he be not a good penman himself, and keeps up an interest and enthusiasm in his pupils by a proper use of black-board illustrations, will be able to show more improvement in three weeks' time than those adopting the plan of allowing pupils to imitate and practise according to individual fancy, can in as many months.

### Notes and News.

#### ONTARIO.

The *Beacon* says the Kindergarten is to be introduced in Stratford.

The Trustees of Toronto Public Schools are arranging to have Sewing and Drill Classes organized and conducted by experts.

Brant County Institute has founded a Teachers' Professional library.

Dr. Phillips read a most excellent paper at the last meeting of the Brant Association on Hygiene. He strongly urged the necessity for good ventilation, pure water, proper drainage, &c.

Brantford Teachers' Association did wisely in arranging the topics for their next meeting, six months ahead. Each teacher will have time to prepare himself on any of the subjects he chooses. The following topics were proposed for discussion at the next meeting of the Institute: "Drawing—how to teach it;" "How to teach Geography to a third class;" "How to teach addition;" "How to teach mental arithmetic;" "How to teach an object lesson;" "Best methods of analysis in grammar;" "Kindergarten system;" "Teachers' salaries;" "Question drawer." It was also proposed to invite Prof. Young to the next meeting of the Institute, to give his lecture on Psychology.

Ailsa Craig and Newbury have each added an additional teacher to their staff.

It is reported that Dr. Fyfe, Principal of Woodstock Institute, will retire from his position, and that he will probably be succeeded by Professor Wells.